

Recommended Model of Local Wisdom Practices in Rice Farming that Can Support Regional Food Security in PulauSapi Village, Malinau, North Kalimantan

Afri ST Padan¹, Budi Setiawan², Aminudin Afandhi³, Bagyo Yanuwidi⁴

University of Brawijaya

Abstract: *The potential of wetland rice in Malinau District is important to manage so that the results are optimal. Increasing rice production and productivity in addition to extensification can also be done with intensification programs. The production of lowland rice is inseparable from various factors such as farming technology, the availability of superior seeds, the carrying capacity of irrigation facilities and what is equally important is the way to cultivate the community. A good combination between modern agricultural technology and the noble values of locality must be formulated appropriately so that agricultural progress and natural sustainability can be realized in a balanced and sustainable manner. The purpose of this study is to find out the supporting factors and inhibit the practice of local wisdom, and a model for recommending the practice of local wisdom in cultivating lowland rice that can support regional food security in rice cultivation. This research was conducted with qualitative methods so that researchers were able to fully and comprehensively describe the phenomenon under study. So that in the end it can produce meaningful and useful findings for the development of rice paddy agriculture and food security in the Malinau District area. The conclusions of this study are 1) The internal supporting factor of the practice of local wisdom in cultivating lowland rice is the willingness of the community to continue to preserve the rice farming practices in a friendly manner to the ecosystem by limiting the use of chemical inputs to plants and mechanization of land management. 2) External supporting factors of the practice of local wisdom in cultivating lowland rice are government assistance in the form of farm facilities and infrastructure as well as extension support for farmers. 3) Inhibiting factors for the practice of local wisdom in cultivating lowland rice also consists of internal factors and external factors, namely the internal inhibiting factor of the practice of local wisdom in cultivating wetland rice is the number of community members who have no longer applied felibal (mutual cooperation) in farming. The external inhibiting factor of the practice of local wisdom in cultivating wetland rice is the lack of agricultural labor in the village of PulauSapi which has an effect on the higher value of labor wages and added to the absence of a policy on regulating wages for agricultural labor. 4) Related to the sustainability of local wisdom practices in farming in supporting food security can be developed by taking into account the models found in this research.*

Keywords: Local wisdom, Food Security

1. Introduction

The development of the agricultural sector in North Kalimantan, especially Malinau Regency, must prioritize the preservation of potential local agricultural commodities, especially rice fields which are local potential with good quality and able to maintain food availability for the community. The lowland rice farming system that promotes local social and cultural values as an integrated system in the process of lowland rice farming. Santoso (2006) explains that local wisdom is a decisive element in the success of managing community resources and natural resources. However the progress of the agricultural system still has to preserve and preserve the values of local wisdom for the sake of cultural and natural preservation. Various studies on the importance of local wisdom in preserving ecosystems, along with the strengthening of the local economy and the progress of human life. However, there have not been many studies on local wisdom in cultivating lowland rice to support the realization of regional food security.

This study focuses on the uniqueness of wetland rice in the village of PulauSapiMentarang District, Malinau District where agriculture in the village is carried out with values and farming culture that have developed from generation to generation from generation to generation. Production of

paddy rice with local seeds has good quality rice and good economic value, and is able to meet the food needs of the community, so that it can contribute to the realization of regional food security. Therefore, it is very important to note to optimize the practice of local wisdom in cultivating wetland rice, so that it continues to contribute positively to regional food security.

The exploitation of rice farming which is integrated with local wisdom in rice cultivation is a phenomenon that raises interest as well as assumptions that require answers through in-depth research. Food agriculture tends to prioritize economic value from its production. While local wisdom in general is perceived as a traditional way that is considered inappropriate to be part of a strategy to improve agricultural quality and productivity. However, based on several results of previous studies such as those conducted by Santoso (2006), Widodo and Hastuti (2017), and Muhammad (2017) provide the foundation that local wisdom can continue to be developed to encourage agricultural progress. Local wisdom in cultivating lowland rice that is able to maintain the preservation of local seeds that have superior quality and good economic value should be developed so as to answer the empty space in the strategy of intensifying lowland rice farming. At present the availability of paddy fields over time continues to be increasingly limited. However, the limitation of paddy fields does not hamper the production of paddy rice

Volume 8 Issue 7, July 2019

www.ijsr.net

Licensed Under Creative Commons Attribution CC BY

in the village of PulauSapiMentarang District, Malinau District, where the fighting system is based on local wisdom values. The purpose of this study is to find out the supporting factors and inhibit the practice of local wisdom, and a model for recommending the practice of local wisdom in cultivating lowland rice that can support regional food security in rice cultivation.

2. Methodology

All of these aspects were studied in this dissertation study, through a qualitative research approach. Data collection in this study is carried out through observation or observation, interviews and document tracking. In the process of data collection, the human approach between researchers and data sources became the main instrument in this study. By using informants as research subjects, data collection refers to the assumption that data sources can respond in the form of signs, adjustments, and responses to the environment.

The collected data were analyzed using interactive analysis model data analysis techniques from Miles, Huberman, and Saldana (2014), namely the analytical method used for the analysis process of data obtained in the field and continuous reciprocity during the research. Researchers combine interactively and circularly between data collection, data condensation, data display, and then draw conclusions and verification.

3. Results

Supporting and Inhibiting Factors of Local Wisdom and Matching Practices Rice Field Planting

The implementation of an activity or the application of a value in practice will find the factors that influence it. The factors that influence an activity can be either internal factors or external factors. Both types of factors become a continuous unity in influencing the success of an activity or activity. Likewise with the practice of local wisdom in cultivating lowland rice in the MentarangSubdistrict, Malinau Regency. Based on the results of the research as described in the previous section, it is known that there are supporting and inhibiting factors, both derived from internal factors and external factors.

Internal factors

Internal factors consist of supporting factors and inhibiting factors. Internal supporting factor is the willingness of the community to maintain planting local superior seeds. Local rice seedlings are easier to maintain, have good growth and taste good. Then also still maintained the procedures for farming in local wisdom. People from generation to generation still teach how to cultivate what they believe to be their ancestral heritage. Many people still do not want to use chemical fertilizers. The community feels that their land is fertile.

In addition, other internal supporting factors are farmers' trust in certain types of local rice that have advantages over seeds imported from outside the region. Local seed rice is more resistant to pest attacks, for example rice sia (red rice).

Rice production is also not affected by the spacing. While from the superiority, there are other types of rice seeds, namely rice and rice, but this type is weak in terms of production.

While the factors that become a barrier to the practice of local wisdom in cultivating lowland rice are the many people who no longer want to apply felibal or mutual cooperation in farming. This happens because they prefer to pay people to work.

According to their calculations, if they do felibal (mutual cooperation) more costs must be spent providing food according to felibal rules. Then another reason is that at present those who become farmers are mostly not only fully farmers but have other jobs who eventually do not have time to do felibal or mutual cooperation in farming. They prefer a paid system that is paying people to work on planting or harvesting their paddy. It can also be said that the lack of farmer regeneration has resulted in farmers now having other jobs, so the time is not entirely to take care of agriculture. In addition, the practice of mutual cooperation is waning due to the development of new technologies in agriculture such as hand tractors. The use of modern tools makes it easy to work so that it also suppresses the costs incurred. For example work completed with traditional tools takes one month to be completed in one week with modern machines, including a comparison of the number of workers needed, of course the use of modern machinery requires fewer workers. So, such considerations are what encourage people to start leaving to work in mutual cooperation. Economic motives also triggered people to tend not to work together, changing into a salaried system. It seems that this is a trivial matter, but if it is thought deeply in the long term, it can have an impact on the waning of local wisdom. Then it can also spread to the problem of labor wages.

Another inhibiting factor is the challenge of harvest time or the relatively longer age of local rice plants. However, now the Malinau District Government has begun to develop superior local rice seeds with shorter crop ages. This means that the values of local wisdom are not an obstacle but the needs of the harvest period (age of rice plants) are still relatively long which makes the farmers think of continuing to plant local rice paddy seeds. The production of wetland rice is very much determined by the seeds that are resistant to pests and diseases and are suitable for the conditions of the land, so that they can adjust to local conditions and conditions. The superior assistance from the government so far has been that after being planted has failed due to illness, the new superior rice has not been able to adjust to the situation and conditions of the land and local climate and the influence of the lack of care for the rice paddy plants. Thus, a solution is needed for the availability of superior seeds but does not rule out local rice seeds. This local wetland seed because it has a special good toughness to the disease and the taste is good, it must be strived to be preserved and developed to get superior seeds that have a shorter planting age. The shorter the age of the plant, the more it supports to increase the productivity of rice plants in order to realize food security.

External factors

As with internal factors, external factors also have supporting and inhibiting factors. Supporting factors from the external are the existence of assistance from the government in the form of farming facilities and infrastructure as well as PPL support that accompanies farmers. The existence of PPL is very helpful for farmers in increasing the processing of their agricultural land. Knowledge of the PPL they received as long as it was deemed suitable to be applied in their area. While for things that are deemed less suitable are not applied. This is the attitude that must be maintained so that local wisdom to cultivate paddy rice remains sustainable.

Regarding the planting season, the local government has made a calendar that is disseminated to the community, so that the community has a clear benchmark to determine the beginning of the planting season. The planting season calendar published by the Agriculture Service is a government policy in regulating superior and superior paddy rice planting seasons. KATAM was distributed through farmer groups in Malinau District, among others, in North Malinau District, Malinau City District, West Malinau District, South Malinau District and Mentarang District, especially in Pulau Sapi Village.

In addition to assistance, the government also provides motivation to farmers to maintain and preserve local wisdom in agriculture, the preservation of local wisdom means the sustainability of their agriculture. That is, they will continue to enjoy agricultural products in the long run and can even be passed on to the next generation. The government also recommends that the planting period be adjusted to the season, because if the season goes wrong it will face pests. So, land clearing must be in accordance with the planting season, so that it can produce well and reduce the risk of pest problems.

Other external support is given by the Church Management Board, which is a group of prayer group leaders. There is a belief that firstfruits (the first harvest selected the best) must be prayed together in the church. After a prayer ritual is held together in the church, then the official harvest season can be done. The community coordinated with the church administrators to carry out prayer rituals for firstfruits at each start of the harvest season. The hope of the ritual of praying for the firstfruits is to obtain blessings on the harvest of the season. So, there is a continuity between agricultural management and religion. This wisdom must be maintained and preserved, so that there is a connection between worldly management and the spiritual intelligence of the community.

Whereas what is considered by the public as a deterrent factor that comes from external factors is the absence of written rules about regulating labor wage prices. As a result of the absence of such formal rules in the community there are different remuneration depending on how many people are asked to work. Wage order has occurred when there are rules from the Church. The motivation of the church is to fill the church's cash. The wage standard has been carried out for several years, but now it is no longer valid. The importance of the salary-setting rules is related to the

increasingly abandoned cooperation system that is replaced by a salary system.

The inhibiting factor that comes from nature is the climate challenge that is starting to be difficult to know because the signs that are usually recognized by the community have begun to be invalid. The uncertain climate causes poor plants. For example also because of the high rainfall will cause the air humidity to be low so it is very supportive of the development of certain fungi and bacteria disrupting the planting of wetland rice which will become an obstacle to the ongoing planting season. Likewise with the development of pests and diseases. The community is beginning to be interested in using chemical drugs to overcome pests and diseases because this is understandable because pests and diseases are no longer easy to control naturally and due to lost and disconnected information on local knowledge using vegetable pesticides whose material is taken from the forest, for example tebutlet fruit and laboriman which is used to control the attack of rice pest.

The obstacle that comes from the local government is the limited budget for the procurement of agricultural extension workers (PPL). As a result, the placement of agricultural extension agents is not evenly distributed in every village. Although the regional government has sought to fulfill PPL through a system of honorary employees. The problem that arises is the difference in the qualifications of PPLs with different skill levels and skills so that the influence in providing counseling also varies, some are able to transfer the technology of agriculture well and some are not maximized in how it works because it has not yet the function of the UPTD of the Agricultural Extension Office in each sub-district especially the BPP in Mentarang Subdistrict with the legality was strengthened through a decree from the Malinau District Head. Of course this condition must be a serious concern of the regional government as part of a program to improve regional food security.

Based on the discussion above, it is known that the supporting and inhibiting factors in the practice of local wisdom in cultivating lowland rice come from internal factors and external factors. These factors must be followed up to maximize efforts to realize regional food security. Supporting factors must be managed better so that their performance becomes optimal. While for inhibiting factors must be addressed with the right solution so that the impact can be minimized or even eliminated.

The Model of Local Wisdom Practices in Rice Farming that Can Support Regional Food Security

The practice of local wisdom in cultivating lowland rice that has been applied so far in Mentarang Subdistrict, Malinau Regency has become a potential that must get the attention of the regional government. The Malinau District Government in its efforts to realize regional food security must be based on its potential, both agricultural potential and the potential of social or cultural values that become the spirit of the life of local communities. Farming activities cannot be separated from the values that are believed and preserved by the community in developing their lives.

Fulfillment of food is one dimension of the preservation of an orderly, peaceful, healthy and harmonious society. The community has the power to build other dimensions of life if the need for food has been fulfilled. Therefore, the link between agricultural development efforts and social values is a unity that becomes a potential advantage in realizing regional food security.

The practice of local wisdom in cultivating lowland rice in MentarangSubdistrict, Malinau Regency can be described in a model based on empirical data that has been obtained from research in the field. Then the research results model must be constructed into an effective and easy to implement

model so that it produces optimally. The model found in the field is actually already running but there are some parts that need corrective action so that the model can work more effectively. The design of the recommendation model can be built from the data based on the three research focuses discussed earlier. Various dimensions and elements about the practice of local wisdom in cultivating lowland rice have been presented and reviewed in depth, so they can be mixed into a model formula. All of that is connected simultaneously as a model for realizing food security in Malinau District.

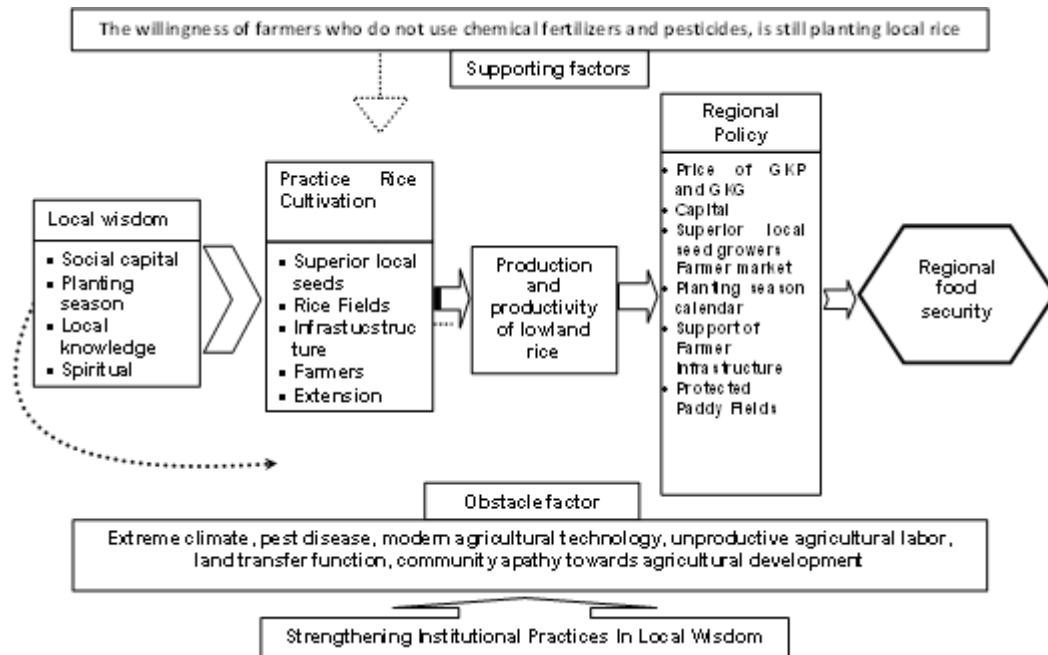


Figure 1: Recommended Model of Local Wisdom Practices in Planting Rice Paddy to Support Regional Food Security in Malinau District

Figure 1 shows that the practice model of growing rice in MentarangSubdistrict, Malinau District is processed in a framework shaded by local wisdom. Lowland rice farming related to the selection of superior seeds, land management, and the use of agricultural advice cannot be separated from the direction of local values. The selection of rice seedlings uses locally superior seeds that are indeed native to Malinau. These seeds are more resistant to diseases and climate change. Generally, farmers still plant local rice such as paddy (red rice), because based on experience they have many tillers and the results are good. But the time to work to produce the time is quite long. The selection of local seeds is also influenced by the culture of planting local types of rice caused by farmers' preference for some local types of rice in terms of taste, the level of production and adaptability to the environment is very good. Then the land processing process is also carried out with stages and traditional methods combined with modern agricultural technology. Processing this agricultural land is closely related to the farming facilities used, the Mentarang community has a wealth of agricultural tools that are very environmentally friendly and are still used by the community today.

The way of working practiced by the community in farming is based on shared values that make it easy to cultivate rice.

Starting from the process of planting to harvesting, the community runs a joint work called "felibal", which is a way of working together. The work is carried out jointly with the rotation system. This method of work is without payment or wages, except for those who cannot attend to work together, then they must pay by paying other workers.

The findings show good direction for the preservation of local wisdom in farming, there are several supporting factors such as the attitude of the community who are willing to stick to natural ways of maintaining their agriculture. The use of chemical drugs for fertilizers and treatment to prevent pests and diseases is still limited. Then there is support from the local government to develop stronger local seedlings and strive for shorter planting times. This supporting factor is certainly a capital for the community and local government to continue to preserve local wisdom in the development of environmentally friendly lowland rice farming and support optimal rice production.

However, there were also obstacles in the implementation of local wisdom practices in farming. Lately, people face problems that make brands start to worry. The concern of the farming community is triggered by the increasing diversity of pests and diseases of rice plants in the region.

People who are still trying to use natural methods to overcome them begin to falter their minds to use chemical drugs. The assumption used is rationality in rice production. If natural methods are no longer effective, then rice production will decline due to pests and diseases that continue to interfere. This condition triggered the anxiety of the people who began trying to use fertilizers and chemical drugs. Of course this rational thinking pattern is driven by the motivation to get good rice production so that they do not experience losses. An apathetic attitude which is another inhibiting factor is that there is a change in behavior in working in mutual cooperation, many farmers nowadays do not fully take the time to farm, but have side jobs or even agriculture as a side activity. As a result they do not have much time to work on their own agriculture. They prefer to pay other people as workers. Changes in work behavior if not immediately anticipated, of course, will gradually shift the values of togetherness in farming into modern ways that tend to be individualistic. Changes in social values in the life of agriculture in the final phase will eliminate the practice of local wisdom in cultivating lowland rice. In fact, it can erode the culture of the social life of the community, and eliminate the distinctive characteristics of the LundayehDayak community in MentarangSubdistrict, which has always had a family spirit, crystallization from a mutual cooperation culture.

Therefore, the role of regional government is needed institutionally to strengthen the practice of local wisdom in cultivating lowland rice. The Malinau District Government must make a formal effort to maintain the practices of local wisdom, especially in cultivating lowland rice. The efforts made by the regional government must be directed at strengthening local wisdom in the community, with the specificity of guardians of practices in cultivating lowland rice, especially in handling inhibiting factors that have begun to emerge. Handling inhibiting factors as early as possible is very appropriate, if left too long it will add complexity in an effort to maintain regional food security.

Government support can also take the form of guidance through regional organizational organizations (OPD) that handle agriculture. Institution of farmers in farmer groups is important to be formed and empowered to facilitate the formation, distribution of information and access to sustainable agricultural technology. The benefits of the existence of this farmer group also facilitate a systematic, more organized way of working. Channels that can be utilized from the existence of this farmer group start from the implementation of assistance through counseling on cultivation, farmer management / improvement, farming / marketing analysis or post-harvest handling and community empowerment to improve their welfare through sustainable modern farming.

Institutional support that must be sought by the government must also be supported by policies that regulate the practice of local wisdom in cultivating lowland rice. At this time what has been done is the establishment of a planting season calendar in Malinau District, which requires the planting of local rice. However, in its implementation, it still requires socialization to strengthen people's perceptions of the benefits of preserving the culture of local wisdom practices

in cultivating lowland rice. In the future, a lot of policies are needed to regulate the preservation of local wisdom in farming and the continuity must be maintained between policies implemented from the district, sub-district and village levels.

If the regional government is able to carry out institutional strengthening measures, the practice of cultivating wetland rice based on local wisdom in the community of Lundayeh in MentarangSubdistrict will be maintained and become a local potential to increase the production of paddy rice in Malinau District. Increasing the productivity of rice is the main bridge to realize regional food security. Rice is the main food source in this region so that if the main source of production can be optimized, then the regional rice procurement (RASDA) which is the leading agricultural program in the GERDEMA era can be realized. If food sources become the main pillar of development in the regions, production has been maintained, other food sources can be harmonized with productivity to maintain regional food security. The success of the practice of local wisdom planting rice fields, can be a mirror of the success of local wisdom in the development of other agricultural commodities. If the success model can be applied to other agricultural commodities, the achievement of regional food security is easier to do.

4. Conclusions

Some conclusions from this study are 1) Internal supporting factors of the practice of local wisdom in cultivating wetland rice are the willingness of the community to continue to preserve the rice farming practices in a manner that is friendly to ecosystems by limiting the use of chemical inputs to plants and mechanization of land management. 2) External supporting factors from the practice of local wisdom in cultivating wetland rice are Government assistance in the form of farm facilities and infrastructure as well as extension support for farmers. 3) Inhibiting factors in the practice of local wisdom in cultivating lowland rice also consists of internal factors and external factors, namely: The internal inhibiting factor of the practice of local wisdom in cultivating lowland rice is the large number of community members who have no longer implemented felibal (mutual cooperation) farming. The external inhibiting factor of the practice of local wisdom in cultivating wetland rice is the lack of agricultural labor in the village of PulauSapi which has an effect on the higher value of labor wages and added to the absence of a policy on regulating wages for agricultural labor. 4) Related to the sustainability of local wisdom practices in farming in supporting food security can be developed by taking into account the models found in this research.

5. Suggestions

Local governments must collaborate with farmer groups and the Church to determine labor wage regulations in the agricultural sector so that public unrest can be resolved soon. Then it is also expected to have an impact on the continued implementation of felibal in agricultural work. Local governments must also improve the quality of agricultural extension workers (PPL) through strengthening budget

support and increasing their capacity and expertise to better guide farming communities in farming, so that they can increase the productivity of paddy rice and contribute positively to the realization of regional food security. The farming community in Mentarang Subdistrict must continue to maintain the inheritance of existing local wisdom in order to remain sustainable. Lowland rice farming developed must be kept in control of local wisdom and supported by modern agricultural knowledge and technology. The uniqueness of lowland rice farming with local wisdom can also be developed as a local economic potential for improving their welfare. The Malinau District Government must formally regulate the empowerment and preservation of local wisdom to grow rice. Then the regulation must be pushed to the village level so that each village also has regulations that regulate the preservation and empowerment of local wisdom.

References

- [1] Hanafie, Rita, 2010. "Penyediaan Pangan yang Aman dan Berkelanjutan Guna Mendukung Tercapainya Ketahanan Pangan". Dalam *J-SEP*, Vol. 4 No. 3 November 2010 38.
- [2] Hassanei, Neva and Jack. R. Kloppenburg, 1995. "Where The Grass Grows Again: Knowledge Exchange in The Sustainable Agriculture Movement". In *Rural Sociological Society*, Vol. 60, No.4, winter.
- [3] Hasyim, Hasman, 2007. Analisis Faktor-Faktor yang Mempengaruhi Ketersediaan Beras di Sumatera Utara. Thesis pada Sekolah Pasca Sarjana, Universitas Sumatera Utara, Medan.
- [4] Hariadi, Sunarru Samsi dan Diah Fitria Widhiningsih, 2015. "Farmer Group Role On Adoption Of Local Wisdom Innovation To support Food Self-Sufficiency". In *International Journal of Humanities and Social Science Invention ISSN (Online): 2319 – 7722, ISSN (Print): 2319 – 7714 Volume 4 Issue 10*.
- [5] Hidrawati, *et al.*, 2016. "Local Wisdom of Sustainable Food Security at Binongko Island: A Study On Community Adaptation Strategies at Coastal Area and Small Islands". In *Food and Nutrition Science - An International Journal Volume 1. ISSN: 2367-9018*.
- [6] Miles, Matthew B.; dan A. Michael Huberman; dan Johnny Saldana; 2014. *Qualitative Data Analysis: A Methods of Sourcebook*. Singapore: Sage Publications Inc.