SUSTAINABLE PEATLAND CONSERVATION WITH SOCIO-CULTURAL APPROACH

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ABSTRACT

Land conservation is a human effort to preserve soil so that it remains productive, sustainable and sustainable. This is in accordance with the basic principles of conservation, namely: 1) Protection of life support systems; 2) Preservation or utilization of living natural resources and natural ecosystems in a sustainable manner so that the balance of nature and the quality of the environment is maintained; and 3) Perpetuation in the sense of preserving and maintaining the diversity of flora and fauna species. Peatland conservation has become a hot and strategic topic because there are many benefits, especially for ecosystem management, including: 1) Protecting the wealth of natural ecosystems and maintaining the balance of the ecosystem in a sustainable manner; 2) Provide protection and preservation of various species of flora and fauna in peatland areas; 3) Protecting the natural ecosystem so that it remains unique, beautiful, attractive, and natural; 4) Protect and maintain ecosystems from potential damage caused by natural factors and micro-organisms; 5) Maintain the quality of the natural environment so that it remains good for living things; 6) Preventing the potential for natural damage that can cause harmful disasters; such as damage to protected forests and damage to river bow areas; and 7) Prevent potential losses due to loss of genetic resources contained in flora that are useful as food or medicine. The role of humans with a socio-cultural approach is an important requirement in maintaining the stability of land productivity. It is understood that the success of soil conservation efforts through the socio-cultural conditions of the community is able to facilitate behavioral patterns towards land use and or use, perceptions of maintaining soil sustainability, knowledge about preserving soil, and technological capabilities to maintain sustainable production. Basically, the role of humans in conservation activities has been carried out from the past until now, but it still tends to be sporadic, so the results have not had a significant effect on efforts to improve the environment.

Keywords: Socio-Culture, Conservation, Peat.

INTRODUCTION

The macro concept of development is a process of shifting and changing in various fields of life. In its development, structural and non-structural aspects became the main targets, especially in the sub-aspects of the economy, socio-culture, politics, education, health and infrastructure (structural). Development is also understood as a series of efforts in growth and change that require a plan for a better social life, including a nation or state, government, and society.

The reflection of the socio-cultural life of each individual and group is marked by ongoing interactions, communicating and partnering. A culture that is inherent in it is passed down from one generation to another, which in turn is related to behavior patterns and productive thinking patterns and ideas, including managing agriculture and conservation on peatlands.

It is appropriate if development from a socio-cultural perspective is a process of change in the social and cultural fields, which is planned to improve the welfare and quality of life of the community, because socio-cultural development cannot be separated from the process of socio-economic development. Therefore, socio-cultural development is one of the national development priorities of each country. In relation to sustainable peatland conservation, a socio-cultural approach is also a superior strategy because it can ensure sustainable productivity.

The socio-cultural approach to peatland conservation has a very significant role. The basis is that the concept of conservation is an effort made by humans to protect or preserve various things that are considered important for human life, including the environment (water, soil, air), animals, plants, buildings, and valuable objects. other. Even in the situation and condition of the Covid-19 pandemic, peatland management with a socio-cultural approach has produced significant results in efforts to prevent the body's immune system from declining and the spread of the virus from various ecosystem sources.

METHOD

The study of peatland conservation with a socio-cultural approach is a qualitative study with a descriptive approach. I Made Winarta (2006:155) asserts that the descriptive qualitative approach works to analyze, describe and summarize various conditions and situations from various data collected through interviews, observations of problems that develop in the field, and secondary data from various reports. This study is strengthened by Sugiyono (2008:14) who asserts that the descriptive qualitative approach works based on the post-positivism philosophy, which is used to examine the condition of natural objects, where the reviewer is part of the key instrument. Therefore, studies with a qualitative approach emphasize meaning rather than generalizations. The advantage of a study using a descriptive qualitative approach is that it avoids assumptions and manipulation of information/data. The formulation of the problem is the focus of the study which is still temporary and will develop after the reviewer is in the field to deal with social situations with the aim of understanding complex social phenomena.

Primary and secondary data are inputs as well as results. Primary data is a source of data that is directly obtained without going through intermediary media. Primary data were obtained through observation and interviews including Focus Group Discussion (FGD). While secondary data is a source of data that is not directly received from interviews and observations. The secondary data in this study were obtained from the documents of the results of the study and reports. (Sugiyono, 2008: 193).

The qualitative analysis carried out is as stated by Moleong (2007: 3) in the form of a study procedure that produces descriptive data (oral and written) from information sources. While descriptive analysis works to describe operational activities related to peatland conservation and management, analyze and recommend strategies for conservation with a socio-cultural approach to preserve peat areas and sustainable peat ecosystems.

The study was centered in Kutai Kartanegara Regency and East Kutai Regency, East Kalimantan Province. In Kutai Karatnegara Regency, it is centered in Sabintulung Village and Sedulang Village, Muara Kaman District. In East Kutai Regency in Ngayau Village, Muara

Bangkal District. On average 70% of the village land area is peatland with the majority of the population (Javanese, Banjar and Bugis) making a living by farming and fishing on peatlands.
Results Identification of problems and analysis of the situation (years 2018 – 2019) through the Participatory Rural Appraisal (PRA) approach, it is known that the main problems faced are: 1) Declining environmental quality as a result of peatland fires; 2) Many dead rivers are found due to dense undergrowth around the peat site; and 3) Decreased river water quality due to waste and pesticides/fertilizer disposal activities in agricultural land locations that flow into rivers or drainage/canals.

It is ironic because the condition of the problem that occurs is the result of the behavior of most residents who are accustomed to clearing land or managing agricultural land by burning, low awareness of good behavior in maintaining drainage or canals and low awareness of disposing of waste and garbage in the right place. As an answer to the results of problem solving through FGDs, almost all people do not know the potential of peat as a natural resource asset such as carbon content and so on, do not know the direct impact of burning on peatlands, do not know cropping patterns and good farming patterns, and do not know the right conservation approach.

RESULT AND DISCUSSION

Most of the peatlands in Indonesia are currently experiencing quite alarming damage as a result of the activities of people who do not care about the environment. The activity of burning peatlands in the context of preparing agricultural/plantation land, even for settlements. Other activities that do not care about the environment are uncontrolled logging in peat forests (both legal and illegal), and even construction of irrigation canals/ditches/canals on peatlands that are used outside their functions. All of these activities not only cause physical damage to peatland/forests (such as subsidence/subsidence, burning and reduced peat area), but also cause the loss of peat function as a sink and carbon sequester, as a water catchment area capable of prevent flooding in the surrounding area during the rainy season and prevent saltwater intrusion in the dry season. Taking into account these conditions, conservation of peatlands with a socio-cultural approach to the people living around peatlands is a step that needs to be done consistently in order to be able to preserve peatlands and prevent peatland degradation. The systematic work step begins with research on the social conditions of the community to determine the pattern of peatland use, farmers' perceptions of peatlands, farming knowledge, and community participation in efforts to preserve peatlands through proper conservation.

East Kalimantan as one of the provinces that has 235,862 hectares of peatland spread across Kutai Kartanegara and East Kutai (Wetlands International – Indonesia Program: 2005) is beginning to be concerned about the problems that have occurred. Peatlands are under great pressure from fire problems and peat damage as well as greenhouse gas emissions. One of the solutions implemented by the Provincial Government of East Kalimantan is implementing green development and reducing greenhouse gas emissions from unsustainable land use. This activity focuses on land use (management) of peat and wetland ecosystems in an ecologically sustainable manner. This means that in the rehabilitation and management of peatlands it is necessary to increase awareness and not just concentrate on the capacity of all stakeholders. It is realized that land wherever it exists is a component of the environment that absolutely must be protected or avoided from adverse impacts, so soil conservation is a must so that the environment is maintained (Notohadipawiro, 2000; Idjudin, 2006). Soil is part of ecosystems and natural resources that are very heterogeneous in terms of chemical, physical, and biological aspects. So

the land becomes a determinant of land capacity in the production of useful biomass, such as in agricultural cultivation, plantations, and forestry (Idjudin, 2010). Land is part of the source of life, including human life.

Peatland Conservation

Conservation efforts with a socio-cultural approach through optimizing community participation and all elements of stakeholders, it is hoped that there will be a model of protection, preservation, and improvement of functions and benefits as well as sustainable peatland conservation. Based on its function, swamp areas are divided into: (1) protected areas, (2) preservation areas, and (3) reclamation areas to increase functions and benefits. Protected and preserved areas are also called non-cultivated areas, while reclamation areas are called cultivation areas. The swamp areas that are included as protected areas are: (1) very deep peat areas, more than 3 m; (2) coastal borders; (3) river border; (4) the area around the swamp lake; and (5) mangrove forested coastal areas.

From a technical point of view, peat soils are classified differently and not all organic soils can be called peat soils. The classification of peat soils can be based more on their chemical and botanical properties. Sukiman Nurdin (2011). The process of peat formation begins with the existence of a shallow lake which is slowly overgrown by aquatic plants and wetland vegetation. Dead and decaying plants gradually form a layer which then becomes a transitional layer between the peat layer and the mineral soil underneath. Subsequent plants grow in the more central part of this shallow lake and gradually form layers of peat so that the lake becomes full (Agus and Subiksa, 2008).

Government Regulation No. 27 of 1991 aims to regulate peat swamp land ecosystems as rain storage areas and water sources. As a source of water, inland swamp (peat) greatly determines the condition of the water in the outskirts or downstream areas. Therefore, swamps in the upstream swamps or inland swamps need to be maintained as non-cultivated areas, which function as rain catchment areas and are "lakes" of water sources for surrounding agricultural areas. Rain storage areas should be located on peatlands. Peat has a high water holding capacity, 300-800% by weight, so that the water release capacity is also large. Deep peat (more than 3 m), has been declared a non-cultivated area with an area of at least 1/3 of the total area of peatland in the watershed area. Flooding is an obstacle that needs to be overcome, especially in the management of lebak swamps. The deep lebak swamp can be used as a reservoir for flooding.
The essence of peat swamp forest is an ecosystem that is easily fragile. If the management and treatment of peat swamp forest is not carried out properly, not carefully and unwisely, then the forest will not be productive. Assets in the form of peat swamp forests will lose their fertility and will disappear from potential natural resources. Peat swamp forest which is degraded due to illegal logging, looting and fires, must be rehabilitated immediately to restore its ecological function and to increase its productivity so that the ecosystem function can recover quickly. One solution is to do the right conservation.

The basic principles of conservation as affirmed in Law no. 5 of 1990 are: 1) Protection of life support systems; 2) Preservation or utilization of living natural resources and natural ecosystems in a sustainable manner so that the balance of nature and the quality of the environment is maintained; and 3) Perpetuation in the sense of preserving and maintaining the diversity of flora and fauna species.

In the peat forests of East Kalimantan, there is a wealth and diversity of peat swamp habitats with flora and fauna species, water reservoirs/stores, and carbon stores. The richness of

flora that contains various types of trees whose wood has high commercial value for industrial and construction materials. Various types of trees that have commercial value, as well as non-timber products in the form of sap, latex, tree bark, even contain extractive substances that are useful for medicinal purposes (medicinal plants).

Preservation of peat swamp forest is required to be carried out in a constructive and sustainable manner because it contains many resources that have the potential to improve the economy and improve people's welfare, in addition to saving the ecosystem. There are many types of trees that grow in peat swamp areas. Not only because of the wood but in the form of non-wood though. Among the sources and potentials in question are gums, rattan, medicines and others. Several types of high commercial wood, such as ramin (Gonystylus bancanus), marsh meranti (Shorea pauciflora, Shorea tysmanniana, S.uliginosa), jelutung (Dyera lowii), nyatoh (Palaquium spp), dragon lime (Calophyllum macrocarpum), and starur (Calophyllum lanigerum).) which has bioactive substances for anti-HIV virus, even star species Calophyllum cannum and C.dioscorii have anti-cancer bioactive substances.

Efforts to use peat swamp forests wisely aim to manage peatlands that are integrated with the need to improve economic, socio-cultural and ecological functions. The logical consequence of wise management is to increase community participation and from relevant stakeholders. Among the superior strategies that are required to be carried out are: 1) Protecting from damage for the purpose of ecological, social, economic, cultural and environmental functions that affect human livelihoods; 2) The use of peatlands must have an impact on socio-economic development; 3) Minimize and prevent fires; 4) Perform biodiversity conservation through the bioright approach; and 5) Take a scientific economic approach with implementation strategies for conservation of peat swamp forest, and rehabilitation of degraded peat swamp land. The call for peat swamp forest management in Indonesia, in line with Presidential Decree no. 32 of 1990 which is very necessary to maintain the sustainability of forests and peat swamp land.

Although conservation is important, for increasing productivity, it is necessary to pay attention to conservation tillage. This means that there is a land preparation method that leaves plant residues above the soil surface as mulch with the aim of reducing erosion and evaporation of water from the soil surface (Rachman et al., 2004). Utomo (1995) defines conservation tillage as a method of tillage which aims to prepare the land so that plants can grow and produce optimally, but still pay attention to aspects of soil and water conservation. Conservation tillage is characterized by reduced demolition/turning of the soil, the use of crop residues as mulch, and sometimes the use of herbicides to suppress the growth of weeds or other nuisance plants.

The advantages of implementing a conservation tillage system in proper land preparation include: 1) Saving energy and time; 2) Increase soil organic matter content; 3) Increase the availability of water in the soil; 4) Improve soil friability and increase soil porosity; 5) Reduce soil erosion; 6) Improve water quality; 7) Increase soil fauna content; 8) Reducing the use of machinery such as tractors; 8) Save fuel usage; and 9) Improving air quality (Rachman et al., 2004). The conservation process is carried out in a participatory manner with a socio-cultural approach.

Sustainable Peatland Conservation Requirements for Socio-Cultural Approach

Although the goals of socio-cultural and socio-economic development always have positive and negative impacts on social change, a development process must have a positive impact or goal on people's lives, including socio-cultural development itself. It is understood that the main objective of socio-cultural development is to realize a society's welfare, marked by an

increase in the quality of life that is decent and dignified. A positive development goal is if the strategy is to optimize community participation and other stakeholder elements. Santoso (1998:125) asserts that the success of development in community participation can be measured by looking at how involved the community is in the implementation of development (conservation) and how much the community contributes to development (conservation) in achieving development goals (management of peatlands). It is understood that community participation, either directly or indirectly, is a supporting factor and determining the direction of development. The most important aspects of community participation in program management are: 1) The decision-making process; 2) Determine priority needs; 3) Show their contribution in the form of ideas, energy and funds.

Wicaksono (2010) asserts that participatory planning is an effort made by the community to solve the problems they face in order to achieve the expected conditions based on their needs and abilities independently. The contents of the aspects of needs and capabilities in participatory planning include: 1) Planning is prepared by taking into account the aspirations of the community that fulfills an attitude of mutual trust and openness; 2) Participatory (involvement) of all elements of gender-based stakeholders; for example through meeting forums, getting equal opportunities in the contribution of ideas without being hampered by the ability to speak, time and place; 3) Dynamic. This means that planning reflects the interests and needs of all parties so that the planning process takes place in a sustainable and proactive manner; 4) Synergy. This means ensuring the involvement of all parties so that it is consistent with cooperation between administrative and geographic areas as well as paying attention to interactions among stakeholders; 5) Legality. Development planning is carried out with reference to all applicable regulations and upholds community ethics and values, and does not provide opportunities for abuse of authority and power; and 6) Feasibility. This means that planning must be specific, measurable, and can be executed by considering time and cost.

Peatland conservation based on a socio-cultural approach focuses on understanding socio-cultural aspects such as language, customs and traditions, social communication, values and norms. Everything is an integral unit in the context of a socio-cultural approach. Language becomes a more effective communication tool. Customs and traditions are closely related to the process or pattern of behavior of a society and even become the driving force for positive and harmonious interactions, so that they become an important part of the life of the community concerned. In addition to customs and traditions, applicable values and norms must also be obeyed to establish social life, including in all matters relating to community activities. It is known that the social changes that occur have an effect on the declining values and norms that exist in society. Next is the role of social communication. This aspect is the most important social aspect because its function is to maintain harmony in life in society, especially the nature of humans as social beings.

Conservation with a socio-cultural approach in order to pay attention to the role, benefits, threats and damage to peatlands, it is necessary to make joint efforts and commitments between stakeholders including the community in it. All parties are focused on efforts to save and preserve peatland areas and all their potential, functions and benefits for the welfare of the community and ecosystem. The stages of conservation activities based on a socio-cultural approach include: 1) Identification and Inventory of Potential Peatland Areas; 2) Interpretation of the function of peatland areas and socialization to the wider community; 3) Identification of sustainable benefits; 4) Access to sustainable use for the surrounding community; and 5) Protection of Peatland Areas.

Identification and Inventory of Potential Areas of Peatlands. This activity is a step that must be done before the utilization and conservation efforts are integrated and comprehensive. Through a socio-cultural approach in the form of optimizing community participation in planning, it is certain that the potential and resources in peatlands will be identified and inventoried.

Interpretation of the function of the peatland area and outreach to the wider community. The principle of participation is educational value. Regarding the function of peatland areas, it is important to disseminate information to all stakeholders, especially regarding the potential, functions and benefits of peatlands as part of the source of life.

Identify sustainable benefits. Utilization of the potential of peatland ecosystems is only possible as long as it is done based on knowledge and understanding of the existence of populations and habitats of the inhabitants of peatland areas that contain important potential but also have limitations. Therefore, it is important to understand together the strategy for sustainable use of peatlands.

Access to sustainable use for the surrounding community. The results of the identification of benefits and solutions for sustainable use are developing sustainable use activities and providing access for the community, especially communities around peatland areas, so that in turn they can become conservationists of peatland areas, even forming an Independent Village Care for Peat (DMPG).

Protection of Peatland Areas. Considering that the peatland ecosystem does not recognize government administrative boundaries, conservation efforts must be carried out through a socio-cultural approach by prioritizing cooperation and coordination between elements of stakeholders in terms of: 1) Protecting forests growing on peatland areas; 2) Determine a certain area to be managed as a representative of peatland ecosystem conservation; 3) Carry out utilization actions by applying conservation principles in a planned and consistent manner, for example being consistent in preserving objects and preserving resources. It is realized that the conservation function tends to be degraded because peatland management does not pay attention to the application of the principle of sustainable peatland use.

CONCLUSION

From the explanation above, it can be concluded that:

1. Peat is part of the source of life that must be preserved.
2. By preserving peat and peat land, it means that you have saved the ecosystem in it.
3. Conservation of peatlands can be done through structural and non-structural approaches.
4. Sustainable peatland conservation can be done with a socio-cultural approach.
5. The socio-cultural approach in conducting peat conservation includes various patterns that have been carried out by the community since the days of their ancestors from generation to generation.
6. The socio-cultural approach emphasizes the aspect of local wisdom in processing peatlands from preparation to production and post-production.
7. The transformation that occurs in society is an innovation without losing local wisdom. Proper land preparation for agriculture means: a) Saving energy and time; b) Increase soil organic matter content; c) Increase the availability of water in the soil; d) Improve soil friability and increase soil porosity; e) Reducing soil erosion; f) Improving water quality; g) Increasing soil fauna content; 8) Reducing the use of machinery such as tractors; h) Saving fuel usage; and i) Improving air quality.

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