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AGROECOLOGY AS A FOUNDATION IN COMMUNITY EMPOWERMENT THROUGH ECOLOGICAL VILLAGE SCHEMES IN BANGSAL VILLAGE OF OGAN KOMERING ILIR DISTRICT, INDONESIA

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ABSTRACT

The position of agroecology as the foundation for community empowerment provides a space for dialogue between the concepts of rural development. This space is manifested in an ecological village scheme related to efforts to save the environment. This study aims to analyze the development of an ecological village and how agroecology is placed in the scheme of an ecological village. The research method used is descriptive qualitative method. The key informants in this study were six people consisting of two program implementers, two people from the Village Government, and two beneficiaries. Data collection techniques used: in-depth interviews, observations and document studies. The data analysis consists of five stages, namely preparing the data, reading, coding, analyzing, and presenting the data in a narrative report. Ecological village development is carried out based on local wisdom through a participatory and integrated process based on four main pillars, namely Governance of Land Tenure, Governance of Land use, Governance of production and Governance of consumption. The integration of these four pillars is necessary because of the interrelated relationships and influences each other as a system in a holistic scheme. The position of agroecology as the foundation for community empowerment has provided directions for social transformation where the important contribution of this empowerment program is the change from conventional farming systems to agroecology, increasing agroecology capacity, and developing market networks.

KEY WORDS

Agroecology, community empowerment, NGO, ecological village, participatory, local wisdom.

Ecological village is a village concept introduced by the Indonesian Forum for the Environment (Walhi) which is defined as an integrated and participatory rural area management system both in the process and in interaction with various parties. The implementation and development mechanism always pays attention to the function of natural resources and the environment as life support based on local values and wisdom in order to realize just and sustainable welfare. The ecological perspective is defined as the relationship and dependence between all components of the ecosystem that must be maintained in a stable and balanced condition. Therefore, the ecological village as an integrated approach becomes important in the midst of efforts to improve village management as the main supporter of sustainable development in the midst of social, economic and environmental problems resulting from a growth-centered development process (Farid, 2018).

The need to develop an ecological village is based on the condition that villages in Indonesia have now developed as centers of investment and agro-industry development such as oil palm plantations and industrial forest plantations which have resulted in various socio-ecological problems that cannot be ignored such as damage to the Peat Hydrological Area, forest and land fires, environmental pollution, social inequality, and destroying farmer traditions and local wisdom (Utami et. al, 2017). In addition, agricultural modernization also offers the use of hybrid seeds, chemical fertilizers and pesticides in order to increase the productivity of rice farming. Including using agricultural tools and machines such as combine harvesters which have an impact on the socio-economic conditions of farmers (Januarti, et. al., 2018; Suparwoto, 2019). The modernization will have an impact on local wisdom that is in harmony with nature if it is not managed wisely based on sustainable principles.



Agroecology is believed by Non-Governmental Organizations (NGOs) as a solution to overcome the negative impacts of industrialization in rural areas. In practice, as a global struggle, agroecology is carried out with the principle of locality, such as local wisdom, local knowledge, institutions and culture with local dimensions. All of these socio-ecological elements must be a core strength in learning about environmentally friendly natural resource management and realizing social transformation towards social justice for all people. The development of agroecology cannot be separated from the idea of the agrarian social movement that grew with it. If agroecology is placed only as a mere instrument, its transformative character will be lost (Guzmán and Woodgate, 2013). On the other hand, Agroecology provides a new paradigm beyond the hegemonic paradigm of modernity. Reorganizing the agri-food system, social relations and human relations with nature towards a new paradigm that is ecological and socially just. The expansion of this NGO movement can be done through a process of community empowerment by integrating more people who work in rural areas, farmer groups, communities and organizations in the agroecological struggle (Val, et al, 2019). The important role of agroecology in community empowerment can be seen from the transformation of the food system, the restoration of agroecosystems and agrobiodiversity. All of this can improve smallholder livelihoods and eliminate hunger (Holt-Giménez and Altieri, 2013).

Interest in community empowerment activities through ecological village schemes implemented by NGOs is based on the explanation of Talimba, et al (2015), that organizations have succeeded in supporting village development through programs and activities carried out with the role of increasing participation in development, mediator between the interests of the government and society, as well as increasing community access and control in development. In addition, Arendse and Patel (2014), revealed that in the community empowerment process, the strategy of strengthening social capital that leads to the development of partnerships outside the community, especially with local governments, has proven to have a positive impact on service delivery and the transition to a society that cares about the environment.

To analyze the position of agroecology as the foundation of community empowerment through the ecological village scheme, research was conducted in Bangsal Village as an ecological village which is the area of a community empowerment program carried out by an NGO called the Indonesian Forum for the Environment of South Sumatra Province (Walhi Sumsel) in collaboration with the Indonesia Climate Change Trust Fund (ICCTF). This study aims to analyze the development of an ecological village and how agroecology is placed in this village.

METHODS OF RESEARCH

This research was conducted in Bangsal Village, Ogan Komering Ilir District, South Sumatra Province, Indonesia. This location was chosen deliberately with the consideration that this village is an ecological village that was built in the community empowerment process carried out by the Indonesian Forum for the Environment (Walhi) or environmental NGO. The choice of NGO as community empowerment actors is based on their position in fighting for agroecology as a concept and tool to carry out social transformation in the food system, agro-ecosystem, biodiversity and social system. This transformation is manifested in the development of an ecological village.

The research method used is a descriptive qualitative method, where Moleong (2017) explains that the qualitative method uses a temporary design so that it can be adapted to the reality in the field, and the research results are discussed and agreed upon jointly between the people who are used as data sources. The key informants in this study were six people consisting of two program managers (Walhi Sumsel), two people from the Bangsal Village Government, and two beneficiaries. Data collection techniques in the form of in-depth interviews, observations and document studies to collect data in the field. The in-depth interview, observation and document study techniques were chosen because the three techniques were considered the most appropriate and effective techniques based on the research situation and conditions to complete the data to be obtained.



The qualitative data analysis technique in this study is guided by data analysis techniques from Creswell (2017) where the stages are (1) Processing and preparing data for analysis (2) Read the entire data. (3) Start coding all data. (4) Implement a coding process to describe the settings, people, categories and themes to be analyzed. (5) Indicates the description and theme to be restated in the narrative or qualitative report.

RESULTS AND DISCUSSION

Bangsas Village as an Ecological Village. The natural landscape of Bangsal Village has been formed with zoning of agriculture, plantations, forests, waters and swamp for buffalo grazing. Most of this area is a lowland swamp with a height of 10 meters above sea level, inhabited by ethnic Malay Communities who have adapted to the swamp environment so that the community finds local wisdom in processing the potential of natural resources. The water zone is used for rice farming and fisheries. The rice cultivated is freshwater swamp rice which is planted only once a year at the beginning of the dry season. Fisheries in the form of natural fish that breed during the rainy season, some of these zones are auctioned under the lebak lebung auction policy by the district government. A small part of the dry land zone is cultivated with rubber plantations. The water zone that is not cultivated for cultivation is used for grazing swamp buffalo.

The vast expanse of swamp in this village presents a beautiful view resembling a lake. In the rainy season which ranges from October to April, the swamp area will be flooded with water. The highest inundation peak is in December to February. Part of this area is the lebak lebung register which was auctioned off by the district government. The community has protested several times that the lebak lebung auction be abolished and the management system handed over to community groups, but has not received a response. The water area in Bangsal Village is the habitat of several local fish species, namely baung, cork, sepat, betok, catfish and others.

During the dry season, which ranges from May to September, some of the swamp land is planted with rice. If the water level is still too high to build a rice nursery, they will make a floating nursery as a form of local wisdom in this area. Culturally, rice is a staple food crop to meet daily needs, but currently rice has been traded as a business commodity. The rice cultivated is lebak rice which is planted only once a year at the beginning of the dry season. The seeds used are mostly hybrid seeds. Only a few farmers remain loyal to planting local seeds such as white rice and kanyut rice.

The swamp land in Bangsal Village is also used for buffalo grazing. The type of buffalo in this area is the Pampangan swamp buffalo. Based on the Minister of Agriculture Decree Number 694/Kpts/PD.410/02/2013 concerning the establishment of the Pampangan Buffalo Clump. It was determined that the Pampangan buffalo is a local Indonesian buffalo family as a wealth of Genetic Resources that need to be protected and preserved. The swamp ecosystem that dominates in this village strongly supports the breeding of swamp buffalo. During the dry season, most of the swamp exposure forms grasslands. This condition produces swamp buffalo feed so that they can breed rapidly. In the dry season, the meadows will be fertile and in the rainy season the buffaloes eat grass while diving due to the very good adaptation level to the swamp. This buffalo business has been carried out for generations. Not only as a producer of meat but also milk is processed into various products such as gulo puan, sagon and yogurt. These products have been known by the community not only around the village but also in the Palembang area.

The Community Empowerment Program through the ecological village scheme aims to re-establish so that the social, economic and environmental functions in Bangsal Village can be sustainable, because various threats to environmental damage have been felt by communities around this area such as expansion of oil palm plantations, forest and land fires, and excessive use of chemical fertilizers and pesticides. According to MHS (Director of Walhi Sumsel), an ecological village can answer environmental problems because in its management it is very concerned about the function of natural resources as life support based on local wisdom values. In addition, the management of this rural area is carried out through a participatory process, and is integrated into the four main pillars supporting the



ecological village, namely Governance of Land Tenure, Governance of Land use, Governance of production and Governance of consumption. The integration of these four pillars is necessary because of the interrelated relationships and influence each other as a system.

Regarding the Governance of Land Tenure in Bangsal Village, Walhi Sumsel encourages sovereign and just of land tenure. To achieve this, four instruments are needed that must be met, specifically (1) rural territorial legality free from overlapping slices of ownership and claims from other parties, (2) village area maps confirmed with verified administrative boundaries, (3) policy the agrarian reform carried out by the government is the basis for reorganizing land tenure that is just in terms of assets and access, and (4) recognition of the constitutional rights of rural communities in determining area functions and community development in accordance with local characteristics and culture. These four instruments are motivated by the objective conditions of the countryside which still have agrarian disputes and village boundaries, the existence of inequality in land ownership, both distribution and allocation inequality, and the weak recognition of the constitutional rights of the community in determining the direction of rural development.

Governance of Land use is a system in performing and controlling the use of natural resources in accordance with the objectives of developing an ecological village, with an emphasis on aspects of environmental carrying capacity and the value of village community wisdom. There are three instruments to carry out this governance, namely (1) Spatial planning or land use which is prepared in a participatory manner based on local values and prepared in an effort to meet social, economic, cultural and ecological needs, (2) Rural spatial management regulations that are formulated jointly by all stakeholders and formally endorsed by the village government or customary government. (3) Policies for the protection of village layout by the government above the village (district, province or national). These three instruments are motivated by the objective conditions of the countryside that there is no detailed village spatial planning, the many changes in the function of space as a result of changes in government policies on it such as the granting of cultivation rights to companies, as well as the increasing vulnerability of rural communities as a result of the reduced space for people's management and environmental damage.

Governance of production is based on the carrying capacity of the environment and natural resources with an emphasis on not increasing risks to the area and village communities. As stated by HU (program manager), when building a production system in Bangsal Village, the choice of agricultural production was Agroecology by making demonstration plots as learning media and model trials introduced to the community. There are three instruments to carry out this governance, (1) Identification of potential commodities owned by the village, both as the main source of income and other potentials in accordance with the natural resources in the village, (2) The production pattern developed is based on sustainability and the principle of zero waste and (3) The cropping pattern developed is diversification or plant diversification with reference to the needs of the community. These three instruments are motivated by the objective conditions of rural areas where the level of development of welfare is stagnant and even declining, there is often a decline in environmental quality. Many product commodities have been produced by rural communities as new breakthroughs, but cannot last for a long period of time because they are not based on the carrying capacity of the land and other aspects. What is often found is the lack of initiatives to provide added value to commodities through product downstreaming.

The fourth aspect of a series of interrelated pillars of the ecological village is Governance of consumption. The main target of this pillar is regulation of consumption patterns and product distribution. According to AJ (Head of Bangsal Village) Instant cultural invasions as a source of community food have arrived in rural areas and were responded quickly by village communities, so that some people especially young people experience a disconnect in knowledge with local food which is a cultural heritage. They prefer instant food which has very poor nutrition compared to local food. According to MHS, regulation of consumption patterns in ecological villages is expected to strengthen relations between regions through the exchange of commodities for each village, in addition to the distribution of potential products must provide added value for rural communities as producers.



Community food sources must be an important part in the development of an ecological village. Both food sources which are staple foods that have traditionally been passed down from generation to generation such as rice, as well as additional food such as processed products from buffalo milk and fish. This arrangement of consumption patterns is expected to minimize the level of family food dependence from imported food or instant products imported from outside the community.

Ecological village development is inseparable from efforts to preserve local wisdom found in villages in Bangsal Village. This wisdom is very important because it is very strongly relevant to the development of an ecological village. This is in accordance with the results of a study by Mulyana et al (2021) who saw that the relevance of local wisdom in Bangsal Village with the principles of food sovereignty carried out by the community was still close. In line with Yunita and Junaidi (2012), local wisdom in this region is not only limited to technical and economic dimensions such as land use, farming systems, agricultural product processing, and marketing and financing systems, but also includes community interpretation of sustainable environmental management which is a part of social systems and norms expressed in culture, traditions, and myths.

An ecological village which is being developed through a participatory process, and integrated into four main pillars, namely Governance of Land Tenure, Governance of Land use, Governance of production and Governance of consumption provides a holistic scheme. The integration of these four pillars is necessary because of the interrelated relationships and influence each other as a system. This is in accordance with the opinion of Valentinov (2014) who examines nature as a system based on Niklas Luhmann's Theory where the choice of a sustainable ecological village system must sacrifice conventional village schemes that are based on economic growth.

Position of Agroecology in Ecological Village. After the establishment of Bangsal Village as an ecological village, the position of agroecology became the foundation of the village development process. According to MHS (Director of Walhi Sumsel), the empowerment program implemented in the village began with the stabilization of agroecological zoning through a participatory mapping process. The initial stage of this process is the determination of village boundaries. Administratively, Bangsal Village is bordered on the north by Ulak Depati Village, on the south by Kuro Village, on the west by Pulau Betung Village, and on the east by Tapus Village. After that, the outer boundaries of the village were made with the names of the locations which are the boundary areas, both in the form of natural boundaries and infrastructure, as the existing spatial conditions of the village.

This mapping must be aligned with the Village Development Planning regulated in Law number 6/2014 and Regulation of the Minister of Home Affairs of the Republic of Indonesia Number 114 of 2014 concerning Village Development Guidelines. In this regulation, Village Development aims to improve the welfare of the village community and the quality of human life as well as poverty alleviation through the provision of fulfillment of basic needs, development of village facilities and infrastructure, development of local economic potential, and sustainable use of natural resources and the environment. In addition, village development continues to prioritize togetherness, kinship and mutual cooperation in order to realize peace and social justice.

The area mapped for agroecological zoning is 4.28 km² or 428 hectares consisting of 85.5 hectares of dry land and 428 hectares of peat swampland. On dry land, the commodities grown consist of rubber, beans and vegetables. Meanwhile, in wetlands, the main commodity is freshwater swamp rice. The cropping pattern is applied to the freshwater swamp area only once a year. According to informants from program beneficiaries, the agricultural system in this village is still semi-traditional, the community has adopted modern agricultural knowledge but in practice it cannot be applied, due to limited capital and sub-optimal land conditions that are not suitable for modern agriculture. According to AJ (Head of Bangsal Village), since the Agricultural Extension Officer entered the village in the 1980s, the modern farming system has become a reference for farming implementation. This modernization process leaves little room for local knowledge and people's views on agriculture. Local seeds considered obsolete are replaced with hybrid seeds suitable for



mass production. As a result, local seeds and knowledge related to their cultivation systems are lost. The use of chemical fertilizers and pesticides is a standardized production input.

After the political economy reforms in Indonesia in 1998, privatization continued to develop which resulted in a decrease in public support for small farmers. Production inputs are increasingly controlled by multinational companies, especially for production inputs such as chemical fertilizers and pesticides as well as agricultural tools and machinery. According to HU (Program Manager) Agroecology-based community empowerment is an effort to rebuild the collective identity of the Bangsal Village community in order to regain their sovereignty as farmers. Local seeds are re-glorified and begin to restore production methods that are in harmony with nature, and begin to revive local micro-organisms for natural soil fertility. Capacity building has begun for the people of Bangsal Village through workshops, training, courses, and making demonstration plots of agroecology. This capacity increase has biophysical and socio-economic dimensions.

These activities aim to regenerate farmers' knowledge and encourage the growth of autonomy for farmers in the agricultural system from providing production inputs, carrying out the production process to processing and distributing agricultural products. In this case, agroecology is placed as a knowledge system to realize the cognitive justice of farmers in strengthening the bargaining position of farmers in negotiating with various parties, both the business sector and the government. Educational models like this are commonly found in agroecology courses. David and Bell (2018), suggest three learning outcomes, firstly having practical agroecology competencies as well as generalist experts, contextual and transdisciplinary thinking, and uniting the vision of natural science and social science.

The process of achieving the goals of agroecology education is carried out based on situational considerations and is not rigid. This transformation is not only seen as a technical change in agriculture but as a social and political change. Rebuilding collective identity and reclaiming autonomy and independence as the basic capital to realize peasant sovereignty. This transformation towards an ecological and social justice paradigm is in line with the opinion of Guzmán and Woodgate (2013); Holt-Giménez and Altieri (2013) and Holt-Giménez and Altieri (2013) that the important role of agroecology in community empowerment through the widest participation of rural communities can restore food systems and agro-ecosystems, including improving farmers' livelihoods.

The practical achievements of this community empowerment program include maximizing the function of the yard by planting various types of vegetables as an effort to improve the household economy from fast-harvesting cycle crops. As did the women's group in Bangsal Village, by utilizing home gardens centered on the agroecology demonstration plot. If economically assessed, program participants are able to produce vegetable production that can provide increased income, even though the land condition in this village is peat swamp land with low productivity. Related to economic improvement in peatlands, according to Ulya and Waluyo (2017), it is necessary to provide assistance and increase the capacity of the community, especially local farmers as an enabler to achieve the ecological and economic optimization of the sub-optimal land of the peat formation. In addition to assistance from policy, institutional and financing aspects. Meanwhile, according to Boy, et al (2019), the strengthening of the people's economy carried out in the village greatly affects the welfare of the community which is supported by creativity and government support.

The continuous use of natural fertilizers and pesticides in peat swamp land has an impact on environmental improvement. This has been done by the community after going through a series of training and courses on the manufacture and use of these natural fertilizers and pesticides. Gradually depletion of previous nutrients that had an impact on decreasing soil quality can gradually be restored. The dependence of farmers on inorganic fertilizers and pesticides is a problem that should not occur when it is realized that there are so many raw materials that can be used to make natural fertilizers and pesticides. Through this program, participatory farmers are invited to discover the potential around their environment that can be used to make natural fertilizers and pesticides.

The application of agroecological innovations in ecological villages consists of clearing land without burning, "surjan" planting patterns, hugel culture agriculture, zero budget natural farming and integrated agriculture. All of these innovations are aimed at supporting the



revitalization of the community's sustainable livelihood sources, such as increasing income, minimizing the risk of efforts to improve land and environmental conditions, and building social cohesion because the approach taken is a group approach. According to MH (program beneficiary) the return of soil biomass through composting rice straw and husk charcoal is very good at reducing soil acidity, toxins in the soil and increasing plant nutrients. In the "surjan" cropping pattern, various commodities such as rice, horticulture and fruits can be diversified, in addition to the inundated areas fish cultivation can be carried out.

Products produced from ecological village are processed and packaged. Organic rice products are packaged in 3 kilogram and 5 kilogram. Other products are processed buffalo milk in the form of yogurt, sagon and gulo puan. The gulo puan product is a typical food for the people of Bangsal Village which has now been designated by the Minister of Education, Culture, Research and Technology of the Republic of Indonesia as an intangible cultural heritage of Indonesia. In addition, when the fish harvest is abundant, the processing carried out is in the form of sale fish products, shredded, and crackers. Products that have been processed and packaged are marketed through local market networks in addition to exhibition activities.

The important contribution of the empowerment program performed by the Indonesian Forum for the Environment (Walhi) in South Sumatra is the change from conventional farming systems to agroecology, increasing the capacity of farmers in carrying out agroecology, and developing market networks for agroecological products. The findings of this study are in line with the study of Catacora-Vargas (2017) in looking at the contribution of agroecology to family farming. Some of the most important contributions are the dissemination of agroecological practices through training programs involving producers and technicians from various institutions, dissemination of farmer-to-farmer methodologies within the framework of the Sustainable Agriculture and Food Sovereignty Exchange and Dialogue Programme, developing methodologies to document agroecological experiences together with farmer associations, communities customs, as well as promoting and building local markets for agroecological products, such as Eco Fairs and Green Points. This is in line with Enyioko (2012); Aldashev and Navarra (2018) that NGOs are very prominent and effective in implementing the sustainable rural development program. The activities carried out consist of education, health, agriculture, community development, energy, environment, and waste management, as well as poverty alleviation. Development is related to global development issues with a local approach based on local knowledge in an effort to find innovative and flexible solutions.

CONCLUSION

Ecological village development is carried out based on local wisdom through a participatory and integrated process based on four main pillars, namely Governance of Land Tenure, Governance of Land use, Governance of Production and Governance of Consumption. The integration of these four pillars is needed because of the interrelated relationships and influences each other as a system in a holistic scheme. The position of agroecology as the foundation for community empowerment carried out by NGOs with an ecological village scheme has provided directions for social transformation in the technical, social and political fields. The important contribution of this empowerment program is the change from conventional farming systems to agroecology, increasing the capacity of farmers in carrying out agroecology, and developing market networks for agroecological products. The program is related to global development issues with a local approach.

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