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## **STRATEGY AVAILABILITY FOR HOUSEHOLDS OF RICE FARMERS IN KERTAPATI DISTRICT OF PALEMBANG CITY (INDONESIA) DURING THE COVID-19 PANDEMIC**

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### **ABSTRACT**

The COVID-19 pandemic has had a global impact, including in the agricultural sector. This study aims to determine the strategies used by rice farmers as rice producers in fulfilling their staple food during the covid-19 pandemic. The research was conducted in Kertapati District, which is the sub-district with the largest rice field in Palembang City, with 92 respondents. The study used a survey method with direct interviews and SWOT analysis. The results of the study indicate that there are internal and external factors that affect the availability of staple food rice for rice farmers, including internal factors, namely strengths and weaknesses. One indicator that affects the strength of this analysis is saving most of the harvest, while the weakness is that farmers do not implement an integrated cropping system. In addition, external factors include opportunities and threats. Opportunities that can be utilized by rice farmers include support from the government in the form of fertilizer subsidies and assistance for basic foodstuffs. Meanwhile, the threat of rice farming is the soaring price of pesticides, the unequal distribution of basic food aid from the government. It is concluded that farmers fulfill their rice needs by using strength and taking advantage of opportunities in the SWOT analysis, so that farmers are expected to meet their rice needs by making maximum use of land, high production and saving some of the harvest.

### **KEY WORDS**

Availability, COVID-19 pandemic, farmer's household, rice, staple food, SWOT.

Food security is one of the most strategic issues in national development, especially for developing countries like Indonesia. According to the Law of the Republic of Indonesia Number 18 of 2012 concerning Food states that "Food Security is the condition of the fulfillment of food for the state 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 the religion, belief, and culture of the community, in order to live a healthy, active and productive life in a sustainable manner". One important aspect in building food security is food availability. Food availability can be obtained from domestic production and national food reserves as well as imports if the two main sources cannot meet the needs.

Harvest Area and Rice Production in Indonesia 2021 has been officially released BPS where based on the Fixed Figures (ATAP), in 2021, the rice harvested area will reach around 10.41 million hectares with a production of 54.42 million tons of GKG. If it is converted into rice, then rice production in 2021 it will reach 31.36 million tons. Farmers manage crops in different ways from one area to another. The majority of farmers sells their harvest directly to wholesalers, either in the form of grain or milled into rice.

Food security is not only related to the adequacy of food availability, but also access to food and at a more advanced stage is related to the level of security (Nurhemi et al., 2014). The importance of creating food security as a vehicle for strengthening economic and political stability, guaranteeing food availability at affordable prices and promising to encourage increased production. Fulfillment of sufficient food, both in quantity and quality, safe, equitable and affordable by all households is the main target in economic development. The increasing demand for food in line with population growth, encourages the acceleration of food production in the context of realizing price stabilization and food availability,

Indonesia has 34 provinces, of which there are five provinces that produce the highest rice production, one of which is the province of South Sumatra which is ranked as the fifth

largest rice producer in Indonesia. In Sumatra Province, there are three highest rice-producing regencies, namely the first Bayu Asin Regency at 820,377.00 tons, the second OKU Timur Regency at 682,596.00 tons per hectare, and the third OKI Regency at 542,291.00 tons. Meanwhile, from data from the Central Statistics Agency for South Sumatra in 2002, one of the surplus regencies in South Sumatra Province for a period of ten years (1992 – 2001), was Ogan Komering Ulu Regency with a rice surplus of 32,847 tons. However, to return OKU Regency to a rice surplus like in 1992 to 2001 is not easy,

Government programs in order to support food self-sufficiency, especially rice, require efforts to increase sustainable rice production. Various efforts have been made, among others, through increasing assistance in the application of technology packages, providing production facilities, movement for processing land and rice plants, harvesting and post-harvest handling facilities, price marketing facilities through the movement of all stakeholders from the central to village levels (Ministry of Agriculture 2013).

Household food availability is influenced by food production and income which determines the purchasing power of a person or family for food. Socio-cultural status, such as attitudes, eating habits, taboos on food, ignorance of nutrition and food distribution in the family affect the adequacy of food availability (Harper et al, 2009).

The high spread of the virus and cases of death due to COVID-19 have caused pandemics in many countries and even Indonesia. Therefore, many affected countries, including Indonesia, have closed access to and entered the region or country (lockdown). Another policy implemented is to reduce activities that involve a lot of people (social distancing). The Food and Agriculture Organization (FAO, 2020) stated that COVID-2019 is affecting agriculture in two significant aspects: food supply and demand. These two aspects are directly related to food security, so that food security is also threatened.

The COVID-19 pandemic was initially a human health problem, but later it had a wide impact on various aspects of life. The first important aspect affected by the outbreak of COVID-19 is the economic sector, both macro and sectoral, including the agricultural sector. In the midst of a decline in overall economic activity, the agricultural sector is expected to act as a buffer so that national economic growth does not decline further. The agricultural sector is also expected to accommodate additional workers due to termination of employment (PHK) or entrepreneurs from other sectors who experience bankruptcy (Sudaryanto, et al. 2020).

Based on this description, a rice farmer household staple food availability strategy in Kertapati District, Palembang City will be studied during the COVID-19 pandemic.

## METHODS OF RESEARCH

The method used in this research is a survey method. This method is used because primary data collection is carried out directly to the research location and direct interviews and by using questionnaires to food crop farmers, namely farmers who grow lebak swamp rice as the object of research at a predetermined location. This method takes samples from the population. The use of this method aims to conduct thorough observations at the research location to obtain facts from the conditions that exist in the field and seek actual information in the area that will be the location of the research to be carried out. In general, this research is focused on surveys, in-depth interviews with sample farmers, and analyzing the data obtained (exploration research).

Sampling in this study was by simple random sampling method, where the Simple Random Sampling method was used to determine a sample of rice farmers who were carried out randomly using the lottery technique, because the population to be taken as a sample was homogeneous, which means it has the same opportunity (Sugiono, 2017). The total population in this study was 1132 farmers in Kertapati District, Palembang City which consists of 5 villages. Each sample was taken from each kelurahan which was then taken as a sample of 92 rice farmers.

Data collection method is a technique or method used to collect data. Data collection methods can be through questionnaires, interviews, observations, tests and so on. Data

collection was carried out to obtain the information needed in order to achieve the research objectives. The types of data collected in this study consisted of primary data and secondary data. Primary data was obtained through direct interviews with respondents using a list of questions (questionnaires) that had been prepared in advance, while secondary data were obtained by researchers from various existing sources. The data collected in the form of data derived from books, reports, journals and data sourced from the relevant agencies or agencies.

The strategy for strengthening food security was analyzed using a SWOT matrix. According to Rangkuti (2014) after collecting all the information that affects food availability in Kertapati District, Palembang City, the next step is to utilize all of this information in the SWOT matrix model.

## RESULTS AND DISCUSSION

Respondents are rice farmers who have lebak swamp land type, with an average land area of 1 hectare. The average farming experience is above five years with the majority of men as workers. The education level of the respondents includes elementary, middle and high school graduates. For an overview of the respondents can be seen in table 1.

Table 1 – Overview of Land Area in Kertapati District in 2021

No	Ward	Agricultural Area		Land for Non-Agriculture
		Rice Field Area	Non-Paddy Land Area	
1.	Karya Jaya	721.00	42.00	845.00
2.	Kramasan	490.0	9.0	303.00
3.	Kemang Agung	65.0	1.70	93.30
4.	Kemas Rindo	65.0	456.0	1101.00
5.	Ogan Baru	18	10.0	35.00
	Amount	1,359,00	518.7	1,276,3

Table 2 – Land Ownership Status

No	Cultivated Land Status	Number of Respondents (persons)	Percent (%)
1.	One's own	49	53.26
2.	Rent	29	31.52
3.	Land overlap (profit sharing)	14	15.22

Table 3 – Description of Respondents

Characteristics	Frequency	Percentage
Gender		
Woman	24	26.67
Man	68	73.33
Last education		
Primary school	52	56
Junior high school	27	30.67
Senior high school	13	13.33
Age		
23-32	6	6.67
33-41	17	18.67
42-51	31	33.32
52-60	24	26.67
61-70	14	14.67

Rice farming workers in the sample in Kertapati District in Palembang City consisted of 73.33% male workers and 26.67% female workers. Judging from the level of education, the workforce in rice farming is carried out by workers who are elementary, junior high and high school graduates with a score of 54 elementary school graduates. The age range also varies; most of the labor in rice farming is dominated by farmers with a vulnerable age between 41-51 years old by 33.32%.

Humans need food to grow and be active. Meanwhile, food needs must have food

availability, so that these needs are met. Need and availability are inseparable if we want to talk about food sufficiency. In this study the need and availability of food in the form of rice (rice). Ironi (2011) in his research entitled Analysis of Staple Food Availability and Household Consumption Patterns of farmers stated that certain socio-economic factors such as narrow agricultural land, poverty and low income also caused low food availability. These three things are interrelated problems and are still faced by farmer households. The scarcity of agricultural land is caused by the increasing number of farmer households, while the amount of agricultural land remains constant. The area of agricultural land will have an impact on the production and income of farmers. If the agricultural land is narrow, then farm production will be low and result in low farmer income.

Table 4 – Food Needs and Availability in Palembang City as of March 2021

No	Food Commodity	Availability	Need
1.	Rice	166.761.480 kg/year	159,637,729 kg/year
2.	Corn	3,720,873 kg/year	3,381,612 kg/year
3.	Shallot	1,452,012 kg/year	1,320,011 kg/year
4.	Garlic	1,452,012 kg/year	1,320,011 kg/year
5.	Big Chili	36,244 kg/year	32,949 kg/year
6.	Cayenne Pepper/Devil	36,244 kg/year	32,949 kg/year
7.	Beef	858,409 kg/year	780,372 kg/year
8.	Chicken meat	11,827 kg/year	10,752 kg/year
9.	Chicken eggs	2,038,190 tons/year	18,529 tons/year
10.	Sand Gul	3,439,370 tons/year	31,267 tons/year
11.	Cooking oil	21,746,144 liters/year	19,769,422 liters/year

*Data Source: Food Security Sector (DPKP) Palembang City.*

Food and its contents that are eaten and needed by humans in certain quantities to carry out their lives in order to be able to develop and carry out activities can be said to be food needs. Food is needed by humans throughout their lives, starting from birth, humans already need food starting from breast milk to the food they eat at this time. Food needs vary between humans, but staple food patterns are usually characterized by regions that have different eating patterns. As stated by Busthanil Arifin, 1994 in addition to the differences in food patterns in a region, in Indonesia consumption patterns can be classified into two, namely the main rice consumers; the main consumers of rice and non-rice ingredients as the staple food. Broadly speaking, the western part of Indonesia uses rice as its main staple food item, while the eastern part uses rice and other staple foods as its main staple food. Rice is the most consumed commodity by the Indonesian population as the main source of carbohydrates.

Table 5 – Average rice consumption per capita of rice farmer households in Kecamatan Kertapati during the covid-19 pandemic

No	year	Rice Consumption/day (grams)	Rice Consumption/year (grams)
1.	2019	1,235	450,775
2.	2020	1,249	455.885
3.	2021	1,250	456250

*Data Source: Processed field data.*

Although it is not the only determining factor, food availability remains a major factor in assessing food security, apart from being inseparable from the problem of food needs as well. Availability of food, one of which can be seen from local production produced from the region in food commodities, especially rice, starchy foods, fruit vegetables and animal foods. The availability of this food will later become one of the main keys in determining the future of food security in the city of Palembang. The distribution of food availability which is grouped into three categories, namely high, medium and low, is known to see how much availability of food commodities produced by the region.

Table 6 – Average rice production per capita of rice farmer households (one growing season)

No	Year	Rice Production (Kg)
1.	2019	2,968
2.	2020	3.305
3.	2021	3.323

Source: Processed field data.

Table 7 – Average production of rice supplied for consumption

No	Staple food (rice) stored (kg)	Number of respondents (people)	Percentage (%)
1	>500	52	56.52
2	500-400	28	30.43
3	< 400	12	13.05

Source: Processed field data.

Based on data obtained from the Palembang City BPS in 2021, it is known that the city of Palembang is experiencing rice division, but the availability of staple food for the people of Palembang City in general and rice farming households in particular is not only seen from the amount of production and consumption alone. According to Hanani (2012) current food security is not solely from the aspect of providing food through self-sufficiency efforts, but what is more important is the effort to realize household food security to reduce food insecurity. So that in the case of the availability of rice staple food in Palembang City, it is not only seen from the side of self-sufficiency, but can be viewed from the access of the people of Palembang City, especially rice farmers as a sample in meeting the availability of their rice staple food.

The availability of staple food rice for rice farmers is also influenced by farm household income which comes from rice farming income, non-rice farming income and non-farming income. If the income of rice farming and its own production is not sufficient for the availability of staple food rice for the rice farmer household, non-rice farming income and non-farm business income can help meet the availability of staple food for the household rice itself.

Food adequacy indicates that the need for adequate food is met. There are those who experience excess or even just enough to meet local food needs in their area. By looking at the adequacy and availability side, we can then find out which areas have the potential to meet local needs and which areas require other food supplies to meet their needs.

Staple food is considered the most important in the composition of dishes in Indonesia because the amount is the largest among the foods consumed. Staple food is also considered important because the composition of the food is not considered complete if there is no staple food. In addition, staple food is the main source of energy (Sediaoetama, 2009). The Nutrition Adequacy Rate is one indicator that can be used to see household food security. Food security itself includes 3 aspects, namely availability, consumption, and distribution. The availability side means the availability of sufficient food for the entire population in terms of quantity, quality, safety and affordability. The consumption side means the ability of each household to access sufficient food for each member so that they can live a healthy life. While the distribution side concerns the availability of food for each community group (Rohima, 2015). Availability of staple food for household rice farmers by taking an inventory of staple food (rice) available in the family both obtained from inputs, namely rice farming production, purchases and gifts, which is reduced by household output, namely sales, social activities, and given to other parties in grams/capita/day. Systematically, the availability of staple food (rice) in rice farmer households can be calculated by the formula: minus household output, namely selling, social activities, and given to other parties in grams/capita/day. Systematically, the availability of staple food (rice) in rice farmer households can be calculated by the formula: minus household output, namely selling, social activities, and given to other parties in grams/capita/day. Systematically, the availability of staple food (rice) in rice farmer households can be calculated by the formula:

$S = (\text{Input for production of rice farming} + \text{purchases}) - (\text{output sold} + \text{social activities} + \text{given to other parties})$

Where: S = Availability of staple food (rice) of farmer households (grams/kapaita/day rice is converted into kcal/capita/day); Input = staple food input (rice) from farming production, purchasing and giving (gram/capita/day of rice converted into kcal/capita/day); Output = output of staple food sold, social activities, given to other parties and others (grams/kapaita/day of rice converted into kcal/capita/day units).

The criteria for energy availability from staple food (rice) used are:

- High: Energy availability 1600 kcal/capita/day;
- Medium: Energy availability between 1400-1599 kcal/capita/day;
- Low: Energy availability <1400 kcal/capita/day (Adi et al, 1999).

Where: Every 1 gram of carbohydrates and protein will produce 4 kcal, while 1 gram of fat will produce 9 kcal.

Table 8 – Availability of energy from staple food (rice) during the covid-19 pandemic (2019-2021)

No	Availability of staple food (rice)	Number of respondents	Percentage
1.	High ( $\geq 1600$ kcal/capita/day)	32	34.78
2.	Moderate (1400-1599 kcal/capita/day)	49	53.26
3.	Low (<1400 kcal/capita/day)	11	11.96

Source: Processed field data.

Table 9 – Internal and external factors that affect the strategy for the availability of staple food (rice) for rice farmer households in Kertapati District during the pandemic

INTERNAL FACTORS	
STRENGTH	
A.	Rice production for most farmers is quite high
B.	Farmers set aside part of their production for daily consumption
C.	Most of the land owned by farmers is their own
WEAKNESS	
A.	Rice consumption power increases
B.	Farmers only plant once a year
C.	the planting system that is carried out is an integrated planting system
EXTERNAL FACTORS	
OPPORTUNITY	
A.	There is food assistance from the government
B.	There is a fertilizer subsidy for group farmers
C.	There is assistance from agricultural extension workers
THREAT	
A.	crop failure due to natural factors and pests
B.	Soaring pesticide prices
C.	Uneven distribution of basic food aid

Source: Processed field data.

According to Fahmi (2014), to analyze more deeply about SWOT, it is necessary to look at external and internal factors as an important part of a SWOT analysis. Based on the identification of the scoring analysis of internal factors and external factors, it is known that the increase in food availability in Kertapati District has a total score of 0.46 internal factors and 0.62 external factors.

## CONCLUSION

From the analysis carried out in this study, it can be concluded that when viewed from the side of production and consumption of rice farmers' households in Kertapati District, Palembang City, the availability of staple food rice has been largely fulfilled, and a small part has been helped by the assistance of basic materials from the government during covid-19 pandemic. Judging from the availability of energy sourced from basic ingredients, namely rice, only a small part of which has a low level of energy availability caused by crop failure,

one of which is natural factors and disturbances of plant-disturbing organisms in rice, which are also influenced by soaring pesticide prices. In addition, the uneven distribution of basic material assistance provided by the government during the COVID-19 pandemic is one of the factors that also affect the low availability of basic ingredients (rice) in a small number of rice farmer households in Kertapati District. In the SWOT analysis that has been carried out to find out the strategy for the availability of staple food in rice farmer households in Kertapati District, the results of the analysis show that the strategy applied in this condition is a strategy that supports an aggressive growth policy (growth oriented strategy), namely by increasing production. rice so that it can store more, by taking advantage of the status of the land, most of which are owned by themselves and in order to be able to capture other opportunities from the assistance provided by the government, either through basic material assistance or subsidized fertilizer assistance and take advantage of the opportunities available for agricultural extension workers. The SWOT analysis carried out can be used as a reference for rice farmer households in Kertapati District so that the availability of staple food (rice) is maintained and will be better than before.

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