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Rice commodity agribusiness development strategy in improving food security after the Covid-19 pandemic in Indonesia: Case study in Tulang Bawang Regency

Estratégia de desenvolvimento do agronegócio commodity de arroz em melhoria segurança alimentar após a pandemia de Covid-19 na Indonésia: Estudo de caso na Regência de Tulang Bawang

Estrategia De desarrollo de agronegocios de productos básicos de arroz para mejorar seguridad alimentaria después de la pandemia del Covid-19 en Indonesia: Estudio de caso en la Regencia de Tulang Bawang

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Abstract
Attention to food problems in Indonesia is considered very important, because food is the largest expenditure in the household. there are 104,242 heads of households who depend on rice farming and horticulture, and 137,309 elderly people aged 18–60 years who work as registered farmers in Tulang Bawang district. The rice commodity agribusiness development strategy is prepared based on external results and an internal evaluation matrix. This research aimed to determining the appropriate strategy for the development of rice commodity agribusiness in Tulang Bawang Regency in increasing food security after the Covid-19 pandemic. The methodology uses the location of the research was carried out in the Tulang Bawang Regency. The type of data used is primary and secondary data. The methodology is, using the EFE (External Factor Evaluation) and IFE (Internal Factor Evaluation) matrices. After that, a SWOT (Strength Weakness Opportunities Threats) QSPM (Quantitative Strategic Planning Matrix) analysis was carried out. Alternative the market penetration and development strategy undertaken is the intensification of rice farming; synergy between farmers, entrepreneurs and the government; strengthening regional food policies that are pro-farmers; revitalization of agricultural facilities and infrastructure.
Keywords: Rice commodity; Agribusiness development strategy; Improving food security; Regional food policy; Goverment.

Resumo
A atenção aos problemas alimentares na Indonésia é considerada muito importante, pois a alimentação é o maior gasto doméstico. há 104.242 chefes de família que dependem do cultivo de arroz e da horticultura e 137.309 idosos de 18 a 60 anos que trabalham como agricultores registrados no distrito de Tulang Bawang. A estratégia de desenvolvimento do agronegócio da commodity arroz é elaborada com base em resultados externos e em uma matriz de avaliação interna. Esta pesquisa teve como objetivo determinar a estratégia apropriada para o desenvolvimento do agronegócio de commodities de arroz na regência de Tulang Bawang para aumentar a segurança alimentar após a pandemia de Covid-19. A metodologia usa o local da pesquisa realizada na regência de Tulang Bawang. O tipo de dados utilizados são dados primários e secundários. A metodologia é, utilizando as matrizes EFE (Avaliação de Fatores Externos) e IFE (Avaliação de Fatores Internos). Em seguida, foi realizada uma análise SWOT (Força Fraqueza Oportunidades Ameaças) QSPM (Matriz Quantitativa de Planejamento Estratégico). Alternativa à estratégia de penetração e desenvolvimento de mercado empreendida é a intensificação do cultivo de arroz; sinergia entre agricultores, empresários e governo; fortalecimento de políticas alimentares regionais pró-agricultores; revitalização de instalações e infra-estruturas agrícolas.
Palavras-chave: Arroz commodity; Estratégia de desenvolvimento do agronegócio; Melhoria da segurança alimentar; Política alimentar regional; Governo.

Resumen

La atención a los problemas alimentarios en Indonesia se considera muy importante, porque la comida es el mayor gasto en el hogar. hay 104 242 cabezas de familia que dependen del cultivo de arroz y la horticultura, y 137 309 personas mayores de entre 18 y 60 años que trabajan como agricultores registrados en el distrito de Tulang Bawang. La estrategia de desarrollo de agronegocios de productos básicos de arroz se prepara sobre la base de resultados externos y una matriz de evaluación interna. Esta investigación tuvo como objetivo determinar la estrategia adecuada para el desarrollo de la agroindustria de productos básicos de arroz en Tulang Bawang Regency para aumentar la seguridad alimentaria después de la pandemia de Covid-19. La metodología utiliza la ubicación de la investigación que se llevó a cabo en la Regencia de Tulang Bawang. El tipo de datos utilizados son datos primarios y secundarios. La metodología es, utilizando las matrices EFE (External Factor Evaluation) e IFE (Internal Factor Evaluation). Posteriormente se realizó un análisis FODA (Fortaleza Debilidad Oportunidades Amenazas) QSPM (Matriz Cuantitativa de Planificación Estratégica). La alternativa a la penetración del mercado y la estrategia de desarrollo emprendida es la intensificación del cultivo de arroz; sinergia entre agricultores, empresarios y gobierno; fortalecer las políticas alimentarias regionales favorables a los agricultores; revitalización de instalaciones e infraestructuras agrícolas.

Palabras clave: Producto básico de arroz; Estrategia de desarrollo de agronegocios; Mejora de la seguridad alimentaria; Política alimentaria regional; Gobierno.

1. Introduction

Prior to the 1960s, development economic theories in various literatures generally looked at the inferior role of the agricultural sector. An inferior view of the agricultural sector keeps the sector from developing as it should, and such a situation results in a shortage of domestic food production, which is followed by a balance of payments crisis and political instability in many developing countries. However, since the early 1960s, the views of development economists on the role of the agricultural sector have changed significantly. Johnston and Mellor in Todaro and Smith (2003) identified five contributions from the agricultural sector to economic development, including the agricultural sector which produces food and raw materials for the industrial and service sectors. If the increase in food can be fulfilled domestically, this increase in food supply can drive down the inflation rate and the level of labor wages, which in turn is believed to be able to further spur economic growth (Basorun & Fasakin, 2012; Ekpe & Alimba, 2013).

In addition to the above, food is the most basic need for humans. Food security is very closely related to social security, political stability and security or national security (Suryana in Purwantini et al., 2012). For the Indonesian nation, attention to food issues is considered very strategic, partly because food ranks as the largest in household expenditure. Data from the Central Statistics Agency (2014) states that spending on food reaches 58.81% of total household expenditure. For this reason, increasing food security and developing agribusiness should be the main program in agricultural and regional development.

One of the efforts that can be made to increase regional food security and simultaneously develop agribusiness is by developing regional superior food commodities. This is in line with Murthy (2004), which states that the resilience of the agricultural sector is directed at agricultural businesses based on domestic resources (regional superior) whose product demand is not elastic to income or prices, so that it is resilient in facing economic shocks. In addition, relatively stable agricultural production has broad sectoral linkages and is very important for strengthening food security.

The rice commodity has long been an indicator of the Indonesian economy (Sugarda et al., 2008). This means that the price of rice is a reflection of a country's ability to manage its economy. Paddy production management has an influence on consumption management and has an impact on other sectors. The position of Tulang Bawang as a rice barn in Lampung plays a role in controlling through the resilience of rice stocks. In the Table 1 below you can see the development of rice production in the last 3 years in Tulang Bawang Regency.

Table 1 - Rice Production in Tulang Bawang Regency in 2018-2020.

Year	harvest area (Hectare)	Production in GKG (ton)	Productivity (ku/ha)
2018	43.681,36	194.593,04	44,55
2019	51.559,24	217.894,34	42,26
2020	55.881,56	215.987,34	38,65

Source: BPS Tulang Bawang.

In the Table 1, it explained that the total rice production (GKG) in Tulang Bawang Regency in 2019 was 217,894.34 tons, the productivity of rice fields reached 42.26 ku/ha. The decline in production occurred in 2020 and was followed by a decrease in land productivity. This is not in line with the increasing population growth. The population of Tulang Bawang Regency reaches 430,630 people. The current consumption of rice is 113.48 kg/capita/year, the figure of 113.48 kg/capita/year is the standard value of rice consumption needs per year. capita determined by BPS. This figure means that each resident needs 113.48 kg of rice per year. Thus the need for rice in Tulang Bawang Regency reached 48,867.8 tons. Tulang Bawang Regency was able to produce 232,508.32 tons so that a surplus of 183,640.52 tons.

The Tulang Bawang Regency Government noted that there were 104,242 families who depended on rice farming and horticulture, and 137,309 residents aged 18–60 years who worked as farmers for these commodities. The number is quite large when compared to the people of Tulang Bawang who pursue other professions, both in trade, services and animal husbandry. Farmers are not always producers, often farmers are also consumers of rice. During the main harvest, the farmers sell all grain production to the market, and do not store it for personal needs. Usually the market price is profitable than the government purchase price, the grain will be sold to traders and not to Bulog, which has an interest in procuring stock. During the famine season, farmers are like other residents in Tulang Bawang, buying rice which is sold at the market, of course at a higher price than the price during the harvest season. Lumbungisasi efforts are also considered not effective enough as long as farmers are still experiencing economic difficulties, causing farmers to take stock to sell to meet their daily needs.

The problem becomes even more complex when farmer institutions are not yet strong, especially in terms of management, financial management and market access. There is a discourse that the Tulang Bawang Regency Government will carry out regional industrialization, increasingly threatening regional food security. This of course will lead to an increase in the conversion of agricultural land into industrial land. Eventhough, industrialization is impossible to succeed if it is not supported by the ability to manage strong upstream agribusiness. In accordance with these problems, researchers are interested in conducting research with the title "Rice Commodity Agribusiness Development Strategy in Improving Food Security after the COVID-19 Pandemic in Tulang Bawang Regency".

The scope of the research includes rice commodity development strategies in increasing food security in Tulang Bawang Regency. This research is only limited to determining the appropriate strategy for the development of rice commodity agribusiness in Tulang Bawang Regency in increasing food security after the Covid-19 pandemic.

2. Methodology

The location of the research was carried out in the Tulang Bawang Regency. The type of data used is primary and secondary data. Primary data obtained from the results of interviews with experts. The sampling technique used purposive sampling based on the consideration of the respondent's expertise. This technique is called Judgmental Sampling (Sekaran & Bougie, 2017). There were 30 research respondents consisting of: 1) Agricultural Extension Coordinator in Tulang Bawang Regency; 2) Head of the Agriculture Service Office of Tulang Bawang Regency; 3) Heads of GAPOKTAN in Tulang Bawang

Regency, totaling 31 people. Secondary data was obtained from the archives of the Tulang Bawang Regency Agriculture Service, literature books, and information searches via the internet that can support research.

The next step is to determine the external and internal factors that influence strategy determination, using the EFE (External Factor Evaluation) and IFE (Internal Factor Evaluation) matrices. After that, a SWOT (Strength Weakness Opportunities Threats) analysis was carried out. In the SWOT analysis, alternative strategy formulas are carried out by conducting pairwise comparisons. Pairwise comparison is a technique of comparing a component with other components in the same category. The SWOT matrix helps in conducting pairwise comparisons, between strengths, opportunities, weaknesses and threats to then be compiled into alternative strategies in the development of superior food commodities in the form of ST (Strength-Threats) Strategy, SO (Strength-Opportunities) Strategy, WO (Weaknesses-Opportunities) Strategy), WT Strategy (Weaknesses-Threats).

After that, to objectively evaluate alternative strategies, QSPM (Quantitative Strategic Planning Matrix) analysis was carried out. The analysis was carried out in the following steps: (1) Include various alternative strategies, both external and internal factors, in the left column of the QSPM; (2) Provide a value or weight for each factor (identical to the value given in the IFE and EFE matrices); (3) Examine (matching) the matrix and identify alternative strategies that should be considered for establishment; (4) Determine the Attractive Score (AS), (5) Calculate the total attractiveness value which is the result of multiplying the weight by the attractiveness value in each row. The higher the total attractiveness value, the more attractive the strategy is (David, 2012).

2.1 Theoritical Review

According to Arifin (2011) the dimensions of food security are (a) availability: production, distribution of staple food and others, quality, safe, nutritious and balanced; (b) accessibility: access to food, especially the poor/marginalized: subsidies, disaster management, gender; (c) stability (price): between regions, between time periods, between actors, the concept of iron reserves, buffer reserves, (d) utilization: processing, safety, diet, hygiene, water sanitation, halal, wholeness, benefits etc.

According to Pangaribowo et al. (2013) in discussing indicators of food security, the research framework used is based on the framework developed by UNICEF and a simple economic model which is the starting point in deciding on the right indicator which has three levels of determinants of nutritional status, namely basic, underlying and immediate (direct). The immediate causes of nutritional status at the individual human level are dietary intake and health status. Two interrelated factors are food intake must meet certain thresholds in terms of quantity and quality, nutritional intake must be balanced in terms of carbohydrates, protein and fat (macronutrients) and vitamins and minerals (micronutrients) and can be absorbed by the human body.

Food security indicators must reflect a specific situation or reality that is difficult to measure directly and usually provide an order of magnitude on a certain scale. There is no best indicator, measure or analysis of indicators in the general sense, the more complex the phenomenon to be reflected, the greater the need for multiple indicators such as the health status of a group cannot be assessed by a single indicator. Indicators should be selected in such a way that they satisfy the desired range of properties. Some traits are based on the policy relevance of indicators (indicators must be credible i.e. rooted in a solid conceptual and theoretical framework, readily available, and consistent) and based on scientific criteria (Pangaribowo et al., 2013).

The selection of food security indicators depends on the definition of food security itself (BPS, 2012). To support policy goals and collect indicators, it is not enough just to facilitate action, but must be combined with a typology of countries (or entities of a smaller geographical scale, depending on the nature of the problem and action), as well as the formulation of several dimensions of food security.

Policies related to the development of food security are needed as a foundation or pre-condition for the government to be able to provide sufficient, quality and safe food, especially from domestic production and distribute it evenly to various regions of Indonesia from time to time at affordable prices in a sustainable manner.

In the era of the Covid-19 pandemic, several studies were carried out by researchers to provide policy recommendations that needed to be carried out by the government. Hirawan and Verselita (2020) states that the government must ensure that facilities and assistance in all lines of food, from production to consumption, run as they should as a measure to anticipate the impact of Covid-19 on the availability and stability of food prices in Indonesia. The government also needs to improve the optimization of domestic food production potential and improve the national food logistics system.

2.2 Data Analysis

The research approach was carried out descriptively through case studies in Tulang Bawang Regency. Data and information collection techniques were carried out by means of observation, interviews, and filling out questionnaires. Data analysis methods used include Internal Factor Evaluation (IFE) analysis, External Factor Evaluation (EFE) analysis, Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis, and strategy selection using Quantitative Strategic Planning Matrix (QSPM) analysis (David, 2012).

Descriptive analysis is used to explain the vision and mission of rice agribusiness development in Tulang Bawang Regency. IFE and EFE are used to analyze internal and external factors that influence rice agribusiness development strategies. SWOT analysis to formulate strategic alternatives and QSPM to get strategic priorities. Tulang Bawang Regency is one of the rice agribusiness centers in Lampung. The strategic location of Tulang Bawang Regency has good potential for the development of the rice commodity agribusiness sector. A strategy for the development of the rice commodity agribusiness sector is needed to ensure sustainable food supply and development. The complete research framework is in Figure 1.

Data analysis used to determine the goals to be achieved are:

1. *Matriks Internal Factor Evaluation* (IFE)

is a strategy formulation tool used to summarize and evaluate the main strengths and weaknesses in a business functional area, and also provides a basis for identifying and evaluating the relationships between these areas (David, 2002).

2. *Matriks Eksternal Factor Evaluation* (EVE)

used to determine the company's external factors related to opportunities and threats that are considered important. External data is collected to analyze matters relating to economic, social, cultural, demographic, environmental, political, governmental, legal, technological, and competition issues (David, 2002).

The stages in identifying external environmental factors in the IFE matrix are as follows:

a) Write down the key internal factors as identified in the internal audit process;
b) Assign a weight ranging from 0.0 (not important) to 1.0 (very important) to each factor. The weight given to each factor indicates the relative importance of the factor to the company's success in the industry. The sum of all weights must be 1.0;
c) Assign a rating of 1 to 4 to each factor to indicate whether that factor exhibits major weakness (rating = 1), or minor weakness (rating = 2), minor strength (rating = 3), or major strength (rating = 4). Note that strengths should get a

rating of 3 or 4, and weaknesses should get a rating of 1 or 2. So, the ratings are by company, while the weights are by industry;

d) Multiply each factor's weight by its rating to determine the weighted average for each variable;
e) Add up the weighted averages for each variable to determine the total weighted average for the organization. The average value is 2.5. A total weighted average below 2.5 indicates a weak organization internally, while a total score above 2.5 indicates a strong internal position.

The stages in identifying external environmental factors in the EFE matrix are as follows:

a) Make a list of external factors identified in the external audit process;
b) Assign a weight ranging from 0.0 (not important) to 1.0 (very important) to each factor. The weight indicates the relative importance of the factor to the success of the company in the industry. The sum of all weights must be 1.0;
c) Give each key external factor a rating of 1 to 4 about how effective the company's current strategy is in responding to that factor, where 4 = superior company response, 3 = above average company response, 2 = average company response, 1 = poor company response. The rating is based on the effectiveness of the company's strategy, while the weight is based on the industry;
d) Multiply each factor's weight by its rating to determine the weighted value;
e) Multiply each factor's weight by its rating to determine the weighted score of responding best to the opportunities and threats that exist in the industry. In other words, the company's strategy effectively takes advantage of the opportunities that exist today and minimizes the effects that may arise from external threats. The total value of 1.0 indicates that the company's strategy does not take advantage of opportunities or does not avoid external threats.

3. Results and Discussion

The Food and Agriculture Organization (2020) defines food security as a condition when all people at all times have physical, social and economic access to safe and nutritious food to meet the needs of the body, according to their choices so that they can live actively. and healthy. Meanwhile, in Law no. 18 of 2012, food security is a condition of fulfilling food for the state down to individuals, which is reflected in the availability of sufficient food, both in quantity and quality, safe, diverse, nutritious, equitable and affordable, and does not conflict with religion, belief and culture community, to be able to live a healthy, active and productive life in a sustainable manner.

The definition from FAO is widely accepted and refers to several important pillars of food security, namely food availability, food access and food utilization. The first pillar, food availability or food availability, is adequate food availability in terms of quantity and quality, covered by both domestic production and imports (including food aid). The second pillar is food access or access to food, namely the accessibility of individuals to obtain the right to proper food. These are defined as commodities that a person can own or manage according to the legal, political, economic and social rules of the society in which they live (including traditional rights such as access to common resources). The third pillar is food utilization, in which subjects can consume food through proper diet, clean water, sanitation and health to achieve a state of nutritional well-being where all physiological needs are met (FAO, 1996).

The impact of Covid-19 on the fields of agriculture and food supply differs between developed and developing countries. Agricultural production in developed countries was not greatly affected during a pandemic because the agricultural system is mostly supported by technology (agricultural machinery) and is not too dependent on humans. However, agricultural production in developing countries has been badly affected by the pandemic because agricultural systems still use a lot of human labor (Kamal, 2020).

The level of public consumption (household consumption) has also decreased. The impact of social restrictions (social distancing) to stop the spread of the Covid-19 outbreak has caused a decrease in the level of public demand, especially from the tourism and entertainment sector. In addition, people's purchasing power has also decreased due to the loss of income for some people due to job loss and the potential for price increases to disrupt supply (Agustiyanti, 2020). The reduced income of the community or consumers during the pandemic reduced their ability to buy food and negatively compensated farmers for their crop production. Food producers also face huge losses, especially in perishable food types and limited contact between traders and farmers (Kamal, 2020).

The number of seasonal agricultural crops has also been negatively affected by the quarantine measures. Some farmers have been forced to leave their jobs or working hours have decreased due to shifts. In addition, some farmers also lack the necessary seeds and fertilizers due to their scarcity in the market, which in turn has a big impact on the yields. The pandemic has also affected the food supply chain where grocery stores are experiencing shortages of some staples and fresh commodities. The pandemic has changed small and large scale agriculture, and has also caused farmers and consumers to change their behavior (Schmidt et al., 2021). It will explained in the Table 2 below:

Table 2 - Production.

Plant Type	**Production (Ton)**				
	2017	**2018**	**2019**	**2020**	**2021**
Crops					
Paddy	404.277,40	451.353,74	413.717,13	466.501,55	459.307,14
Jcorn	40.037,90	44.472,00	30.264,00	35.952,00	28.388,00
cassava	542.390,40	593.006,40	651.200,00	819.298,00	814.858,40
Plantation Crop					
Palm oil	50.236,60	44.332,00	46.432,00	46.807,70	46.808,00
coconut	623,00	663,60	640,00	620,80	640,00
rubber	28.769,00	28.920,00	30.356,00	30.976,25	26.534,00
cocoa	122,00	122,00	125,00	133,00	105,00
tobacco	11,99	11,99	0,20	2,40	0,20
coffee	52,00	42,90	46,90	41,00	42,00

Source : Tulang Bawang in figures 2018, 2019, 2020, 2021 dan 2022.

cattle	**Population (ekor)**				
	2017	**2018**	**2019**	**2020**	**2021**
Cow	18.580	21.153	21.465	22.638	27.219
buffalo	4.248	4.576	4.380	3.903	4.684
Goat	37.441	87.983	92.382	96.281	115.537
Pig	683	5.604	3.923	2.472	2.843
Free-range Chicken	411.557	381.831	400.923	395.583	435.141
Laying hens	42.341	57.683	60.567	21.800	35.100
Broiler	1.457.641	216.674	218.841	208.542	218.969
Duck	48.351	39.585	23.751	21.264	22.908

Source : Tulang Bawang in figures 2018, 2019, 2020, 2021 dan 2022

It can be seen that the Table 2 the production and population farmer in Indonesia shows numerous result in each year. Government policy (Ministry of Agriculture of the Republic of Indonesia) pays attention to farmer actors in developing

capabilities or providing guidance and facilitating farming activities as an effort to increase productivity and efforts to increase community welfare in an institution (GAPOKTAN) by uniting farmer groups in an organization. The table 3 showing about farmer groups in Tulang Bawang:

Table 3 - Number of Gapoktan and Farmer Groups per District in Tulang Bawang.

No	subdistrict	**the number of gapoktan**	**farmers**
1.	Menggala	8	80
2.	Gedung Aji	8	93
3.	Banjar Agung	11	141
4.	Gedung Meneng	9	176
5.	Rawajitu Selatan	9	155
6.	Penawartama	13	157
7.	Banjar Margo	10	99
8.	Rawa Pitu	9	178
9.	Penawar Aji	9	79
10.	Dente Teladas	10	241
11.	Meraksa Aji	8	71
12.	Gedung Aji Baru	9	94
13.	Banjar Baru	10	119
14.	Menggala Timur	9	123
TOTAL		132	1.806

Source: Dinas Pertanian Kab. Tulang Bawang.

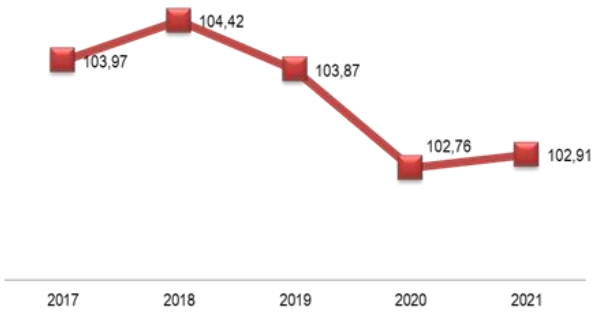
In the Table 3 each district has different result, thus the Human Resources have a very important role in building agriculture for the groups in Tulang Bawang Regency. With superior and competitive human resources will be able to increase agricultural productivity and be able to manage the market through the supply of quality agricultural products. In relation to these human resources, the organization must create various organizational mechanisms or environments that allow each individual in the organization to learn so that changes in behavior are formed as desired by the organization. Improving food security, economic competitiveness and welfare of farming communities. To realize these expectations, a strategy is needed that is supported by integrated policies and synergies between related development sectors, especially in optimizing agricultural resources and productivity.

The Farmer Terms of Trade Index (NTP) is a comparison between the price index received by farmers (It) and the price index paid by farmers (Ib), where lt shows fluctuations in the goods consumed by farmers including the goods needed to produce agricultural products. The agricultural sector included in the preparation of the Farmer's Exchange Rate (NTP) includes five sub-sectors, namely the food crops sub-sector, the horticultural crops sub-sector, the smallholder plantation crops (TPR) sub-sector, the livestock sub-sector, and the fisheries sub-sector. NTP is used to measure the exchange power of products sold by farmers with products needed by farmers in household production and consumption.

NTP is irrelevant as a measure of farmer welfare, because NTP assumes a fixed level of production and does not accommodate progress in agricultural productivity, technological progress and development. Therefore, FTT is sufficiently positioned as a measuring tool to calculate the purchasing power of farmer receipts against farmer expenditure. NTP is not absolute for the welfare of farmers because even though the price index received increases with various price protection

policies, it is not certain that the NTP increases because it still depends on the price index paid by farmers. The figure 1 below explained about NTP:

Figure 1 - Development of NTP.



Source: Badan Pusat Statistik Kab. Tulang Bawang (2022).

The Figure 1 above shows the development of farmer exchange rates from 2017-2021 depicting a fluctuating trend. The NTP of Tulang Bawang Regency in 2020 has an index of 102.76, lower than 2021, which is 102.91. NTP > 100, means that farmers experience a surplus. The price of production has increased more than the increase in the price of consumer goods and production costs, farmers still get a surplus from the production process compared to the consumption spent. To increase the NTP rate, programs are continuously being prepared so that it can reduce the cost of agricultural production. Controlling market prices through a series of policies in agriculture is also necessary to boost agricultural productivity. Until now, the Tulang Bawang Regency continues to strive to improve the welfare of farmers through the development of potential commodities such as Tulang Bawang rice, increasing the quality and quantity of beef cattle and developing mina padi. It is hoped that these programs will have implications for increasing NTP.

The results of interviews and filling out questionnaires to respondents obtained several factors from the IFE and EFE analysis results (strengths, weaknesses, opportunities, and threats):

Strength

The results of processing the data obtained from the results of filling out the questionnaire, the strength of rice commodity agribusiness in Tulang Bawang Regency is the application of agricultural machinery technology, competent human resources, Tulang Bawang Regency Government policies, program planning to increase rice production, solidity of agricultural apparatus and related agencies and farmer motivation.

Weakness

Internal factors which are weaknesses for the development of rice commodity agribusiness in Tulang Bawang Regency include declining land productivity, weak financial capabilities, conversion of paddy fields, institutional management of farmers and facilities and infrastructure.

Opportunity

Factors that can be used as strategic factors as opportunities in the development of rice commodity agribusiness in Tulang Bawang Regency are the increasing demand for rice, central government policy support, the existence of financial

institution services, geographical location suitability, the existence of superior seed varieties.

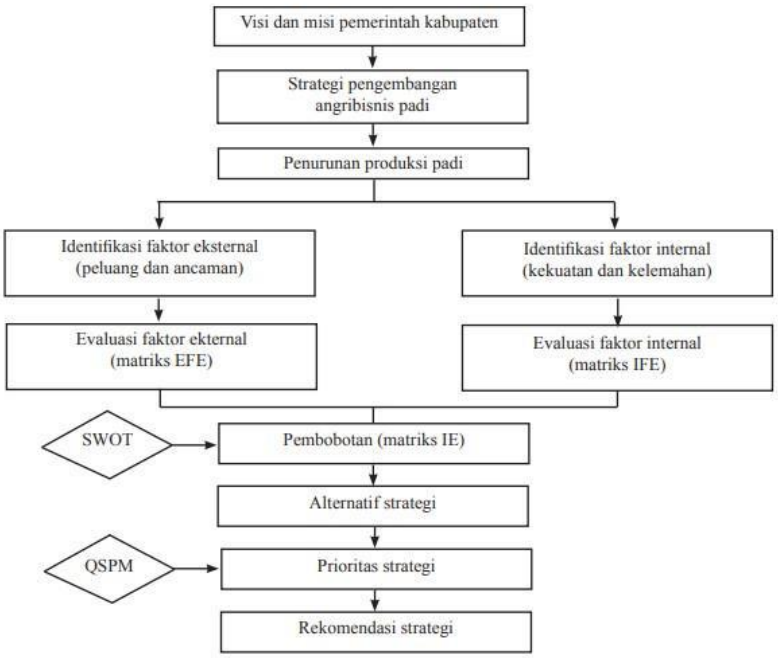
Threat

Factors that can be used as strategic factors as threats in the development of rice commodity agribusiness in Tulang Bawang Regency are fluctuations in production input and output prices, decreased interest of the younger generation in agriculture, the presence of substitute products, attacks by plant-disturbing organisms and climate change. The results of the IFE and EFE evaluations are presented in Table 4 and Table 5.

The results of the evaluation of internal and external factors in the development of rice commodity agribusiness are currently in quadrant V. This score is indicated by the IE matrix (2.49; 2.98) positioning rice commodity agribusiness in Tulang Bawang Regency to be in a maintain and maintain position. In this position, Tulang Bawang Regency is in a condition that shows a moderate internal and external position so that Tulang Bawang Regency really needs serious efforts to increase rice production as a whole so that regional food security can be fulfilled. The position of the IE matrix is shown in Figure 2.

This means that the description of the strategy that can be developed by the Tulang Bawang district by carrying out an intensive strategy in the form of a strategy of market penetration, market development and product development. The results of the SWOT matrix analysis are in Table 6 in the next. The results of the 14 strategies obtained from the SWOT matrix analysis, then formulated five alternative strategies that are most appropriate in the effort to develop rice commodity agribusiness in Tulang Bawang Regency. Consideration of the following five strategies based on discussions and interviews with expert respondents related to the research objectives. The reasons for selecting the five strategic options were also strengthened based on considerations of product diversification, market and product penetration and development. The five selected strategies are then analyzed by the QSPM matrix and the results are as follows:

Figure 2 - Research Thinking Framework.



Source: Authors.

Table 4 - Internal Factor Evaluation Results (IFE).

strength	weight	Score	Weighted Score
Application of agricultural machinery technology	0,06	3	0,18
Competent human resources	0,12	3	0,36
The government policy of Tulang Bawang Regency	0,06	4	0,24
Planning a program to increase rice production	0,07	3	0,21
The solidity of the agricultural apparatus and related agencies	0,08	3	0,24
Farmer motivation	0,11	4	0,44
Total	0,50		1,67

Weakness	weight	Score	Weighted Score
Land productivity is decreasing	0,09	1	0,09
Weak financial capabilities	0,12	2	0,24
The conversion of paddy fields	0,09	1	0,09
Farmer institutional management	0,10	2	0,20
Facilities and infrastructure	0,10	2	0,20
Total	0,50		0,82
Weighted Total Score	1,00		2,49

Source: Authors.

Table 5 - Results of Evaluation of External Factors (EFE).

opportunity	weight	Score	Weighted Score
Increasing demand for rice	0,11	4	0,44
Central government policy support	0,10	4	0,40
The existence of financial institution services	0,10	2	0,20
Geographical suitability	0,09	3	0,27
Paddy field development potential	0,08	3	0,24
There are superior seed varieties	0,07	2	0,14
Total	0,54		1,69

Threat	weight	Score	Weighted Score
Fluctuations in the prices of inputs and production output	0,06	1	0,06
Declining interest of the younger generation in agriculture	0,09	2	0,18
There are subsidized products	0,09	3	0,27
Attack of plant pests	0,12	4	0,48
Climate change	0,10	3	0,30
Total	0,46		1,29
Weighted Total Score	1,00		2,98

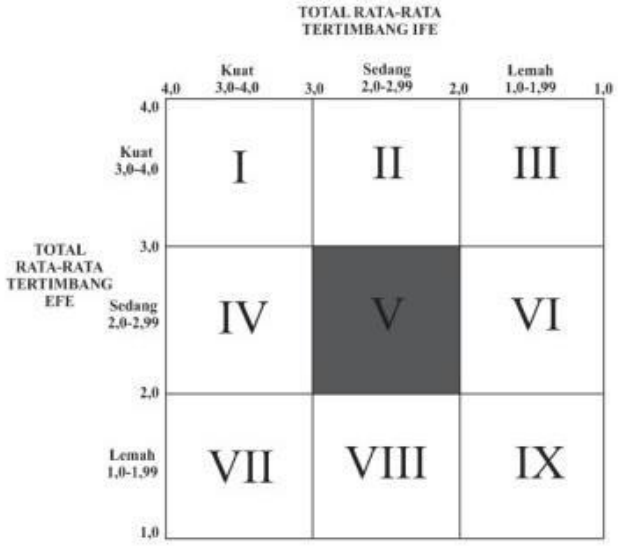
Source: Authors.

This explained that in the table 4 and 5, the results of the QSPM analysis show that the priority choice of the first strategy that must be carried out by the Tulang Bawang Regency Government is to implement a rice farming intensification strategy. The second priority is the revitalization of agricultural facilities and infrastructure. The third priority is strengthening regional food policies in favor of farmers. The fourth priority is product differentiation. The fifth priority is synergy between farmers, entrepreneurs and the government.

Managerial and Policy Implementation

Agricultural intensification strategy must include seven farming businesses. The Sapta farming includes good soil management, regular irrigation, selection of superior seeds, proper fertilization, integrated pest and disease control, efficient post-harvest handling and marketing. Construction of dams, dams, irrigation networks, and reservoirs (Hyuha et al., 2007; Saputra et al., 2009). Assistance with the addition of power threshers and tractors. Application of protection and empowerment of farmers through business certainty; stability of grain and rice commodity prices; eliminating high-cost economic practices; compensation for crop failure/ puso due to extraordinary events; early warning system and response to climate change impacts; agricultural insurance; education and training; counseling and assistance; development of systems and facilities for marketing agricultural products; consolidation and guarantee of agricultural land area; provision of financing and capital facilities; ease of access to science, technology and information; and institutional strengthening of farmers (Sisfahyuni, 2008). It is shows in the Figure 3 below:

Figure 3 - Internal and External (IE) matrix of agricultural agribusiness in Tulang Bawang Regency.



Source: Authors.

Table 6 - SWOT Matrix Analysis Results.

	***STRENGHTS*-S**	**WEAKNESSESS-W**
	1. Supportive geographic and ecological location	1. The average farmer's education is low
	2. Government policy support	2. Capital limitations
	3. Availability of adequate land	3. Limited mastery of technology and information
	4. Application of agricultural machinery technology	4. Land productivity is decreasing
	5. Competent human resources	5. Weak financially
	6. Tulang Bawang district government policy	6. The conversion of paddy fields
	7. Planning a program to increase rice production	7. Farmer institutional management
	8. The solidity of the agricultural apparatus and related agencies	8. Facilities and infrastructure
	9. Farmer motivation	
OPPORTUNITIES-O	**STRATEGY SO**	**STRATEGY WO**
1. Increasing demand for rice	1. Synergy between farmers, entrepreneurs, and the government	1. Intensification of rice farming
2. Central government policy support	2. Application of agricultural machinery technology and planting superior seeds	2. Revitalization of agricultural facilities and infrastructure
3. The existence of financial institution services	3. Maximum utilization of rice farming land	3. Increasing financial access to financial institutions
4. Geographical suitability		4. Management capability improvement program and mastery of technology for farmers
5. Paddy field development potential		
6. There are superior seed varieties		
THREATS-T	STRATEGY ST	STRATEGY WT
1. Fluctuations in the prices of inputs and production output	1. Strengthening local food policies in favor of farmers	1. Product differentiation
2. Declining interest of the younger generation in agriculture	2. Development of secondary level vocational schools for agriculture	2. Improve coordination with all related agencies
3. There are substitute products	3. Improving the quality of extension human resources and farmers	3. Making appropriate financial policies and regulations for rice agribusiness development activities
4. Attack of plant pests		

Source: Authors.

Regional policies must include: creating a modern, resilient rice agribusiness area, and providing better welfare guarantees for farmers; increasing the efficiency and competitiveness of rice commodity farming; optimal, efficient, productive and sustainable management and utilization of natural resources that can support economic resilience and environmental preservation; empowerment of farmers and rural communities; development of institutions and partnerships that are modern, tough, efficient, and productive (Sugarda et al., 2008).

The rice commodity agribusiness development strategy in increasing food security in Tulang Bawang Regency was prepared based on the results of external and internal evaluation matrices. The choice of strategy was based on consideration of the scores obtained on each factor and the explanations from the respondents at the time of the interview. The preparation of the SWOT strategy is divided into four matrices, including the S-O (Strengths-Opportunities) Strategy which is prepared based on the consideration of strength factors and opportunity factors. The second strategy is the W-O (Weakness-Opportunities) strategy which is prepared based on the consideration of weaknesses and opportunities. The third strategy is the S-T Strategy (Strengths-Threats) which is structured based on strengths and threats. The fourth strategy is the W-T Strategy (Weaknesses-Threats) which is prepared based on weaknesses and threats. The overall strategy can be seen in table 6.

In realizing the strategy, it is necessary to prepare a list of priorities based on the conditions in the Tulang Bawang Regency. The list of priorities referred to is compiled based on the Quantitative Strategic Planning Matrix (QSPM) analysis. The results of the QSPM analysis can be seen in Table 7 below:

Table 7 - QSPM matrix analysis results.

priority	Alternative Strategy	TAS value
1	Rice farming intensification strategy	6,69
2	Revitalization of agricultural facilities and infrastructure	6,59
3	Revitalization of agricultural facilities and infrastructure	6,50
4	Product differentiation	6,41
5	Synergy between farmers, entrepreneurs and the government	6,21

Source: Own Study.

Development of quality rice, organic rice and brown rice. The development of quality rice, organic rice and brown rice must be continuously improved in order to increase food diversity in Tulang Bawang Regency. Development of agro-tourism facilities based on rice farming so as to produce recreational facilities for the community. Cooperation between agribusiness subsystems is needed so that production, distribution, product processing, marketing processes can run effectively and efficiently. Rice-livestock crop synergy can also be developed. Another important thing is that it is necessary to understand the concept of crop-livestock synergy because this is expected to stop and reverse the downward spiral as a result of agricultural practices that destroy land resources and reduce agricultural productivity. Farmers living in marginal areas are expected to slowly get out of the poverty trap through a reversal process (rice-livestock synergy). The rice-livestock plant synergy that can be developed and has potential in Tulang Bawang Regency is the development of rice farming and beef cattle farming. Agricultural land utilizes organic fertilizer from cow dung and cattle can develop by utilizing feed derived from straw.

4. Conclusion

A. Conclusion

The conclusion from the research results is that the Tulang Bawang Regency Government needs to utilize strategic factors as its main strength and its relatively high importance. The main strength factor is the farmer's motivation. The main weakness of the strategic factor and having a relatively high importance is weak financial capability. Opportunities that have a relatively high importance is the increasing demand for rice. A strategic threat factor that has a relatively high importance is the attack of plant-disturbing organisms. The position of rice agribusiness development in Tulang Bawang district is currently at moderate internal and external, so that the description of the strategy that can be carried out is an intensive strategy in the form of market penetration, market development and product development. Alternative strategies for market penetration and development that can be carried out are intensification of rice farming; synergy between farmers, entrepreneurs and the government; strengthening regional food policies in favor of farmers; revitalization of agricultural facilities and infrastructure. Alternative product development strategy can be done through product differentiation strategy. The priority strategy that must be carried out is the rice farming intensification strategy.

Policy recommendations that must be carried out by the central/regional government to improve food security include: 1) Intensification of rice farming, 2) Synergy between farmers, entrepreneurs and the government, 3) Strengthening regional food policies that are pro-farmers, 4) Revitalization of facilities and infrastructure, 5) Product differentiation. The strategy that is the main priority in this research is the rice farming intensification strategy

B. Suggestion

The government of Tulang Bawang Regency needs to carry out a strategy based on the priorities obtained from the results of this study, so as to achieve self-sufficiency in rice and ultimately increase regional food security. Besides that, the Tulang Bawang Regency Government also needs to improve the factors that are the main weaknesses and increase the factors that are the main strengths that have the highest relative importance. Then the Tulang Bawang Regency Government needs to take advantage of opportunities and pay attention to threats that have the highest level of relative importance which are currently being responded to on an average basis. Furthermore, the government of Tulang Bawang Regency needs to make and strengthen regional food autonomy policies to facilitate the management of rice commodity agribusiness. This is important to optimize the effective and efficient use of agricultural resources. Empowering communities and farmers, agricultural intensification programs, strengthening agricultural institutions, and revitalizing agricultural infrastructure require special regulations so that they can run properly and correctly. Further research can be carried out through more in-depth research on how to improve farmer performance, especially in terms of increasing the ability to produce rice on an ongoing basis, as well as in the development of rice products, it must be based on the dynamics of market demand and consumer preferences. Suggestion for the future researchers can be explore more and globally, it can be another scope, area, or comparing to the other country that can be correlate with the method and analysis.

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