www.bircu-journal.com/index.php/birci
Budapest International Research and Critics Institute-Journal (BIRCI-Journal)
Humanities and Social Sciences
ISSN 2615-3076 Online)
ISSN 2615-1715 (Print)
Budapest Institute

Rice Food Security Strategy in of Covid 19 Era East Oku Regency, Indonesia

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Abstract

The rice food security strategy for COVID-19 era in OKU Timur Regency. The purpose of research to analyze problems in COVID-19 era pandemic fast and accurate. So set a strategy to overcome the risk of food insecurity in OKU Timur Regency. The research method used historical research method and used time series data from 2010 to 2020. Using a SWOT questionnaire, a list of questions had been compiled to be distributed to 50 respondents. The results of the study found that the rice food security strategy in the COVID-19 era in OKU Timur Regency could be carried out by an IFAS strategy of 3.08 and an EFAS of 3.01 with a grand strategy in quadrant I, namely a concentration strategy through vertical integration. SWOT matrix was generated by SO strategy: construction of food barns, food diversification, and role of BULOG. WO: training of the young generations on modern farming, subsidy for production inputs, and utilization of human resources to process natural resources. ST: government policy to sets the price of rice and production input prices. WT: managing rice supplies, using organic production inputs, socializing entrepreneurship in rice.

Keywords
BULOG, EFAS, IFAS, rice food

I. Introduction

The COVID-19 pandemic is endemic throughout the world, ravaging the defense base of country's economy, food security, and nutritional security (Ceesay and Ben Omar Ndiaye 2022; Kim, Kim, and Park 2020; Mandal et al. 2021; Rahman et al. 2022; Ramadhan et al. 2021; Rasul 2021; Zurayk 2020). Not only develop countries experience faled the economic system. But olso modern countries such as the United States and China also faced economic setbacks during the COVID-19 era. The basis of food security, is starting to be worried, to especially rice stocks, a strong economy is needed to ensure people's welfare (Lal 2020; Mishra et al. 2021; Sereenonchai and Arunrat 2021; Wardah and Niswah 2021; Yao et al. 2020) For developing countries such as Bangladesh where the conditions are worse. Changes that have occurred in food security in Bangladesh during COVID-19 are that the income of certain groups has decreased. Covid 19 has an impact on agro-food mechanisms, supply chain distribution, as well as market isolation activities and restrictions on social movements (Rahman et al. 2022; Rifkisyahputra, M. Ratna, N.J, Purwandari 2018) (Durand-Morat, Nalley, and Thoma 2018; Kehinde et al. 2021; Yuan 2015) Unlike in India, the impact of the COVID-19 isolation is the decreased ability of farmers to sell crop production and livestock products, decreased daily minimum wages and the variety of food consumed (Ayinu et al. 2022; Balwinder-Singh et al. 2020; Hossain 2020; Jaacks et al. 2021) Then in Iran Covid 19 has an impact on the economy, agriculture, and food security. The variety of purchasing power has decreased compared to the year

DOI: *https://doi.org/10.33258/birci.v5i4.7170*

before covid 19. The environment has become constrained, budgetary and national programs have been increased to address ecological problems (Bonso, Motuma Jabessa, and Negeri 2022; Frimawaty et al. 2013; Jaacks et al. 2021; Rad et al. 2021) Indonesia had same problems, the disruption of the economic system and the distribution of food that is not good due to restrictions on social movements (Darma, Pusriadi, and Caisar Darma 2020). (Maharani 2022) stated that during the covid 19 period, the role of BULOG had not been able to stabilize the price of grain and rice in South Sumatra. Likewise with East OKU Regency which is one of the largest rice-producing areas in South Sumatra. East OKU Regency got deerease in term of income and public consumption as a effect of the call for social restrictions (Daperga 2022). Covid 19 is a world problem, various studies are carried out to reduce these problems that occur. The outbreak of this virus has an impact of a nation and Globally (Ningrum et al, 2020). The presence of Covid-19 as a pandemic certainly has an economic, social and psychological impact on society (Saleh and Mujahiddin, 2020). Covid 19 pandemic caused all efforts not to be as maximal as expected (Sihombing and Nasib, 2020).

Research (Ramadhan et al. 2021) stated that several strategies had been carried out to maintain rice food security during COVID-19 in Indonesia. This research resulted in a clustering strategy for the provincial level which was divided into 3 clusters, namely low, medium and high. (Rozaki 2020) stated that the long-term strategy in overcoming rice food security in Indonesia is the supply chain and food diversification. In the research (Nchanji and Lutomia 2021) strategy could be done by building a sustainable food system, creating private and public relations, government investing directly in food inputs and supply chains. (Pusvita, Sriati, and Adriani 2019) in his research stated that the strategies to improve rice food security in OKU Regency, South Sumatra, were the application of area extensification and intensification of farming, the implementation of a single policy on the basic price of grain, regional autonomy government policies in tightening regulations on the conversion of rice fields, partner farming, implementing diversification of food consumption by reducing the amount of rice consumption, always stabilizing food prices with available stocks, and strengthening food reserves in BULOG. (Warren et al. 2021) stated a strategy of involving multi-sectoral stakeholders. (Sihombing 2021) presented the results of the research in the form of technology bulletin and agricultural information where the result was to diversify local food and maximize to use of land potential.

From the various strategies that have been submitted in previous studies, to be applied to the East OKU Regency area is still not right. So the researchers formulated the SO strategy: Food estate development (food barns) during the covid 19 pandemic, food diversification (rice, corn, sweet potatoes and beans), BULOG's role in rice stock control. WO:Training for the younger generation on the modern farming mindset, Subsidy Policy for agricultural inputs from the Government, Local government policies on the use of human resources to process their own resources. ST : Government policy to set the price of rice, Government policy to set the price of production inputs. WT : Regulating the existing stock of rice, Using organic inputs such as organic fertilizers and organic pesticides, Disseminating the importance of entrepreneurship in the rice business, so that you don't always become a farmer. The research objective is to implement the SWOT strategy in East OKU Regency to improve rice food security.

II. Research Method

2.1 Place and Time of Research

The research was conducted in East OKU Regency to see the condition of food security in 20 sub-Regencys, namely Martapura, Bunga Mayang, Jaya Pura, Buay Pemuka Peliung, Buay Madang, Buay Madang Timur, Buay Pemuka Bangsa Raja, Madang Tribe I, Madang Tribe II, Madang Tribe III, Belitang Madang Raya, Belitang , Belitang Jaya, Belitang II, Belitang III, Belitang Mulya, Semendawai Tribe III, East Semendawai, West Semendawai, and Cempaka. The research location was chosen purposively because in East OKU Regency, although it was known as a rice-producing area, but there were still food insecure areas seen from access, transportation or areas that were still isolated due to poor roads and crop failure (puso). The research was conducted from June to July 2022.

2.2 Research methods

The research method used the historical research method from 2010 to 2020. (Lang and Lindgren 2022; Tambs 2022) stated that the historical method was a method of using a network by utilizing data from year to year.

2.3 Method of Collecting Data

Collecting data used a questionnaire directly or using a google form. (Parks et al. 2022) stated that data collection with questionnaires will get results in accordance with the problems raised. This questionnaire was addressed to related parties who experience it directly, namely public society and farmers, policies mater to implement policies such as the agriculture office, food security service, local government and the statistical center agency for East OKU Regency.

2.4 Data Analysis Method

To analysis the used SWOT analysis which processes strengths and obstacles into a solution formulation (Assessment 2022; Gepner et al. 2022; Idris, Musa, and Sumardi 2022; Jahan et al. 2022; SeçkİN and ÖzdİL 2022; Shaikh et al. 2022; Sukri and Harini 2022; Wijaya, Rusmiati, and Narwati 2022). The method used in this research is a literature search from various literacy from various research results, journals, bulletins obtained from Google Scholar. By analyzing the data using a SWOT strategy approach, mapping the strengths, weaknesses, opportunities and threats of East OKU Regency which is one of the sources of rice food-producing areas in South Sumatra Province while maintaining food security when COVID-19 era.

III. Result and Discussion

3.1 Rice Food Security Strategy in East OKU Regency in Covid 19 Era

Rice Food Security Strategy in East OKU Regency in Covid 19 era was carried out by analyzing strengths, weaknesses, opportunities, and treats (SWOT). (Priyadarshini and Abhilash 2021) stated that formulating a strong and effective strategy in tackling food security in the era of the covid 19 pandemic. SWOT analysis was the systematic identification of various factors to formulate a strategy. SWOT analysis served to maximize internal factors, namely strengths and weaknesses, and external factors, namely opportunities and threats. The SWOT matrix aims to determine a strategy from internal factors and external factors which by households for Rice Food Security in East OKU Regency in Covid 19 era.

Table 1. Internal Factors Affecting East OKU Regency for Rice Food Security in the Covid 19 Era.

Internal Strategic Factors	Weight	Rating	Score
Strength			
1. Have a large area	3,6	3,8	0,34
2. Have technical irrigation	3,3	3,8	0,31
3. The topography of the area is relatively flat	3,8	3,8	0,36
4. A lot of worker	3,8	3,8	0,36
5. The quality of rice in East OKU was categorized as good (viewed from the intact and white form)	3,6	3,8	0,34
6. There were various types of plants besides rice such as corn, sweet potatoes, beans.	3,4	3,6	0,31
			1,69
Weakness			
1. Rice marketing distribution was not smooth	3,5	3,6	0,32
2. Distribution of production inputs was not good	3,8	3,8	0,36
3. The income of agricultural workers was categorized as low	3,6	3,8	0,34
4. The young generations ware less interested to work in the agricultural sector	3,8	3,6	0,34
			1,39
			3,08

Internal factors influenced East OKU Regency for Rice Food Security in Covid 19 Era (Table 1). Based on these internal and external factors, these internal factors were the main problems in OKU Regency for rice food security in Covid 19 era.

Table 2. External Factors Affecting East OKU Regency for Rice Food Security in Covid 19 Era.

External Strategic Factors	Weight	Rating	Score
Opportunity			
1. Avoid food crisis	3,8	3,40	0,32
2. Did not depend on one type of food only	3,8	3,40	0,32
3. Changes in the mindset of the younger generation to work hard in the agricultural sector	3,6	3,60	0,32
4. Rice food needed were met and remain guaranteed	3,6	3,80	0,34
5. Subsidies for farmers who bought agricultural products that are not sold	3,6	3,80	0,34
6. Rice imports were minimized if it was not an emergency	3,4	3,60	0,31
			1,96
Threat			

1. The mafia played on rice price	3,8	3,80	0,36
2. Rice supply had stopped during the COVID-19 pandemic	3,8	3,60	0,34
3. Increase in input prices production during the COVID-19 pandemic	3,8	3,60	0,34
			1,05
			3,01

IFAS and EFAS Factors East OKU Regency Strategy for Rice Food Security in the Covid 19 Era. Next, the analysis used Grand Strategy matrix (Figure 1), which is to see the results of EFAS and IFAS analysis and determine the right strategy to be implemented.

3.2 Matrix of Grand Strategy Determination

Furthermore, after determining the internal and external factors, where internal factors (strengths-weaknesses) produced a score value (weight x rating) = while external factors (opportunities-threats) produced a total score (weight x rating) = Based on these values, the next step was doing approach by using following Grand Strategy Matrix:

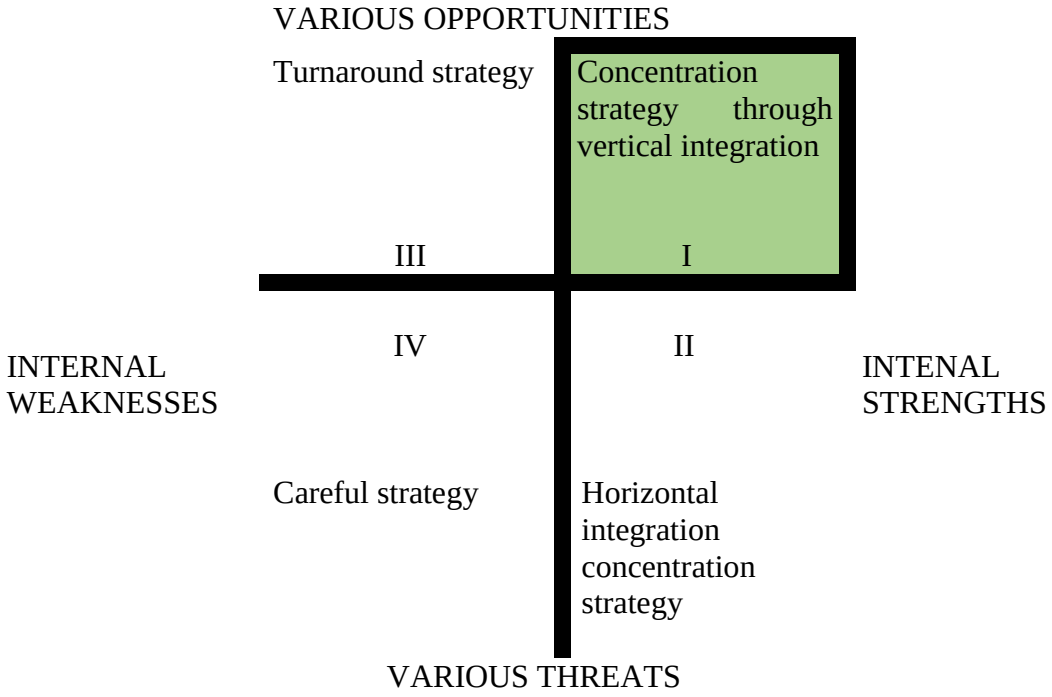

Figure 1. *Grand Strategy Matrix for East OKU Regency for Rice Food Security in Covid 19 Era.*

Based on the results of Figure 1, namely the identification of the scoring analysis of internal factors and external factors, it was known that East OKU Regency for Rice Food Security in the Covid 19 Era had a score of 3.08 internal factors and 3.01 external factors. Based scoring value, above if seen in the grand strategy matrix diagram, the position of East OKU Regency for Rice Food Security in the Covid 19 Era was in cell I which showed that the strategy had high growth with concentration through vertical integration.

The alternative strategy was formulated based on the matrix analysis model which was a combination of internal and external factor analysis. The formulation was in form of

a strategy of strengths and opportunities (SO), strengths and threats (ST), weaknesses and opportunities (WO), and weaknesses and threats (WT).

Table 3 showed the analysis of determining alternative strategies to be carried out (SO, WO, ST and WT) by making a SWOT matrix based on the results of the analysis of internal and external factors.

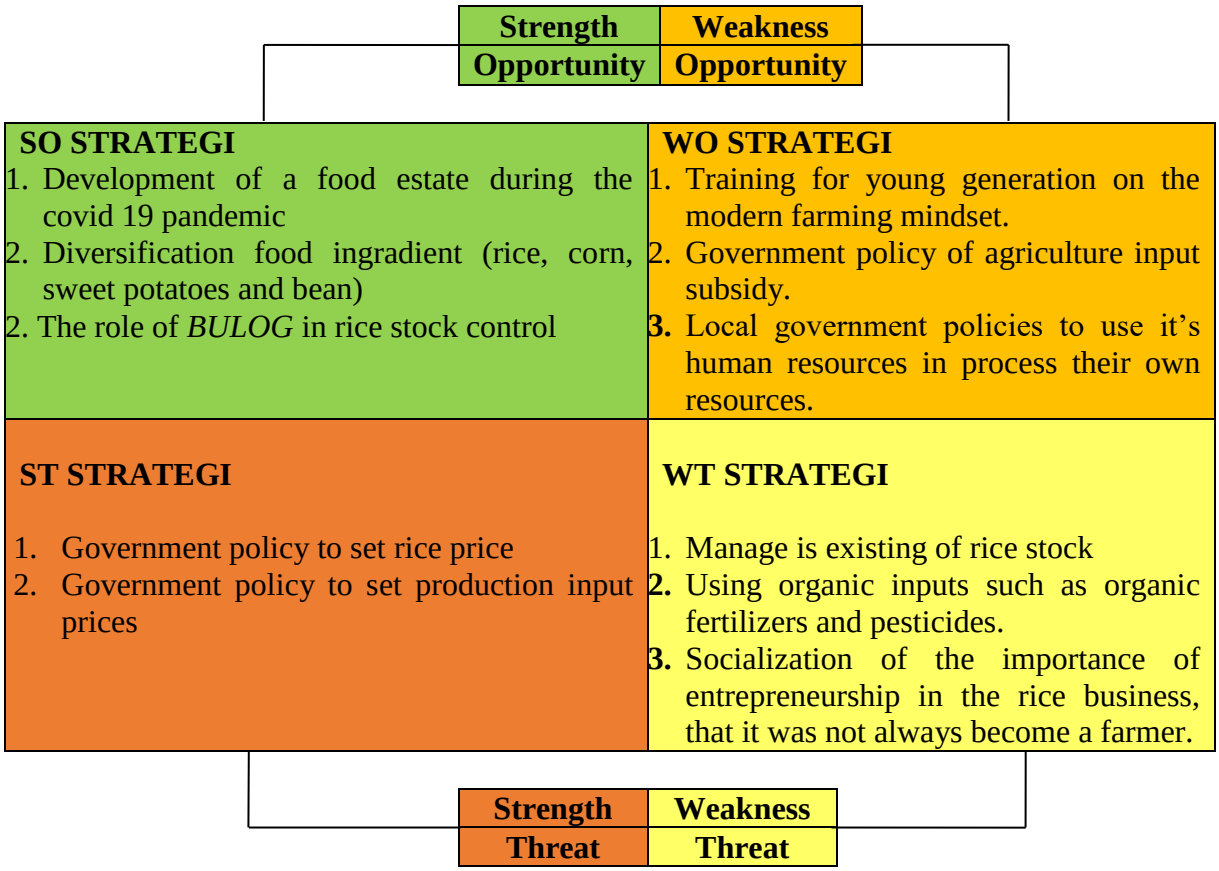

***Figure 2**. East OKU Regency SWOT Strategy for Rice Food Security in Covid 19 Era*

3.3 SO Strategy

a. Development of a food estate during covid 19 pandemic

The impact of covid 19 was so great that it was necessary to accelerate strategies in solving the food crisis, especially rice (Yeny et al. 2022). The development of food estatet must consider the advantages and problems that will be faced. Increasing the income of local communities needed to be prioritized. According to (Kristhy and Harefa 2021) that food security could be pursued by building food granaries.

b. Diversification of food ingredients (rice, corn, sweet potatoes and beans)

Diversification of food crops was a safe and sustainable food security solution (He et al. 2022). Diversity of food consumption not only consumes rice but also consumes corn, sweet potatoes and beans. The era of covid 19 made the economy unstable, so diversification strategy was right to be implemented in East OKU Regency. According to (Mzyece and Ng'ombe 2021) that food diversification had been proven to reduce the impact of changing situations on society.

c. The role of BULOG in rice stock control

Rice was the main food needed by in Indonesia society. The demand of rice has increased in era of COVID-19 pandemic, resulting in a shortage. Rich society mindset to buy, rice as much as possible for future raise, other problems (Zahrah, Arkeman, and Indrawan 2021). So it was necessary to control *BULOG* as a means of procuring rice (Purwaatmoko 2022; Science 2022).

3.4 WO Strategy

a. Training for young generations on modern farming mindset

The rice food agriculture sector was the leading sector in East OKU Regency. Job opportunities in the agricultural sector were high, but the interest of the community was low, especially young generations, they were less interested in working the agricultural sector. The training strategy was to increase the interest of young generations to contribute in agricultural sector.(Fahrurozi et al. 2022)(Muksin et al. 2022) stated that decline GRDP in agricultural sector was influenced by less interest of young generations to work in agricultural sector.

b. Agricultural input subsidy policy from government

The stability of development agricultural sector related to national economy. The instability of agricultural production related to production input system. Government should support agricultural process by subsidizing agricultural inputs.[45] stated that healthy agriculture was evidenced by increased production so that government needed to allocate financial funds for production input subsidies to increase farmers' income.

c. Local government policies on use of human resources to process their own resources

East OKU Regency had not human resources to manage existing resources. Good management was carried out by capable human resources. Ability needs to be grown with training or training programs from the government. The need of government policies to utilize existing human resources with well-regulated empowerment. (Angi, Kartika, and Wiati 2022) stated that increasing the capacity of human resources depends on government policies in managing them.

3.5 ST strategy

a. Government policy to set rice price

Rice was a strategic sector in the Indonesian economy. It was inelastic even though the price of rice increases, the demand for rice did’not decrease because it was staple food of Indonesian people. (Krisnamurthi and Utami 2022)[47] stated that rice price policy showed a relatively small elasticity.

b. Government policy to set production input prices

Production inputs played an important role in increasing production. The government should set the highest retail price for production inputs to stabilize prices in both traditional and modern markets.(Fahmid et al. 2022) stated that the increase in the retail price of the highest production input will result in a decrease in rice productivity. This illustrated that if the price of production inputs set by the government increases, it will reduce the yield of rice production.

3.6 WT Strategy

a. Manage is the existing stock of rice

Rice must be available always; it was necessary to regulate the stock of rice. A stable supply of rice can reduce food insecurity in a region. Rice stock related to rice supply. Rice stock related to was a strategic commodity, so rice supply chain was not transparent. According to (Jamaludin, Fauzi, and Nugraha 2021) rice supply chain model was a closed system. This was because from all level of traders, they wanted to maximize profits.

b. Using organic inputs such as organic fertilizers and pesticides

Higher price of inputs for chemical production, farmers must think about using inputs from organic materials that they can be make themselves. Fertilizers made from organic waste were animal waste, leaf litter, fruit and vegetable peels. (Soni et al. 2022) stated that the use of fertilizers, pesticides, antibiotics that avoid the use of harmful synthetics was called organic farming.

c. Socialization of importance of entrepreneurship in rice business

Farmers usually always became producers. So that farmers felt the smallest income compared to agents or retailers. Therefore, it was necessary to learn how to entrepreneurship which was instilled in today's farmers. According to (Imelda, Hidayat, and Aritonang 2022) entrepreneurial farmers will think creatively, innovatively, and independently to improve the performance of their rice farming.

From the results of the research, it was necessary to suggest to East OKU Regency government to regulate existing resources as strengths and maximize them properly as a source of prevention when conditions change or situations such as the Covid 19 era.

IV. Conclusion

From research results, it can be concluded that the rice food security strategy in the COVID-19 era in OKU Timur Regency used grand strategy of IFAS and EFAS. The strategy produced food security which there was in cell I. Cell I was a concentration strategy through vertical integration, this strategy had high growth. While, the SWOT matrix used SO: construction of food barns, food diversification, and the role of BULOG. WO: training of young generations on modern agriculture, subsidy for production inputs, utilization of human resources to process natural resources. ST: government's policy was to set rice price and production input prices. WT: managing rice supplies, using organic production inputs, socializing entrepreneurship in rice sector.

Acknowledgements

We would like to thanks to Ministry of Research, Technology and Higher Education for providing research funding for novice lecturers with the Master contract no: 154/E5/PG.02.00.PT/2022. And I didn't forget to thank the LPPM team at Baturaja University for their cooperation.

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