

## Identification of Farmers' Local Wisdom in Managing Lebak Swamp Land during the Covid-19 Pandemic Period in Keramasan Village, Palembang City, Indonesia

Muhammad Arbi<sup>1</sup>, Yulian Junaidi<sup>2</sup>, Indri Januarti<sup>3</sup>, Serly Novita Sari<sup>4</sup>

<sup>1,2,3,4</sup>Faculty of Agriculture, Universitas Sriwijaya, Indonesia

[biaarka@gmail.com](mailto:biaarka@gmail.com)

### Abstract

*Utilizing the potential that exists in oneself and the surrounding environment is one way to be able to adapt to current conditions. The COVID-19 pandemic has also had an impact on the condition of farming activities in Keramasan Village. In addition to the distribution of production results, the pandemic also has an impact on the production process, resulting in a decrease in production at the lowland swamp farmer level. But on the other hand, farmers in Keramasan Village have their own local wisdom in carrying out farming activities. This attracted the attention of researchers to examine how existing local wisdom supports rice farming activities during the pandemic and how it affects the household income of rice farmers in wetlands (sub optimal). The results of this study indicate that the majority of the community still maintains local wisdom of rice management in the Lebak wetlands, especially in cultivation. Local wisdom of farmers in managing rice crops includes seed procurement, planting, harvesting, and operations post-harvest. Local wisdom in procuring seeds is that farmers still use the seeds from the previous harvest, borrow and use the planting and seedling system. Local wisdom about harvesting uses simple tools such as sickles and machetes. Finally, it is post-harvest local wisdom for farmers to sell their harvests directly to middlemen who come to their land during the harvest process.*

### Keywords

local wisdom; pandemic; lebak rice



## I. Introduction

Swamp land is potential land to be developed into agricultural land. Currently, there are many farmers who use lebak swamp land as land for various agricultural activities. One of the agricultural activities carried out in the Lebak swamp land is rice farming. Rice is the dominant commodity planted in the Lebak swamp land. Farming activities carried out in this Lebak swamp land are quite varied. This is to make optimal use of the land. However, to achieve maximum results, it is necessary to balance it with good and appropriate management of lebak swamp land. This is due to the different characteristics of lebak swampland from each type, so that the efforts to manage it vary. Each region has a different way of managing its lebak swamp land. Some use modern methods and some still maintain local wisdom in their area.

Since the emergence of the disease outbreak caused by the corona virus (Covid-19) that hit the whole world, it has had a lot of impact on people's lives in various countries. Social behavior and economic activities in people's lives have changed during the Covid-19 pandemic. Corona virus or often called Covid-19 (Corona Virus Disease 2019) is one of the many viruses that attack and infect the respiratory system. Corona virus disease

(Covid-19) was first discovered in the city of Wuhan, China on December 30, 2019. The most commonly known danger of the corona virus is that it spreads faster and more easily than SARS (Bustami in Junaedi, 2020). Covid-19 has spread to other regions in China and even several countries in the world, one of which is Indonesia. In addition, the Indonesian government has made several policies to reduce the rate of the spread of COVID-19, including quarantine policies for areas exposed to COVID-19, lockdown, large-scale social restrictions (PSBB), health protocol rules and social distancing. The current COVID-19 pandemic crisis, which is still ongoing, has caused some people to have to survive or adapt to the impacts. Utilizing the potential that exists in oneself and the surrounding environment is one way to be able to adapt to current conditions. 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).

In addition, according to Soekartawi in Hasyim and Iskandar (2019), farmers generally adapt to the surrounding environment due to the limited knowledge they have, such as in processing land in a traditional way, limited capital and simple tools used in working. Therefore, the resulting production is still low and in the end the income will be much lower. Based on these conditions, farmers then try to develop in terms of the use of agricultural tools, but in their management, they still maintain local wisdom in the village. This is done with the aim of increasing the production and income of farmers.

Local wisdom is usually carried out on customs and community beliefs that are held for a long period of time and are also often used to solve problems in meeting the daily needs of the community (Ridwan, et al., 2016). The management of lebak swamp land based on local wisdom is usually widely applied by the community in the village, which in the process they still uphold the customs and habits of their previous ancestors.

According to the 2017 Palembang City BPS, Kertapati District is one of the sub-districts that has a wetland rice plant area in the Palembang City area. This can be proven by the data on the area of wetland rice (suboptimal) in 2019 covering an area of about 2,270 hectares. Kertapati District is included in the Palembang City area and consists of six villages. The villages in Kertapati District consist of Karya Jaya Village, Kemang Agung Village, Kemas Rindo Village, Keramasan Village, Kertapati Village, and Ogan Baru Village. Based on the 2018 BPS Kertapati District, Keramasan Village has a wetland area (suboptimal) of about 490 hectares and an area of non-wetland agricultural land of about 9 hectares.

Research related to the relationship of local wisdom to lowland rice farming income has been carried out, but studies on optimizing rice farming based on local wisdom on the income level of rice farmers in the Lebak swamp land during the COVID-19 pandemic are still rarely studied. This study aims to find out how existing local wisdom supports rice farming activities in the Lebak swamp land during the pandemic and to find out the income of rice farmers during the pandemic and to analyze the optimization of rice farming in the Lebak swamp based on local wisdom in Keramasan Village, Kertapati District, Palembang City.

## **II. Research Method**

The method used in this study is a survey method with a sampling technique represented by rice farmers in the wetlands (suboptimal) around the research location. The main purpose of conducting a survey is to draw conclusions about the characteristics of the

population based on the information contained in the sample. Meanwhile, the sampling method in this study will use a simple random sampling 60 farmers.

The data collected are primary and secondary data. Primary data collection will be carried out in July 2022, by means of interviews equipped with questionnaires.

1. Primary Data, Primary data collection was carried out in July 2022. Primary data was collected using a questionnaire, according to the research objectives and the approach model to the research objectives. The primary data to be taken is the area of the yard, the potential for labor, and family income.
2. Secondary Data Secondary data collection begins in March – December 2022. Secondary data is collected through various literatures at related institutions at the village level, which include: village monographs, leaflets of relevant institutional data, and report documents deemed important according to the research objective

### **III. Result and Discussion**

The agricultural sector in Kertapati District does not have much influence on the community's economy, as does other areas in Palembang City. Changes in people's mindsets affect the decline of the agricultural sector. The higher the need for life and the level of education have caused many people to switch jobs outside the agricultural sector. In addition, the rapid population growth has resulted in higher demand for housing. As a result, many agricultural lands have been converted. Like other sub-districts in Palembang City, most of the land in Kertapati District is used for settlements and economic activities (trade and services)

. reduced to 40%. The people of Keramasan Village use the Rebak Wetland to grow rice. In terms of farming, farmers have passed down from generation to generation local wisdom that has existed since the time of their ancestors. Apart from growing rice, some farmers raise fish and livestock. These farmers only started cultivating this fish in 2021, and because the fish are not yet old enough to be harvested, there is no income from this cultivation. After harvesting, the fish are sold in the local village environment. Fish farming equipment is still relatively simple and improvised, which only uses nets and bamboo as barriers. On the other hand, most of the people raise livestock such as chickens and ducks which are still done traditionally. Chickens and ducks are usually made in cages or cages made of wood and nets and placed next to or in front of people's homes. For farmers who have houses on stilts, cages or cages are placed under the house. When a cow is old enough to be sold, it is usually transported by a person (calo) who buys a calf and leaves the mother alone to raise it again. The selling price of this animal itself ranges from Rp. 40,000 to Rp. 60,000 depending on the agreement between the seller and the buyer, also adjusted to the size or weight of the animal. In Keramasan Village, farmers also cultivate fish in addition to planting rice to increase their income during the COVID-19 pandemic.

#### **3.1 Management of Rice Crops in Lebak Swamp Land**

Keramasan Village, is an area where most of the population is rice farmers in the Lebak Wetlands. The community has taken advantage of the Lebak swamps there, and local wisdom has been practiced since ancient times . The average area land arable rice is planted with around 0.25 to 2 hectares, part of which is sold and part is stored for consumption by farmers. However, when yields are low, farmers usually prefer to save crops for consumption daily during the growing season and before harvest . Based on survey , 100% respondents are farmers who grow rice in paddy fields. farmers rice in

Keramasan Village have planted or cultivated rice at least 10 years. Rice cultivation by farmers is carried out once a year, namely during the dry season or low tide, and farmers usually start sowing in April or May, with a planting period of 3 to 4 months. Some farmers rice in Keramasan Village following local wisdom that passed been down from generation to generation or has become a practice based on years of in fields.

### **3.2 Land Preparation and Processing**

Local wisdom of this village lies in the process of preparing and cultivating the land. mutual cooperation system and the use of simple traditional tools. Farmers' tools are hoes, machetes, and sickles. This system is used by farmers because it has been used for generations to make their work easier and reduce the time needed to prepare and manage the land. Usually this mutual cooperation is carried out by neighboring farmers using alternative systems starting from one farm and continuing with another. In addition to simplifying and accelerating land preparation and processing, the goton-royong system also builds good relations with other farmers because they can help and support each other. Based on the findings obtained, farmers in this village are still cultivating land through Gapoktan, either alone or with a wage system. This is done by some farmers who do not want to do it themselves. Or the mutual cooperation system, employing other people to prepare and manage the land. Or through the wage system is the fastest way, but farmers have to pay Rp. 50.000/day – Rp.75.000/day.

### **3.3 Procurement of Seeds**

The seeding process is usually carried out in two stages commonly known as soaking. Harvested seeds are soaked in barrels for approximately 2 days 2 nights to determine good quality seeds for sowing. After getting seeds , cut into 2 and sow. The sowing is carried out around the house or on the embankment and indirectly in the fields because the rice fields are often flooded. After the first sowing is completed, the seeds that have begun to germinate are halved and then sown again until they are high enough so that the seeds planted immediately and are not flooded by puddles in the field. . This process is often referred to as process immersion The process of sowing self-harvested rice by farmers independently is always carried out by local farmers to produce more seeds when needed and can reduce the cost of buying seeds in the market.

### **3.4 Planting**

Based on the results of research conducted by farmers in Keramasan Village, procedure seeding Sowing is done twice before seeds that have been sown are sent to area planting Farmers are still practicing because system this transplanting of the condition of the lowland swamp which is often flooded. Therefore , while waiting for the water to recede, people who sow seeds around their houses or suburbs are not flooded because the sowing process takes a long time. With this precarious land condition, farmers are not always able to obtain even failures with large yields, frequent crop . For drilling holes in the planting area, the community uses a pencil sharpener distance of 30-40 cm. The use of this tool is still mostly done by farmers because it is a custom or habit that is passed down from generation to generation and the tools used will also last for several years.

### **3.5 Fertilization**

In Keramasan Village in process using manure. According to research data, about 60% of farmers in village still use manure and some do not use fertilizer at all. Those who don't fertilize let the soil grow naturally because they don't have the money to pay for it,

while 40% use UREA or NPK fertilizers for their crops. Farmers who use manure usually use fertilizer for livestock, while farmers who use UREA or NPK fertilizers pay directly at the market with prices ranging from Rp. 7,000 to Rp . 8,500/kg. For the use of UREA and NPK fertilizers, farmers believe that it will create conditions for rice plants grow and produce more abundant fruit than using manure or no fertilizer at all.

### 3.6 Maintenance of Plants

Wisdom of the Keramasan Village community in the process care is to use scarecrows. According to results , up to 80% of farmers in Keramasan Village still use scarecrows to protect and repel harmful pests, while 20% of farmers have used pesticides or toxic sprays to repel and kill pests. The use of scarecrows or plastic around the rice fields to maintain crops is also an inherited and is considered more beneficial. Some farmers also control weeds by cleaning or weeding or by breaking weeds (such as sickles or machetes) as well as by hand or by hand.

### 3.7 Harvest

Wisdom of farmers in Keramasan Village process harvesting is harvest using traditional equipment. According to research results, 100% of farmers in area are still harvesting manually with sickles and using a mutual cooperation system. The process of preparing and loosening the soil in advance. This mutual cooperation is always carried out by residents because it makes everything easier and the harvesting process is faster. With this mutual cooperation system, farmers help each other and help to get the job done quickly. In addition, farmers use traditional equipment because the land is not too large. And still many farmers who cannot use the machine (combined harvester) but have to pay and rent it. For a pay-for-harvest system, the cost is usually in the form of a yield in a ratio of 10:1 or if the money is around IDR 5,000 per 50 sacks of rice harvested.

### 3.8 post-Harvest

Wisdom of farmers in Keramasan Village in the post-harvest process , namely selling the harvest directly to middlemen as grain. According to research results, about 60% of farmers adopt system because they have been used to it since ancient times, while 40% of farmers crops their for personal consumption. After harvesting, the rice will be dried in the sun before being sold. “Farmers there sell their harvested rice in cans. Buyers often go directly to farmers to buy seeds. method is still used because it is considered able to establish relations good between sellers and buyers and everyone will get the same benefits and farmers do not need to go to the market to sell their crops. However, if yields are low, farmers will save it for personal consumption rather than for sale, and some harvest their also stored as seed for future planting.

Based on this description, it can be concluded into the ISEPSA matrix as follows:

**Table 1.** Local Wisdom in the Management of Lebak Swamp Rice Plants

No.	Stages	of Forms of Local Wisdom	Identification of ISEPSA	Comparison
1.	Land Preparation and Processing	The gotong royong system uses traditional tools such as hoes, machetes or sickles.	S9 (the prosperity of the community increases so that the work is completed quickly and the ecosystem functions increase so that the land becomes looser and less dense)	Using a tractor

---

2.	Procurement of Seeds and Seeding	Using seeds from the previous harvest with 2x process of sowing.	S6 (the prosperity of the community increases so that it reduces the cost of rice farming and the ecosystem function does not change because it does not affect the ecosystem from the environment)	Buying seeds in the market
3.	Planting	A transplanting system which is carried out traditionally using equipment, namely an extension.	S5 (the prosperity of the community does not change but adds work because they have to move seedlings to the planting area and the ecosystem function does not change because it does not change the nature and of the soil)	Direct planting system
4.	Fertilization	Using manure	S9 (community prosperity increases because it reduces farming costs rice and its ecosystem functions increase because it makes the soil more fertile)	Use chemical fertilizers
5.	Maintenance	Use scarecrows and use machetes or sickles to clean weeds.	S9 (increased community prosperity so as to reduce rice farming costs and increase ecosystem function because it can overcome nuisance pests)	Using pesticides
6.	Harvesting	Using traditional equipment, namely sickle with a mutual cooperation system	S4 (community prosperity is reduced because it reduces productivity and ecosystem functions do not changes because it does not change the ecosystem from environment")	Using <i>combine harvester</i>
7.	Post Harvest	Directly sells the harvest to middlemen who come directly to the farmer's house	S4 (community prosperity is reduced because income is lower and the ecosystem function does not change because it does not change the ecosystem environment)	Self-consumed

---

Source: Primary Data Processed, 2022

Based on the results from table 1. it can be concluded that:

1. Land preparation and processing (S9) is genuine local wisdom so that it can be disseminated widely to farmers so that it continues to be implemented.
2. Procurement of seeds and seeding (S6) is local wisdom, but if it is added with the presence of technology in adding ecosystem functions, then the S6 can be developed into S9.
3. Planting (S5) does not include local wisdom, the S5 can have the potential as local wisdom if added ways to increase the prosperity of the population and the function of its ecosystem.
4. Fertilization (S9) is genuine local wisdom so that it can be disseminated to farmers so that it continues to be implemented.
5. Plant maintenance (S9) is genuine local wisdom so that local wisdom can be disseminated to farmers so that it continues to be implemented.
6. Harvest (S4) does not include local wisdom because it is still far from adding to the prosperity of the population and the function of its ecosystem.
7. Post-harvest (S4) does not include local wisdom because it is still far from adding to the prosperity of the population and its ecosystem functions.

At the stages/processes of the Lebak swamp rice farming process which is genuine local wisdom (S9), namely the stage of land processing, fertilization and plant maintenance, the local wisdom can still be carried out and carried out by rice farmers because farmers can still maintain existing local wisdom by continuing to practice traditions that have been around for generations. At the stage/process of Lebak swamp rice farming which is local wisdom (S6) but can be developed into genuine local wisdom (S9), namely the seed procurement and sowing stage, this local wisdom needs to be added with the presence of technology in order to add ecosystem functions that can increase the value of environmental factors or land where lebak swamp rice is farmed. This local wisdom (S6) can be said to be good but needs to be added with technology that allows additions to ecosystem functions so that local wisdom can play a positive role in increasing the income of Lebak swamp rice farmers.

At the stages/processes of the Lebak swamp rice farming process which is not local wisdom (S5) but can potentially become local wisdom, namely the planting stage, if local wisdom is added a method or solution is found in order to increase the prosperity of the community, namely by increasing farmers' income, it can potentially become local wisdom. (S6) and increase the function of the ecosystem, namely by increasing the value of the environment or land where lebak swamp rice is farmed, it can potentially become local wisdom (S8). In the stages/processes of Lebak swamp rice farming which are not local wisdom (S4), namely the harvest and post-harvest stages, the local wisdom can be said to be still far from being used as local wisdom that has positive value for farmers. It is necessary to have a technology that is able to increase the prosperity of the community in the form of increasing farmers' income and improving the function of the ecosystem in the form of increasing the value of the environment or land where the Lebak swamp rice is farmed. The stages/processes that are not local wisdom (S4), if added with technology, can become local wisdom that can be carried out by swamp rice

### **3.9 Farmers**

From the 60 respondents in this study, it can be seen that the local wisdom carried out by farmers in the Keramasan Village starts from local wisdom in land preparation and processing, namely farmers still use traditional tools such as hoes, machetes or sickles, local wisdom in procuring seeds and hatcheries, namely farmers still using seeds from the

previous harvest, local wisdom in fertilization, namely using manure and local wisdom in plant maintenance, namely farmers still using scarecrows and for cleaning weeds using machetes or sickles. The suggestions given in this research are: For farmers in the Keramasan Sub-district to be able to propose to the village government for tractor and combine harvester for lebak swamp rice farming in order to facilitate agricultural activities.

#### IV. Conclusion

The results of this study indicate that the majority of the community still maintains local wisdom of rice management in the Lebak wetlands, especially in cultivation. Local wisdom of farmers in managing rice crops includes seed procurement, planting, harvesting, and operations post-harvest. Local wisdom in procuring seeds is that farmers still use the seeds from the previous harvest, borrow and use the planting and seedling system. Local wisdom about harvesting uses simple tools such as sickles and machetes. Finally, it is post-harvest local wisdom for farmers to sell their harvests directly to middlemen who come to their land during the harvest process.

#### References

- Ade, V., and Affandi, Idrus. (2016). Implementation of Local Wisdom Values in Developing Citizenship Skills (Analytical Descriptive Study of the Talang Mamak Community, Rakit Kulim District, Indragiri Hulu Regency, Riau Province). *Journal of Social Science Education*. Vol. 25. No. 1.
- Adiwilaga, A. (1993). *Farming Science*. Bandung: Alumni
- Alfian, Magdalia. (2013). The Potential of Local Wisdom in the Formation of Identity and National Character. *Proceedings of The 5th International Conference on Indonesian Studies: Ethnicity and Globalization*. Jakarta: FIPB UI.
- Alwi, M., and Tapakrisnanto, C. (2017). *Potential and Characteristics of Lebak Swamp Land*. Center for Research and Development of Agricultural Land Resources.
- Amir, Fadhilah. (2013). *Local Wisdom in Shaping Local Food Power*. Jakarta: Uin
- Arbi, M and Junaidi, Y. (2021). Adaptation Strategy for Wetland Rice Farmers (Sub Optimal) in the Covid-19 Pandemic Era in Keramasan Village, Kertapati District, Palembang City. *SEA Journal*. 10(02):50-62
- Aulia, Tia OS and AH Dharmawan. (2010). Local Wisdom in Water Resources Management in Kuta Village. *Transdisciplinary Journal of Sociology, Communication, and Human Ecology*
- Aulia, TOS, and Dharmawan, AH (2010). Local Wisdom in Water Resources Management in Kuta Village. *Transdisciplinary Journal of Sociology, Communication, and Human Ecology*.
- Avianti, A., and Sihaloho, M. The Role of Child Labor in the Small Slipper Industry on Household Income and Their Welfare in Parakan Village, Ciomas District, Bogor Regency, West Java. *Journal of Rural Sociology*. pp : 10-25.
- Hasyim, Hasman and Iskandar Muda. (2019). Effects of Local Wisdom in The Form of Planting Prayer in The Regional Development on Rice Paddy Farmers Revenue in Indonesia. *International Journal of Scientific & Technology Research*. Vol. 8
- Junaedi, D and F. Salistia. (2020). The Impact of the Covid-19 Pandemic on the Capital Market in Indonesia: A Case Study of the Composite Stock Index (IHSG). *Journal of Islamic Finance and Business Economics*. 2(2): 111-138.
- Khairullah, I. and Isdijanto Ar-Riza. (2017). *Local Wisdom of Lebak Swamp Farmers*.



Jakarta: IAARD Press

- Mulyani, A. and Muhrizal Sarwani. (2013). Characteristics and Potential of Sub-Optimal Land for Agricultural Development in Indonesia. Bogor : Center for Research and Development of Agricultural Resources
- Nakornthap, S. (1996). Report of the Study on Patterns of Process in Promoting Teacher and School Participation for Prevention and Solution of Problems Concerning Child Labor in Thailand. Journal of Research on Humanities Information Study
- Ningrum, P. A., et al. (2020). The Potential of Poverty in the City of Palangka Raya: Study SMIs Affected Pandemic Covid 19. Budapest International Research and Critics Institute-Journal (BIRCI-Journal) Volume 3, No 3, Page: 1626-1634
- Noor, M. (2007). Rawa Lebak: Ecology, Utilization and Development. Jakarta : PT Raja Grafindo Persada
- Pesurnay, Althien Jhon. (2018). Local Wisdom in a New Paradigm: Applying System Theory to the Study of Local Culture in Indonesia. IOP Conference Series : Earth and Environmental Science
- Phahlevi, R. (2013). Factors Affecting the Income of Wetland Rice Farmers (Sub Optimal) in Palembang City. Undergraduate Thesis. Agribusiness Study Program. Faculty of Agriculture. Sriwijaya University. Indralaya.
- Retiwiranti, Pure. (2018). Analysis of the Role of the Creative Economy in Society in Increasing Household Income Through Cultivation of Biopharmaceutical Crops in an Islamic Economic Perspective. Thesis. Raden Intan State Islamic University Lampung
- Ridwan, M., A. Fatchan and IK Astina. (2016). The Potential of North Toraja Tourism Objects Based on Local Wisdom as a Source of Tourism Geography Material. Journal of Education. Vol. 1. No. 1
- Saleh, A., Mujahiddin. (2020). Challenges and Opportunities for Community Empowerment Practices in Indonesia during the Covid-19 Pandemic through Strengthening the Role of Higher Education. Budapest International Research and Critics Institute-Journal (BIRCI-Journal). Volume 3, No 2, Page: 1105-1113.
- Sartini. (2004). Exploring the Local Wisdom of the Archipelago A Study of Philosophy. Journal of Philosophy. No. 2
- Sibarani, R. (2013). Character Building Based on Local Wisdom. <https://www.museum.library-nias.org/2013/02/formation-character-based-local-wisdom.html>. 112. [Online]. Retrieved December 03, 2002
- Sihombing, E. H., Nasib. (2020). The Decision of Choosing Course in the Era of Covid 19 through the Telemarketing Program, Personal Selling and College Image. Budapest International Research and Critics Institute-Journal (BIRCI-Journal) Volume 3, No. 4, Page: 2843-2850.
- Subagyo, H. (2006). Characteristics and Management of Swamplands. Bogor : Center for Research and Development of Agricultural Resources
- Suwignyo, Rujito Agus. (2007). Resistance of Rice Plants to Submerged Conditions: Understanding of Physiological Characteristics to Obtain Tolerant Rice Cultivars in Lebak Swamp Land. Western Indonesia Regional Science Congress. Palembang
- Task Force for Handling Covid-19. (2019). Latest Information Regarding Covid-19. <https://covid19.go.id> (Online). Accessed on 04 March 2021.
- Wisnumurti, OAAG (2010). Managing the Value of Local Wisdom in Realizing Religious Harmony. Korpri Welfare Foundation Korpri Bali Province : Medion Technocentra