Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 5846 – 5856
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.5194

Readiness of Agricultural Human Resources Based on Lokal Wisdom Lumbung Mataraman

Rangga Adi Wijaya[1], Christantius Dwiatmaja[2], Albert Kriestian Novi Adi Nugraha[3], Priyo Hari Adi[4]

Abstract

The agricultural sector faces challenge of increasing its attractiveness to ensure the sustainability of agricultural human resources. The sustainability model of agricultural human resources emphasizes the resources owned by farmers to develop agricultural businesses into a more realistic approach. The contribution of this study is the development of the Lumbung Mataraman (LM) model as a local wisdom-based HR readiness model that anticipates limitations in the agricultural sector. LM is a local wisdom that has a set of Javanese cultural values to obtain optimal agricultural yields but also at the same time preserves nature. The intervention was carried out as a catalyst for the readiness of agricultural human resources to achieve food self-sufficiency. This research involved farmer groups in the Wonogiri and Sleman districts of Indonesia. The findings show that LM is local wisdom contributes to improving the quality of agricultural human resources in terms of skills, creativity, innovation, and local culture.

Keywords: *Local Wisdom, Lumbung Mataraman, Organizational Culture, Human Resources Sustainability, Agricultural Sector.*

Introduction

Agriculture faces the challenges of food security and safety, which are triggered by the use of conventional agricultural techniques and low efficiency of human resources (Ronaghi & Forouharfar, 2020). Agricultural development is expected to contribute to positive economic growth through productivity, value-added products, sustainable investment, improved labor markets, and improved quality of human resources (Renstra, 2021). The agricultural sector is expected to continue to develop to meet food needs by aiming to improve human resources through sustainability (Nurida et al., 2024). However, the agricultural sector faces the prominent problem of low-quality of human resources (BPS, 2018). Septeri (2023), stated that one of the successes in achieving sustainable agricultural development is determined by qualified human resources committed to developing the agricultural sector.

In addition, the agricultural sector must be sustainable in terms of human resource availability. A decreasing number of farmers threaten the sustainability of agricultural human resources. The aging farming population is a global challenge as young people are being less motivated to take over the family farm (Borda et al., 2023). The results of the complete enumeration of the 2023 agricultural census show that the number of millennial farmers aged 19–39 years is 6,183,009, or approximately 21.93 percent of farmers in Indonesia (BPS, 2023). The interest of young workers in the agricultural sector decline due to unfavorable image of the agricultural sector less prestigious, high risk, and low level of stability guarantee (Susilowati, 2016). Therefore, agricultural human resources must prepare to increase capacity in the form of knowledge, attitudes, mindset changes, and readiness of farmers. Younger generations play an essential role in the economic recovery of agricultural communities. This requires an understanding of system dynamics and interactions, especially in agricultural practices, as well as innovative ways to adapt to changing and diverse environments by building food system resilience and sustainability (Szabo et al., 2021). To further develop the agricultural sector, it is crucial to continue supporting farmer-friendly policies,invest in modern agricultural technologies, and promote products in both domestic and international markets, so the region

[1] Doctoral student in Management, Faculty of Economics and Business, Satya Wacana Christian University, Indonesia, Email: 922019015@student.uksw.edu
[2] Professor, Faculty of Economics and Business, Satya Wacana Christian University, Indonesia, Email: christantius.dwiatmaja@uksw.edu.
[3] Associate Professor, Faculty of Economics and Business, Satya Wacana Christian University, Indonesia, Email: albert.kriestian@uksw.edu*.
[4] Associate Professor, Faculty of Economics and Business, Satya Wacana Christian University, Indonesia, Email: priyo.adi@uksw.edu

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 5846 – 5856
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.5194

can ensure the long-term sustainability and prosperity of agricultural industry (Fadli, 2024).

An approach to increase the productivity and sustainability of the agricultural sector is to use local wisdom. Local wisdom emphasizes the use of cultural values and resources to guide the attitudes and behavior of a community. Local wisdom is part of a community that can be learned and practiced to provide benefits to the community (Shamadiyah et al., 2018). Several studies have been conducted related to local wisdom in the agricultural sector such as the relationship between local wisdom Tuah Teng (Shamadiyah et al., 2018); local wisdom "Jamasan" (Kurniasari et al., 2018); local wisdom Tritangtu Sunda (Rusmana, 2017); and local wisdom "Buruan Sae" (Sukarno et al., 2022). However, studies on local wisdom in the agricultural sector associated with readiness and sustainability of human resources in agricultural sector are still limited.

This research focuses on local wisdom in the agricultural sector, namely Lumbung Mataraman (LM), which is based on Javanese cultural philosophy in Indonesia. LM is a rural food barn that aims to build food self-sufficiency by prioritizing local resources using the principle of sustainable agricultural development. Technically, LM is a program to revise the pattern of food expectations and support the production base through the optimization of home yards in an effort to alleviate poverty (Riawanti, 2017). LM is carried out using the concept of integrated agriculture, which is a combination of agriculture, animal husbandry, and fisheries in a land area (Astuti, 2023). Based on the literature review thus far, there is a lack of an agricultural HR readiness model based local wisdom.

This research was conducted with a focus on farmer groups in Sejati Village, Guwotirto Village, and Girikikis Village, Giriwoyo sub-district, Wonogiri Regency, Central Java Province, as well as in Triharjoro Village, Kapenewon Pandak Sub-District, Sleman Regency, Special Region of Yogyakarta. The Trukajaya Christian Foundation acts as an NGO that foster the farmer groups through a local wisdom-based HR readiness program. The research problem to be addressed is the development of a human resource readiness model for agriculture based on the LM's local wisdom. The research questions were derived from the the research problem as follows how is the internalization of the value, implementation and impact of Lumbung Mataraman for improving the readiness of Farmers' Human Resources?

Literature Review

Readiness of Human Resources

The main element of HR readiness is one's ability to adapt to change. HR readiness comprises three indicators: work competence, training adequacy, and technological competence (Asniati et al., 2019). HR readiness is the overall condition of individuals, which includes physical, mental, and experiential maturity so that they can carry out an activity or work activity (Susanti & Mulyoto, 2020). The agricultural HR readiness program is a farming entrepreneurship development program that involves young farmers in agriculture, animal husbandry, fisheries, plantations, forestry, corporations, and other stakeholders to create an independent, advanced, and sustainable agricultural with a positive impact on the region. The agricultural human resource readiness program needs to be prioritized, especially among millennial farmers who are considered able to keep up with the times and have greater opportunities than previous generations (Renstra, 2021). Improving the readiness of agricultural human resources needs to be deliberate, targeted, measurable, and implemented systematically. Collaboration and cooperation are required to accelerate agricultural human resource readiness. It needs to be systematically prepared through an agricultural human resource readiness program initiated by governmental and non-governmental institutions. The readiness of agricultural human resources requires a variety of stakeholders, including the government, universities, NGO, corporate companies, and other related institutions.

Organizational Culture

HR readiness cannot be separated from the basic aspects of community culture, namely rebuilding the community's system of ideas. The community's system of ideas, among others, is contained in the teachings and traditions passed down from generation to generation within the community. Local cultural values play a role in shaping community behavior (Mazid et al., 2020). Several studies linking the issue of HR readiness

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 5846 – 5856
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.5194

and local wisdom have been conducted in the context of government and business organizations, such as the Internalization of Pela Gandong Local Wisdom Values in Organizational Culture at General Hospitals in Ambon (Wattimena et al., 2021). Tradition-based Dalihan na Tolu local wisdom which is a model of maintaining roles in enhancing the cooperation of each role of the elements of life of the Toba Batak indigenous people (Nainggolan et al., 2023). Several studies on the role of local wisdom in the agricultural sector have been conducted in relation to food security. (Shamadiyah et al., 2018) described efforts to achieve food security for coastal communities using local wisdom, namely, the Tuah Teng fishing technique. Kurniasari (2018), examined the local agricultural wisdom of "Jamasan" carried out by the Samin tribe who do not sell their entire harvest and do not sell their agricultural land to outsiders of the Samin indigenous community. The local wisdom of Waiting for Mount Kudu Wareg, Kadeso, and Iriban is carried out by the community in Lerap Village to maintain togetherness to protect the environment, protect water sources, and utilize products from agricultural land (Setyowati et al., 2022). However, these studies do not specifically link the role of local wisdom with agricultural human resource readiness, which is a critical factor in achieving food security. Factors that increase productivity in the agricultural sector, such as technological innovation, infrastructure, and human resources, are the main drivers of agricultural development. Organizational change aims to improve and find ways to manage resources and improve the organization in terms of the performance, structure, policies, and regulations related to HR readiness. Understanding and internalizing the cultural values of an organization that runs well will be effective in influencing HR readiness.

Local Wisdom of Lumbung Mataraman

Lumbung Mataraman (LM) is a local wisdom-based program that utilizes a yard to provide food with the principles of food self-sufficiency, diversification based on local food sources, preservation of food genetic resources, and nursery gardens (Astuti, 2023). LM is an elaboration of integrated agriculture in the form of an agricultural corporation that has the main objective of reviving the economy of the surrounding community through the role of farmers to realize food self-sufficiency as well as the cultivation of local cultural values that become the actualization of the vision and mission of the LM. The principle of LM is *"Nandur opo sek dipangan, mangan opo sek ditandur"*, which means "plant what is eaten, eat what is planted" in forms "*Oyot, kayu, godong, kembang, woh, iwak, iwen, rojo koyo"* namely "Roots, wood, leaves, flowers, fruit, fish, poultry, large livestock". An approach to form the mindset is implemented through the development of demonstration plots as a place of learning (Rachman & Widodo, 2021), a method of agricultural extension to farmers, by making demonstration land, so that farmers can see and prove the results of the application of agricultural knowledge and skills demonstrated. In this case, hhe main objective of LM is to promote and preserve local values and Javanese traditions, while developing a creative and social economy for the local community and empowering the local economy through community-based economic activities, thus helping farmers increase their income.

Human Resource Readiness Model

One approach to address the issue of food access is through the LM program. LM is based on local wisdom and the resources owned by farming communities. In addition, LM is a grassroots effort towards food security that is expected to continue towards self-sufficiency and even food sovereignty. The value of working in LM is not only to obtain agricultural products, but also to preserve nature. The LM is a model for increasing human resource capacity, empowering the community, and anticipating regeneration problems in the agricultural sector. The basis for organizing LM is to understand and apply Javanese philosophical values to attitude and behavior. The LM is a system for economic security and food security in farmer groups to provide food that is evenly distributed and that can be produced to benefit the farming community. Therefore, LM requires interventions to increase the capacity of farmers' human resources through teaching and learning processes such as mentoring, counseling, and demonstration. Monitoring and evaluation activities are necessary to ensure that the program achieves the expected outcomes. The proposed research framework is illustrated in Figure 1.

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 5846 – 5856
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.5194

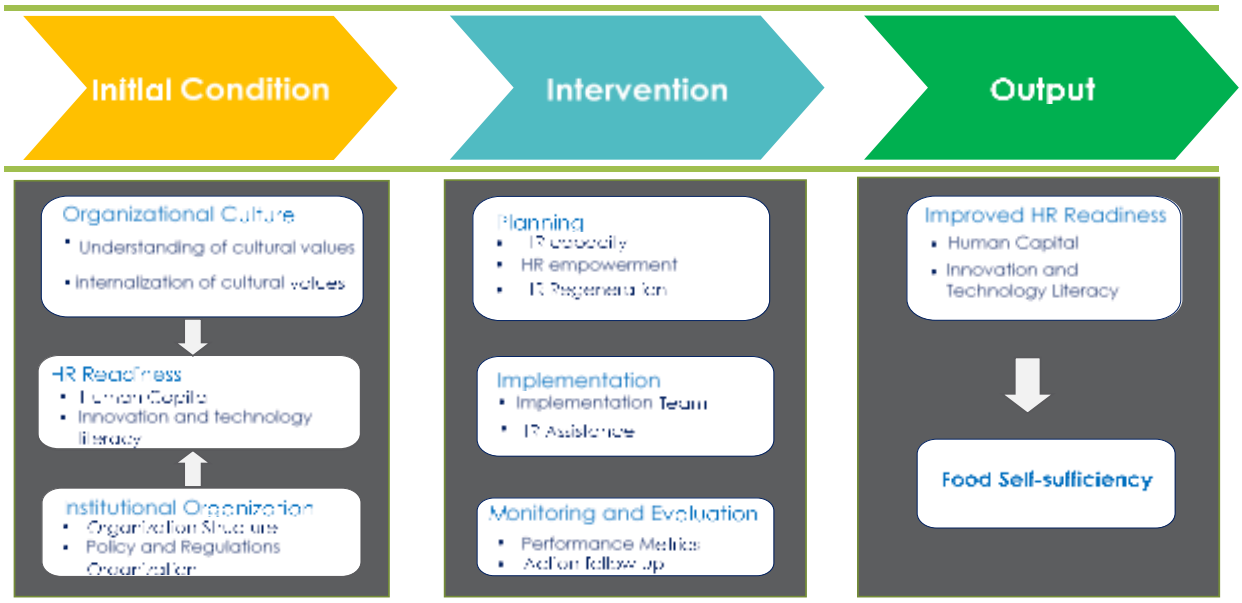

Figure 1. HR Readiness Model for Mataraman Barns Agriculture

Research Methodology

The qualitative empirical approach is conducted through a case study consisting of qualitative data collection activities through observation and *in-depth interviews*, as well as the use of documentation that can be used as additional information. The interview used in this study were semi-structured. The data collection period was from June 2023 to December 2023. This research was conducted in Sejati Village, Guwotirto Village, Girikikis Village in Central Java Province, and Triharjoro Village in Special Region of Yogyakarta, Indonesia. Eight key informants provided necessary data, as described in Table 1.

Table 1. Research Informants

Code	Position
A1	Program Manager
B1	Field Staff of Trukajaya Foundation in Wonogiri
B2	Field Staff of Trukajaya Foundation in Yogyakarta
C1	Chairman of Millennial Farmers of Sejati Village, Girinowo Sub-District
C2	Head of Guwotirto Village Women Farmers Group, Girinowo Sub-District
C3	Chairperson of the Women Farmers Group of Girikikis Village, Girinowo Sub-District
C4	Chairman of the Farmer Group Association of Triharjoro Village, Kapenewon Pandak Sub-District
D1	The initiator of Lumbung Mataraman

Source: primary data processed, 2024

Research Findings and Discussions

Organizational Culture

In the organizational culture of the farming community in Giriwoyo and Kapenewon Pandak sub-districts, there are Javanese cultural philosophical values that place farming as a way of life. Farming is a manifestation of the relationship between God and humans and returning to nature with gratitude. Farming activities

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 5846 – 5856
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.5194

ensure the fulfillment of the food needs of farmers and communities. This situation shows that farmers' human resources are realistic and optimize what God has given and are responsible for what God has given to humans. Thus, individuals can be considered members of society to play an active role in shaping and preserving their society (Rojabiyah et al., 2023). They started farming with a simple model for generations because of limited resources with the mere intention of surviving. The farming ethos that comes from the Javanese tribe's philosophical value is to return to nature "*Hemayu Hayuning Bawana*," an agricultural system that does not damage, harmonize, and balance natural rules. According to Source D1,

"Hamemayu Hayuning Bawono means the balanced relationship between humans and the universe. Javanese cultural spirituality feels obliged to beautify the beauty of the world; only this gives meaning to life. Hamemayu Hayuning Bawono is an effort to protect the safety of the world physically and mentally. In agriculture, it can be interpreted as integrated agriculture that must be promoted throughout the community, especially farmers, as an effort to preserve nature."

An understanding of cultural values already exists, but the practice is still not visible in carrying out these agricultural activities. The condition before LM was introduced, farmer groups in Giriwoyo and Kapenewon Pandak sub-districts conducted farming traditionally. However, agricultural processes use chemical fertilizers, and healthy and productive soil resources are key to the success of agricultural sustainability. The agricultural sector uses conventional methods and human labor with the help of simple agricultural tools. If agriculture only promotes land productivity and yields and without farmers' efforts to be in harmony with nature, it will cause damage to the ecosystem and end in environmental destruction.

HR Readiness

The trend indicates a low number of farming households and a decline in the interest of the younger generation to work in the agricultural sector. Younger generations prefer to work in the industrial sector, even though they have inadequate skills. Seeing the phenomenon of the declining interest of young people in becoming farmers, the opinion of Manager Trukajaya (A1),

"*They should be able to think of independent farmers, by looking at successful farmers. In addition, if young people lack interest in agriculture, and their parents are farmers, it is likely that land inherited from parents will tend to be sold and could be converted into housing or factories, if their children do not want to become farmers.*"

This narrative was emphasized by C1 as the head of the Millennial Farmers' group.

"*The field of agriculture is not very attractive to young people, especially from the millennial generation, because the problems in agriculture are quite complicated, such as requiring large capital with uncertain farming results. If the farming results are good, it can cover the capital and get a profit, but if it fails, the income will run out to cover the cost of fertilizers, the cost of pesticides to the cost of seeds, not to mention the energy spent*."

However, these young people only become farmers after they have no choice. According to the Trukajaya field staff (B1),

"The *average millennial farmer just wants to go into agriculture because he is urged by the needs of life. The perspective of most people is that the job of a farmer is less prestigious, the work is dirty because you have to go to the paddy fields, it requires perseverance and tenacity, and sometimes the results are not optimal.*"

Similarly, for source B2, the statement is as follows.

"There is still unemployment, not many people want to work in agriculture sectors and they have low level of education. Most of our fostered farmers are only elementary, junior high and high school graduates"

The main obstacle in the process of human resource readiness is that farmer groups still face various problems such as the use of conventional equipment and traditional marketing. F armers in Giriwoyo and Kapenewon Pandak sub-districts have yet to automate their production, limiting their income and productivity. Agricultural modernization is necessary to increase competitiveness and improve the quality

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 5846 – 5856
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.5194

and quantity of agricultural products.

Institutional Organization

The local wisdom is carried out as an alternative to agricultural industrialization, based on agricultural systems and strong social relations. The role of local governments in empowering farmer groups is still not optimal for addressing issues of human resource readiness agricultura sector. From the central government perspective, work programs and budgets have been directed to improve the agricultural sector, but budget absorption has not been optimal. The statement from Trukajaya field staff (B1) is as follows:

"*Actually there is an agricultural budget from the central government to the regional district government, but the absorption and programs are not optimal, mostly for the purchase of equipment and not for empowerment and sustainability. We must be instructors in the midst of the farming community to become a bridge between the local government and farmer groups.*"

This narrative was emphasized by the Trukajaya Manager (A1)

"*The ability of the central government to confirm and solidify programs and budgets can result in agricultural innovations that contribute to sustainable agricultural development. These results indicate that farmers' understanding of the benefits of central government work programs with local government empowerment and support*".

Farmers' welfare is the impact of achieving the *outcomes of* agricultural development programs and activities (Renstra, 2021). Agricultural modernization can increase agricultural productivity, reduce production costs, and increase the efficiency of the production process. Digitalization of agriculture through AI tools reduces middlemen, expands market opportunities, and enhances productivity and livelihoods of small-scale farmers (Amuda & Alabdul Rahman, 2024). Farmers can increase the amount of production by using superior soil varieties, applying organic fertilizers, controlling pests in a balanced and integrated manner. This can be achieved through government assistance in forms of agricultural extension activities such as education, assistance, and training for farmers (Martina et al., 2018). Given the importance of HR readiness in the sustainability of agricultural sector, it is essential to intervene through a program dedicated to catalyze HR readiness in agricultural sector.

Planning

The development of food barn independence starts with the smallest unit, namely the farmer's family, and continues in the farmer group. LM is a strategy to advance the economy of farmer groups through efforts to develop businesses and encourage the readiness of human resources to increase their capacity of farmer groups. Through capacity building, farmer groups can improve product quality based on local potential and develop product derivatives, marketing innovations, and entrepreneurial attitudes and mentality. According to source B1, is as follows:

"One of the solutions for food security is the readiness of human resources and future planning. In this case, the LM concept can play a significant role in education on food management and consumption patterns by cooperating with potential stakeholders. I would like to remind that one of the challenges we face today is the increasing number of nutritious food needs, and these farmer groups need to improve their human resources to be able to meet community nutrition, at least in their groups first and then to a larger social scope".

This opinion is explained by the results of Interviewee D1.

"LM has conducted a social engineering in implementing rice intensification, namely cooperation between farmers and between farmer groups, both in an orderly manner in planting patterns, how to use water for irrigation, use of equipment and in harvesting and pest and disease control."

This opinion is supported and justified by the statement conveyed by informant A1 as follows:

"Because food sovereignty starts with the family, and in accordance with our vision, Yayasan Trukajaya is "Building

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 5846 – 5856
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.5194

independent and sustainable communities". We build communities and village governments that are independent, well-managed, cultured, and local wisdom in this case LM for a sustainable environment".

LM management interventions include strengthening the agricultural system, the agricultural training system, agricultural education, management support, and technical support from NGOs and local governments. The optimization of productive yards depends on the approach, training, and direction of LM implementation, and LM maintains the principles of increasing business scale without destroying nature.

Implementation

Developing the quality of farmers' human resources is carried out by training and mentoring to internalize values on institutional organizations of LM. It is expected that farmers understand the philosophy of environmentally friendly agriculture, and they make a follow-up for food barns (i.e., community food security) as a business model for village residents. In the context of empowerment, the development of the LM ecosystem creates opportunities to achieve the objectives of a sustainable business system, as well as provide opportunities to increase the business scale and capacity of farmer groups to achieve food self-sufficiency. Training and access to the market, technology, institutions, production, and post-production facilities, including certification of business and product legality, are some types of facilities that are provided during empowerment. Self-sufficiency of seeds, fertilizer, infrastructure, production, and marketing are the determining factors for the success of the Mataraman granary. Agricultural assistance and coordination of training plans, sharing related to planting patterns after organic rice, namely spraying organic rice plants using organic pesticides made by training to make bokashi fertilizer for vegetable planting media. The agricultural system has started to convert from chemical to semi-organic, and in the future, it will be pure organic. The farming community is expected to be able to capture and apply environment-friendly agriculture. Internalization of values so far has been carried out through the role of the farmer's family, namely the senior mediator and communicator farmers, while as stakeholders, the Trukajaya foundation and village officials are facilitators and consultants related to assisting millennial farmers. Trukajaya field staff conducts intense personal communication in the form of copies to village officials and coaches.

Monitoring and Evaluation

Monitoring and evaluation activities involve the performance measures of program success and how they are achieved. Farmers' human resources must develop their competencies to increase productivity. In particular, they still use conventional methods in both production and marketing, which are still very limited. Changing their mindset through the internalization of values using a slow approach requires a lengthy process to change their habits. The narrative of source A1 is as follows.

"... The agricultural sector is shrinking due to many factors, such as agricultural land being converted into factories or housing, and soil damage due to chemical drugs such as fertilizers and pesticides. The soil is damaged and can no longer be optimally used, not to mention the reduction in youth to become farmers. With the use of modern technology, we hope to attract young people to become millennial farmers."

The Trukajaya Foundation has implemented programs to prepare and empower human resources by providing assistance in the form of facilitators, mediators, communicators, and consultants. In addition, farmer groups participated in the HR readiness program, including its follow-up plan. According to Source C4.

"... there is still an opportunity here because millennial farmers can be directed by regional agriculture department and the Trukajaya foundation towards modern agriculture."

LM becomes a binder between farmers and their environment, and local wisdom can directly contribute to shaping the behavior of individual farmers, farmer groups, and farmer organizations, particularly for maintaining sustainable farming. The local government conducts guidance, supervision, and review of LM to be implemented by every farmer group in the area. Local wisdom-based LM encourages farmers to participate in maintaining the ecosystem of the agricultural environment.

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 5846 – 5856
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.5194

Improving HR Readiness

Improving farmers' welfare often faces the problem of human resource readiness: farmers' relatively low knowledge, limited capital and marketing capabilities, and lack of skills to utilize modern agricultural technology, such as agricultural tools, machinery, and other supporting equipment, to increase agricultural productivity and efficiency. The LM program improved HR readiness in the form of increased values of creativity, innovation, and competitiveness. The LM program encourages the regeneration of farmers (family farming), increased interest from young people in the agricultural sector due to modernization of farming (i.e., the semi-modern system), and increased awareness and commitment for organic farming to preserve nature and maintain the environment. Farmers started to shift the use of pesticides to partially use natural homemade fertilizers and implement integrated farming systems, oriented towards zero waste farming and producing the 4Fs (food, feed, fertilizer, and fuel). In addition, the farmer groups acquire knowledge about good farming practices such as husbandry management, dry stall maintenance procedures, feeding, and livestock health handling, including innovation in selling products by processing them to obtain value added. Farmer groups have learned to sell their superior products through agribusiness exhibitions and acquire marketing network capabilities by selling crops among group members, shared marketing offices, and online marketing. Farmer groups have maintained their focus on strengthening organic agriculture market.

Food Independence

The success of LM farming communities in Giriwoyo and Kapenewon Pandak sub-districts is that farmer groups are able to grow and improve their economy, meet the need of surrounding community, develop awareness in food nutritional needs. The involvement of farmer groups into various trainings and events are useful to develop farming communities in Giriwoyo and Kapenewon Pandak Subdistricts toward food self-sufficiency. Such training involves managing the use of landyard, strengthening the capacity of organic farming in terms of cultivation and marketing concepts, strengthening the capacity of food barns in terms of system concepts and working mechanisms, intensive socialization at the family level on food security and independence, training in agricultural product development, and the continuous internalization of LM. The value system of LM influences the social behavior of farmer groups in living their way of life as farmers in which organic farming becomes their intended lifestyle. A farming entrepreneurship development program involves young farmers in agriculture, livestock, fisheries, plantations, and forestry, as well as other stakeholders to create an independent, advanced, and sustainable agricultural ecosystem. The following is the opinion of Source B1 towards organic farming to support food self-sufficiency in the Giriwoyo sub-district:

"Organic farming will not decrease productivity, it is likely to decrease in the first season and increase in the next planting season as long as the planting is carried out in accordance with the SOP (i.e. the standard operating procedure). .... There are forms of activities to anticipate the impact of climate change on the food security of farmer groups, as well as increasing the capacity of agricultural activists and the need for technological interventions to increase agricultural yields".

According to C2 sources, food self-sufficiency can be achieved by diversifying local products into derivative products as follows:

"The technology that we are currently doing, because the area here produces a lot of cassava, we developed the business with various diversified cassava-based products and innovations, but at this time we have just turned cassava into mocaf flour, we pack it attractively and give a brand, in the future it will also be registered with Indonesian Food and Drug Authority (i.e., BPOM) and Household Industry Product Licensing (i.e.,PIRT). For product sales, we do it through groups, as well as social media"*

Communities in Giriwoyo and Kapenewon Pandak sub-districts have utilized technology for their agricultural sector, using tractors to cultivate land for rice paddies and human labor to plant rice and harvest. The problems before the intervention were related to knowledge, access to purchase and sale of livestock, and cage building. Therefore, after the intervention, access to the purchase and sale of livestock and cage buildings became more developed and directed toward zero waste. As a follow-up plan to increase the

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 5846 – 5856
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.5194

added value of agricultural products, farmer group members are preparing materials for making mocaf flour (Modified Cassava Flour), participating in mocaf flour training, and preparing plans for processing an organic certified mocaf, Bon chili, from chili plant raw materials. In addition, farmer group members emphasize vegetable and fruit planting activities as well as product displays in the Wonogiri joint marketing group (KPB) and making product catalogs.

Conclusion and Suggestions

Internalization of values using local wisdom LM has an impact on the readiness of human resources, because it is considered effective and accepted by the farming community of Giriwoyo and Kapenewon Pandak Districts. Program management interventions affect the readiness of agricultural human resources. In this case, LM carried out social engineering to empower and monitor farming communities in the development of food diversification activities towards food self-sufficiency. Such initiatives utilize natural resource management, socializing and promoting food diversification, paying attention to environmental sustainability, managing the risk of damage to the soil ecosystem, and returning to nature. Thus, there is an increase in the ability and capacity of human resources to diversify local food products. Provision and development of food access strengthens food independence in farming families. In the future the LM program can alleviate poverty and empower the surrounding community to realize excellence and prosperity and fulfill the basic needs of community members in realizing food independence in Giriwoyo and Kapenewon Pandak Subdistricts.

Organizational institutions impact the formation of human resource readiness in the context of economic, social, environmental, and local culture. Empowering local wisdom values opens the horizons of local Indonesian agriculture by building values of spirituality, norms, cooperation, and relationships that become a magnet to strengthen the organizational culture of farmer groups. From an institutional perspective, bonding is becoming stronger and better with fostered farmer groups that are able to share quality seeds with other farmers and are also currently starting to help provide seeds for farmers. Commodities planted on agricultural land are also increasingly diverse. However, the utilization of yard land is still a matter of mutual improvement because only part of the average land area owned has been utilized by the community. With the local wisdom of LM, young people become interested in agriculture to become farmers or at least young people can utilize the yard, at least for farming to meet their own needs, utilizing their yard for farming and livestock. If landyard can be maximized, it will also help achieve food independence in Giriwoyo and Kapenewon Pandak Subdistricts.

The LM program uses an approach for farming communities in the hope of improving their ability to think and use their resources optimally by considering environmental conditions and potential. Therefore, a strategy that can be implemented is to empower human resources and internalize local wisdom so that development runs in accordance with the goals of the farmer group. Internalization has several benefits, particularly in the context of personality formation, moral value development, and farmer group development. The readiness of farmers for seed independence, fertilizer independence and infrastructure facilities, production independence, and marketing independence are the determining factors for the success of LM. In addition to increasing food based on the potential of regional resources from a local environmental perspective, it also provides economic benefits to farmers and the surrounding community. LM can continue to be carried out, and in the future, it will become a village granary to realize food self-sufficiency by utilizing the linkages among plantation crops, food crops, horticultural crops, livestock, and fisheries in one area. The success of LM local wisdom is that farmer groups are able to grow and improve their economies, thus meeting the needs of the surrounding community.

Limitations and Future Research Directions

This study provides an alternative approach to protect agricultural land from the practice of modern capitalist relations that aim to convert agricultural land into commercial areas. Farming based on the local wisdom of LM has become an alternative to restore the community's economy in agriculture and foster the spirit of entrepreneurship in the field of agricultural business among the younger generation, as well as to

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 5846 – 5856
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.5194

increase food production and efforts to advance agricultural cultivation. Improved welfare will improve the quality of agricultural human resources to become skilled, creative, innovative, noble personality, and local culture and reduce the unemployment problem. The collection of information data on farmer groups is limited to the head of the farmer group and has not explored deeper data on farmer group members and millennial farmer groups due to limited research time. In addition, this study focuses only on local wisdom from Javanese culture, whereas Indonesia has diverse wealth of tribes and local wisdom. A future research agenda might examine and combine the values of LM and other local wisdom in the context of HR readiness. In terms of methodology, samples can also be obtained from farmer members in addition to the head of the farmer group, and Focus Group Discussions (FGDs) can be conducted to obtain more complete data. This research can also be linked into digital skills for efficient application of AI to reduce climate change such as increased greenhouse gas emissions and global warming.

References

Amuda, Y. J., & Alabdul Rahman, S. (2024). Artificial Intelligence for Food Production among Smallholder Farmers: Towards Achieving Sustainable Development Goals (SDGs) in Nigeria. Journal of Ecohumanism, 4(1), 175–185. https://doi.org/10.62754/joe.v4i1.4202

Asniati, A., Ali, S., Djunid, A., & Novandri, R. (2019). Analysis of a City Readiness in Indonesia in Implementing Integrated Information Systems toward Smart City Actualization. Proceedings of the International Conference on Innovation in Research (ICIIR 2018) – Section: Economics and Management Science. Proceedings of the International Conference on Innovation in Research (ICIIR 2018) – Section: Economics and Management Science, Bali, Indonesia. https://doi.org/10.2991/iciir-18.2019.7

Astuti, S. (2023). Optimalization of Yard Land Through the Lumbung Mataraman Program to Support Urban Food Security During the Pandemic Covid 19. In I. Irham, M. Firdaus, & S. De Neve (Eds.), Proceedings of the International Symposium Southeast Asia Vegetable 2021 (SEAVEG 2021) (pp. 568–572). Atlantis Press International BV. https://doi.org/10.2991/978-94-6463-028-2_58

Borda, Á. J., Sárvári, B., & Balogh, J. M. (2023). Generation Change in Agriculture: A Systematic Review of the Literature. Economies, 11(5), 129. https://doi.org/10.3390/economies11050129

Bps (2023). BPS Pertanian 2023. (www.bps.go.id).

Bps, (2018). Hasil Survei Pertanian Antar Sensus (SUTAS.) (www.bps.go.id).

Dyah Indriyaningsih Septeri. (2023). Lahirnya Petani Milenial dan Peranannya dalam Pengembangan Agrowisata di Kabupaten Gunungkidul. Jurnal Ilmu Sosial dan Humaniora, 12(1), 29–39. https://doi.org/10.23887/jish.v12i1.50608

Fadli, Nasution, Z., Lubis, S. N., & Aritonang, E. Y. (2024). The Impact of Sustainable Certification on Arabica Coffee's Competitiveness and Regional Development in Aceh, Indonesia. Journal of Ecohumanism, 4(1), 76–85. https://doi.org/10.62754/joe.v4i1.4089

Kurniasari, D., Cahyono, E., & Yuliati, Y. (2018). Kearifan Lokal Petani Tradisional Samin di Desa Klopoduwur, Kecamatan Banjarejo, Kabupaten Blora. HABITAT, 29(1), 33–37. https://doi.org/10.21776/ub.habitat.2018.029.1.4

Martina, Shamadiyah, N., & Praza, R. (2018). The Contribution of Revenue and Consumption Cost of Soybean Farmers in Muara Batu Subdistrict Aceh Utara. In Emerald Reach Proceedings Series (Vol. 1, pp. 289–294). Emerald Publishing Limited. https://doi.org/10.1108/978-1-78756-793-1-00014

Mazid, S., Prasetyo, D., & Farikah, F. (2020). NILAI NILAI KEARIFAN LOKAL SEBAGAI PEMBENTUK KARAKTER MASYARAKAT. Jurnal Pendidikan Karakter, 10(2). https://doi.org/10.21831/jpk.v10i2.34099

Nainggolan, R. H., Panjaitan, B., & Sitompul, A. S. (2023). Reconstruction of Dalihan Na Tolu in Batak Culture Towards a Practical Theology Relevant to the Task of the Church. 02(01).

Nurida, N., Evahelda, & Sitorus, R. (2024). Peran Penyuluh Pertanian Dalam Pendampingan Petani Milenial. Jurnal Penyuluhan, 20(01), 84–95. https://doi.org/10.25015/20202444448

Rachman, A. Z., & Widodo, A. S. (2021). Role of Urban Farmer Group's Leader As Opinion Leader On Utilizing Urban Yard In Yogyakarta City. E3S Web of Conferences, 316, 01017. https://doi.org/10.1051/e3sconf/202131601017

Renstra (2021). Rencana Strategis Kementrian Pertanian Tahun 2020-2024. Keputusan Menteri Pertanian Republik Indonesia Nomor 484/KPTS/RC.020/M/8/2021.

Riawanti, W. (2017). Peningkatan Pendapatan Keluarga Melalui Pertanian Berkelanjutan: Studi Kasus Program LMdi DIY. Jurnal Optimum, Volume 7, Nomor 2.

Rojabiyah, N., Ghufronudin, G., & Trinugraha, Y. H. (2023). Upaya Revitalisasi Identitas Petani Lokal melalui Festival Mbok Sri Mulih (Studi Kasus Festival Mbok Sri Mulih di Desa Delanggu, Klaten). MUKADIMAH: Jurnal Pendidikan, Sejarah, dan Ilmu-ilmu Sosial, 7(2), 331–344. https://doi.org/10.30743/mkd.v7i2.7563

Ronaghi, M. H., & Forouharfar, A. (2020). A contextualized study of the usage of the Internet of things (IoTs) in smart farming in a typical Middle Eastern country within the context of Unified Theory of Acceptance and Use of Technology model (UTAUT). Technology in Society, 63, 101415. https://doi.org/10.1016/j.techsoc.2020.101415

Rusmana, T. (2017). Implementasi Nilai-Nilai Konsep "Tritangtu Sunda". Seminar Nasional: Seni, Teknologi, dan Masyarakat II. Institut Seni Indonesia Surakarta.

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 5846 – 5856
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.5194

Setyowati, D. L., Himmah, F., Juhadi, & Arsal, T. (2022). Local Wisdom to Anticipation of Climate Change in Lerep Semarang: 6th International Conference on Science, Education and Technology (ISET 2020), Semarang, Indonesia. https://doi.org/10.2991/assehr.k.211125.076

Shamadiyah, N., Praza, R., & Martina. (2018). The Role of Fishing Techniques with Tuah Teng on Food Security in Facing the Asean Economic Community. In Emerald Reach Proceedings Series (Vol. 1, pp. 175–180). Emerald Publishing Limited. https://doi.org/10.1108/978-1-78756-793-1-00006

Sukarno, P., Yasirandi, R., Utomo, R. G., Makky, M. A., Negara, R. M., & Rezeki, S. (2022). Technology Readiness Index of Agricultural Extension Officers in Bandung City, Indonesia, towards Digitalization of the "Buruan Sae" Program. agriTECH, 42(4), 362. https://doi.org/10.22146/agritech.67535

Susanti, R., & Mulyoto, M. (2020). Kesiapan Kerja Siswa BLK Ditinjau Dari Kemandirian Belajar, Motivasi Kerja dan Pengalaman On The Job Training. Media Manajemen Pendidikan, 3(1), 1. https://doi.org/10.30738/mmp.v3i1.3424

Susilowati, S. H. (2016). Fenomena Penuaan Petani dan Berkurangnya Tenaga Kerja Muda serta Implikasinya bagi Kebijakan Pembangunan Pertanian. Forum penelitian Agro Ekonomi, 34(1), 35. https://doi.org/10.21082/fae.v34n1.2016.35-55

Szabo, S., Apipoonyanon, C., Pramanik, M., Tsusaka, T. W., & Leeson, K. (2021). Agricultural Productivity, Aging Farming Workforce, Sustainable Agriculture, and Well-Being: Household Survey Data From Central Thailand. Frontiers in Sustainable Food Systems, 5, 728120. https://doi.org/10.3389/fsufs.2021.728120

Wattimena, Z., Septiyanti, M., & Mutiarin, D. (2021). Inovasi Kebijakan Pemerintah Daerah DIY dalam Membangun Ketahanan Pangan di Era Pandemi Covid-19. Matra Pembaruan, 5(2), 127–139. https://doi.org/10.21787/mp.5.2.2021.127-139.