Rice seed breeding business development strategy

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Abstract. South Sulawesi is one of the producers and buffers of rice for national food needs. North Luwu Regency is a rice producing area in South Sulawesi with a total production of 178,243 tons and a harvest area of 38,940 ha in 2015. The inhibition factor of rice farmers is that the superior seeds available do not meet the needs of farmers. Of the 6 seed breeding businesses only 4 are still active. This research aims to produce strategies for seed breeding efforts so as to meet the needs of quality seeds. In achieving these goals swot analysis is used. The strategies offered from the results of this research are to increase the quantity of products by optimizing their resources, providing seeds at an affordable price, increasing the capacity of experts, increasing the availability of capital, improving the quality of seeds, developing marketing networks, and improving relationships with the government.

1. Introduction

Rice is the most important plant in Indonesia, this is because the main food in Indonesia is rice derived from rice produced by rice crops. Food availability is strongly influenced by the success of increasing production in farming. Similarly, the increase in food production, especially rice, is closely related to the use of quality seeds in the production field. By using quality seeds and clear origin is expected to be able to increase productivity per unit area, the uniformity of plants and more resistant to pests and diseases [1].

One of the rice producing areas in South Sulawesi is North Luwu Regency, where North Luwu Regency has rice production of 178,243 tons with a harvest area of 38,940 ha in 2015. To increase rice production, one of the factors of concern is the availability of superior seeds. The ministry of agriculture gives great hope to the availability of seeds with various programs including seed subsidies and seed independent village development.

There are 6 groups of seed breeding efforts in North Luwu Regency. There are 4 groups that are still active and 2 groups that are no longer active. The rice seed breeding business in North Luwu Regency, as shown in table1.

The number of existing breeding businesses are not able to meet the needs of quality rice seeds in North Luwu Regency, so the needs of rice seeds, must be met from outside the area with the risk of un-guaranteed quality and more costs compared to buying rice seeds in North Luwu Regency itself.

The actions that can be taken by the Local Government in increasing the availability of quality seeds, by providing support for the development of rice seed breeding business. Therefore, it is necessary to intervene from the government and related agencies in helping to meet the availability of quality rice seeds in North Luwu Regency.
Table 1. Rice seed breeding business in North Luwu Regency in 2016.

| Manufacturer Name       | District     | Status     | Product Capacity | Description |
|-------------------------|--------------|------------|------------------|-------------|
| UPBS BPTP Sul-sel       | Bone-Bone    | Obyek Dinas| 80-90 ton/year   | Active      |
| IKB. KATULUNGAN         | Sukamaju     | Obyek Dinas| 10-15 ton/year   | Active      |
| KT. UJUNG MAKMUR        | Sukamaju     | Swasta     | 40-50 ton/year   | Active      |
| PB. INDAH               | Baebunta     | Swasta     | 10-15 ton/year   | Active      |
| PB. TANI MAKMUR         | Tanalili     | Swasta     | 10-15 ton/year   | Inactive    |
| BALAI BENIH DAERAH      | Bone-Bone    | Obyek Dinas| 5-10 ton/year    | Inactive    |

The same research on seed breeding prospects was also conducted by [2]. In this study produced a strategy by using the strengths that have to overcome weaknesses and threats. The threat in the form of the possibility of the emergence of seed breeding farming businesses from other farmer groups is superior due to the quality of seeds from other farmer groups that are better and certified, as well as extensive marketing and known by farmers [2].

Based on the description and statement above that shows the many problems that occur in the field seed breeding efforts in meeting the availability of quality seeds, it is necessary to conduct research on "Rice Seed Breeding Business Development Strategy in North Luwu Regency, South Sulawesi Province".

2. Research methods

The research was conducted in North Luwu Regency, South Sulawesi Province. The location of the research was determined by way of pusposive with the consideration of North Luwu Regency is one of the rice producing areas in South Sulawesi. The research was conducted in November-December 2017. The data used are primary and secondary data collected through interviews, focus group discussions, and the dissemination of questionnaires. The samples taken are all active seed breeding populations. The analysis method used in determining seed management business development strategy in North Luwu Regency is by using SWOT analysis (strength, weakness, opportunity, threat) described [3] in the following matrix (table 2).

| SWOT Analysis | Internal Analysis | Weaknesses |
|---------------|-------------------|------------|
|               | Strengths         |            |
| **Opportunities** | S-O Strategy: Create strategies that use force to take advantage of opportunities | W-O Strategy: Create strategies that minimize weaknesses to take advantage of opportunities |
| **Threats**    | S-T Strategy: Create strategies that use force to address threats | W-T Strategy: Create strategies that minimize weaknesses and avoid threats |

3. Results and discussion

SWOT analysis aims to find out the strengths and weaknesses (Internal factors) as well as opportunities and threats (external factors) of rice seed breeding efforts in North Luwu Regency. SWOT analysis is carried out on three main aspects, namely farming, seed processing and marketing. Swot analysis on captive breeding efforts can be seen in table 3 [4].
### Table 3. SWOT analysis of rice seed breeding business in North Luwu Regency, 2017.

| Activities                  | Strength(S)                                                                 | Weakness (W)                                                                 | Opportunity (O)                                                                 | Threats (T)                                                                 |
|-----------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| Farming                     |                                                                              |                                                                              |                                                                                  |                                                                               |
| - Land                      | - The amount of land owned. (US,UP)                                         | - Land use is not yet maximal. (US,UP)                                       | - Capital assistance from the government (US,UP)                              | - Limited assistance (US,UP)                                                 |
| - Labor                     | - Labor experts in rouging (US,UP)                                          | - Limited skilled work (US, UP)                                             | - Government Policy on SDMB (US)                                              | - Limited quota. (US)                                                        |
| - Production                | - Produce potential seed who pass the selection (US,UP)                     | - Maximum production amount (US,UP)                                         | - The need for seeds is high. (US,UP)                                         | - Erratic climate and weather and disruption (US,UP) |
| - Organization              | - Presence of inactive members (US)                                         |                                                                              | - Help captive farmer group (US)                                              | - Limited assistance provided (US)                                           |
| - Tools                     | - Equipment availability (US, UP)                                           | - Easily damaged equipment (UP, US)                                         | - Equipment assistance to KT (US)                                             |                                                                               |
| Potential processing seed   | - Produce superior seeds (US, UP)                                           | - Low production amount (US,UP)                                             | - Seed needs at a high (US,UP)                                               | - Erratic climate and weather (US,UP)                                        |
| Marketing                   |                                                                              |                                                                              |                                                                                  |                                                                               |
| - Government Policy         | - Program SDMB (US)                                                         | - Limited Quota Amount (US)                                                 | - Lack of interest in farmers’ seed subsidies (US)                            | - Seed subsidies come from outside the region (US,UP)                        |
| - Subsidized seeds (UP)     | - Lack of interest in farmers’ seed subsidies (UP)                          |                                                                              | - High seed needs (US,UP)                                                    |                                                                               |
| - Price                     | - Price according to seed quality (US)                                      | - Difference in price of subsidies & non-subsidies (US)                     | - Get subsidy assistance(US)                                                 | - Seed subsidies come from outside the region (US,UP)                        |
| - Promotion                 | - Difference in price of subsidies & non-subsidies (UP)                     |                                                                              | - High demand (UP, US)                                                       |                                                                               |
| - Distribution              | - Using an information system (US,UP)                                      | - Still a passive promotion (US,UP)                                         | - Seed subsidy policy (US,UP)                                                | - Seed subsidies come from outside the region (US,UP)                        |
|                             | - In cooperation with the dealer (US,UP)                                   | - Marketing is still in the area (US,UP)                                   |                                                                              | - The existence of seed subsidies originating from outside (US,UP)           |

The strategy analysis is formulated using a SWOT matrix that clearly illustrates how the opportunities and threats faced by the Rice Seed Breeding Business in North Luwu Regency are adjusted to the strengths and weaknesses of the captive breeding business. Swot matrix produces
alternative strategies classified into four general strategies namely SO, ST, WO and WT strategies. Based on swot matrix analysis on captive breeding efforts through table 4 and table 5 obtained alternatives – alternative general strategies consisting of SO strategy, WO strategy, ST strategy and WT strategy [5].

Table 4. SWOT matrix of private rice seed breeding business in North Luwu Regency, 2017.

| Internal | Strengths (S) | Weaknesses (W) |
|----------|---------------|---------------|
|          | - The area of manageable land | - Land use that is not yet maximal |
|          | - Produce rice seed products with quality quality | - Limited experts for rouging |
|          | - Cooperation with several suppliers | - Production has not been able to meet market demand |
|          | - There is help from the government | - Limited capital availability |
|          | - Promotion is still lacking |

| External | Opportunities (O) | Strategy S – O | Strategy W – O |
|----------|-------------------|----------------|----------------|
|          | - Government Policy | Increase product quantity by optimizing resources (S1, S4, O1, O3). | - Increase capacity and number of experts especially rouging (W2, W3, O1). |
|          | - Regular customers | - Increase capital availability (W1, W3, W4, O1, O3). | |
|          | - Increased rice needs | - Limited experts for rouging | |
|          | - Lack of interest in farmers’ seed subsidies | |
|          | | | |

| Opportunities (O) | Strategy S – T | Strategy W – T |
|-------------------|----------------|----------------|
|                   | Improving the quality of seeds, to compete with seeds from outside the region (S2, S3, S4, T4). | Developing network marketing (W4, W5, T4) |
|                   | - Subsidized seeds come from outside the region | Improving relations with the Government (Subsidies) (W1, W2, W4, W5, T1, T4) |

Table 5. SWOT Matrix of government rice seed breeding business in North Luwu Regency, 2017.

| Internal | Strengths (S) | Weaknesses (W) |
|----------|---------------|---------------|
|          | - The area of manageable land | - Land use that is not yet maximal |
|          | - Produce rice seed products with quality quality | - Limited experts for rouging |
|          | - Cooperation with several suppliers | - Production has not been able to meet market demand |
|          | - There is help from the government | - Limited capital availability |
|          | - Subsidized seeds | - Promotion is still lacking |

| Opportunities (O) | Strategy S – O | Strategy W – O |
|-------------------|----------------|----------------|
|                   | Increase product quantity by optimizing resources (S1, S4, O1, O3). | Increase capacity and number of experts especially rouging (W2, W3, O1). |
|                   | - Provide seeds at affordable prices (S4, S5, O1, O2) | |
|                   | | | |
Threats (T)  
- Erratic climate and weather  
- The presence of pest and disease attacks  
- Subsidized seeds come from outside the region  
- Lack of interest in farmers' seed subsidies  

| Threats (T) | Strategy S – T | Strategy W – T |
|------------|----------------|----------------|
| - Erratic climate and weather | - Improving the quality of seeds, to compete with seeds from outside the region (S2, S3, S4, T4). | - Developing network marketing (W4, W5, T4). |

3.1 S-O Strategy
Pay attention to the strength in producing quality seeds and the presence of government assistance and land availability by looking at government policies, increasing rice needs and a growing population as opportunities. Increasing production is an important strategy in running a business by optimizing the resources owned can help increase the amount of production and revenue from a business, both for privately owned and government-owned breeding businesses. In addition, the strategy that can be done in the government's rice seed breeding efforts is to provide seeds at an affordable price for farmers. With this strategy, it is expected that captive breeding efforts can maintain the quality of seeds produced, as well as be able to meet existing demand by increasing the production of rice seeds produced.

3.2 W-O Strategy
Increasing the capacity and number of experts, especially rouging in private and government seed breeding businesses and increasing the availability of capital for privately owned captive breeding businesses is a strategy to overcome the weakness of captive breeding efforts due to limited rouging and limited capital. For privately owned rice seed breeding efforts can be overcome by utilizing government policies, one of which is in the SDMB program "Seribu Desa Mandiri Benih". SDMB provides saprodi assistance, agricultural machinery and training for captive farmers to increase seed production in order to meet customer demand in the region for rice needs caused by the growing population. So this strategy will increase the income and welfare of farmers which implies the availability of capital. As for captive breeding efforts the government can cooperate with the relevant government regarding training activities for members involved in rouging.

3.3 S-T Strategy
The third strategy is to improve the quality of seeds to compete with seeds from outside the region by utilizing the power in producing quality seeds and assistance from the government to overcome the threat of seed subsidies coming from outside the region. Strategies in improving product quality to attract customers are strategies used to increase sales and improve products in order to create innovations in products. Product development is carried out by using all resources owned optimally to improve the competitiveness and selling power of products in the eyes of consumers. To increase competitiveness and selling power, captive breeding efforts need to grading the rice seeds produced. Grading is done to maintain quality and increase sales. Rice seeds with good grades can be marketed through farmers, distributors, or the Agriculture Department. With grading, member farmers will strive to produce rice seeds with good grades.

3.4 W-T Strategy
Both internal and external environment, rice seed marketing will continue to change. Therefore, captive breeding efforts must continue to make improvements and improvements in quality related to rice seeds. This is done so that the captive breeding business can meet consumer demand and be able to compete in the industry in accordance with existing market dynamics. In addition, the promotion carried out by captive breeding efforts until now is still limited to passive promotion that awaits the arrival of customers to buy rice seed products therefore along with the development of the era there needs to be a new breakthrough that is more active. So that the development of network marketing by
using social media where data and information exchange to be easier and faster so that the promotional strategy carried out can expand and run effectively and efficiently, and improve relations with the government is an important strategy in developing businesses, especially in privately owned seed breeding businesses.

4. Conclusion
Based on the results and discussions that have been done can be concluded that the strategy of rice seed breeding business development in North Luwu Regency is as follows:

- Increasing the quantity of products by optimizing the resources owned (S-O).
- Increasing the capacity of experts, especially rouging (W-O).
- Increase the availability of capital (W-O).
- Improving the quality of seeds, to compete with seeds from outside the region (S-T).
- Develop network marketing (W-T).
- Improving relations with the Government (Subsidy) (W-T).

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