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Forest Conservation & Environmental Awareness in Kayan Mentarang National Park in Malinau District, North Kalimantan Province

Dolvina Damus[1], Zaenal Kusuma[2], Bagyo Yanuwiadi[3], Imam Santoso[4]

[1]Doctoral Program of Environmental Science, Brawijaya University, Indonesia

[2]Faculty of Agriculture, Brawijaya University, Indonesia

[3]Faculty of Mathemathic and Natural Sciences Brawijaya University, Indonesia

[4]Faculty of Agricultural Technology, Brawijaya University, Indonesia

Abstract: ***This study aims to describe and analyze comprehensively and in detail about the process of managing conservation forest areas carried out by several parties, namely the community and the government as stakeholders. Based on the conditions of the KayanMentarang National Park which are different from other conservation areas, where the results of the research show that the process of collaborative management in the KayanMentarang National Park area found obstacles in terms of communication and coordination from planning to supervision, parties could only play a limited role, and that indigenous peoples have land rights in their customary territories within the region.***

Keywords: Forest, Conservation, Environment, KayanMentarang, National Park

1. Introduction

Community forest management has been identified as a win-win option for reducing deforestation while improving the welfare of rural communities in developing countries. Despite considerable investment in community forestry globally, systematic evaluations of the impact of these policies at appropriate scales are lacking[1].

The global community has recognized the importance of forests for biodiversity, and has prioritized the preservation of forest biodiversity and ecosystem functions through multiple multilateral agreements and processes such as the Convention on Biodiversity's Aichi Targets and the Millennium Development Goals. The Global Forest Resources Assessment (FRA) provides one mechanism for tracking progress toward such goals in three particular areas: primary forest area, protected forest areas, and areas designated for the conservation of biodiversity[2]

KayanMentarang National Park was designated as a Nature Reserve in 1980 by the Indonesian Minister of Agriculture through the Decree of the Minister of Agriculture on the grounds that the biodiversity of the area is high with the type and genetic diversity stored inside. However, after the indigenous people who settled in this area learned of the appointment of this area with the status of a Nature Reserve in 1994, when a boundary arrangement was carried out by the Ministry of Forestry, there were violent rejection conflicts and even threats by indigenous peoples.

Based on the provisions of Law Number 5 of 1990 that in a Nature Reserve is a nature reserve area because of its natural condition has the characteristics of plants, animals, and its ecosystem that needs to be protected and its development takes place naturally, no permissible activities result in changes to the integrity of the Nature Reserve area.

The proposal to change the status of the Nature Reserve into a National Park is an effort to accommodate the interests and aspirations of the community. As for what is called a national park according to Law No. 5 of 1990, "natural conservation areas that have original ecosystems, are managed with a zoning system that is used for the purpose of research, science, education supporting cultivation, tourism and recreation."

The pattern of life of sub-Dayak groups in the KayanMentarang National Park area in principle are inseparable from the surrounding environment both forests, rivers, and other natural resources. This is related to the livelihoods of the people who generally cultivate, hunt, catch fish, gain gold and collect non-timber forest products such as rattan, agarwood, medicinal ingredients, and others[3].

Forest conservation is the practice of planting and maintaining forested areas for the benefit and sustainability of future generations. The conservation of forest also stands & aims at a quick shift in the composition of trees species and age distribution. Forest conservation involves the upkeep of the natural resources within a forest that are beneficial to both humans and the environment. Forests are vital for human life because they provide a diverse range of resources: they store carbon &act as carbon sink, produce oxygen which is vital for existence of life on the earth, so they are rightly called as earth lung, help in regulating hydrological cycle, planetary climate, purify water, provide wild life habitat(50% of the earth's biodiversity occurs in forests), reduce global warming, absorb toxic gases & noise, reduce pollution, conserve soil,mitigate natural hazards such as floods& landslides & so on[4].

The current constraint is that there is still no understanding between the various parties about the importance of national parks as conservation areas as a result of differences in interests, for example the private sector who want to exploit the potential of timber in the national park area national, and people who want to use part of the area to grow food crops and industrial crops. Likewise, Malinau District Regulation No. 4 of 2007 concerning Malinau District As a Conservation District, still cannot be carried out optimally.

2. Research Purposes

This study aims to describe and analyze comprehensively and in detail about the process of managing conservation forest areas carried out by several parties, namely the community and the government as stakeholders. In addition, this paper offers a variety of strategies for forest conservation & awareness for people, which play an important role in maintaining the right environmental balance. So that joint management between the community and the government can take place well.

3. Forest Conservation

Forests provide critical ecosystem goods and services such as food, water, shelter, and nutrient cycling among others, and play a fundamental role in conservation of biodiversity. According with recent studies, forests cover nearly 30 percent of the Earth's land area[5].

While primary forest area is assumed to relate to biodiversity at the global scale, protected area and biodiversity conservation area can be thought of as measures of conservation effort. Below we report the results of multiple regression analysis directed at examining the impacts of these two measures of conservation effort as well as other variables (population density and per capita GDP) on total forest area. The main question of interest is whether an increase in protected and biodiversity conservation area are associated with an increase in forest area, all else remaining the same[2].

The loss and fragmentation of forest habitats by human land use are recognised as important factors influencing the decline of forest-dependent fauna. Mammal species that are dependent upon forest habitats are particularly sensitive to habitat loss and fragmentation because they have highly specific habitat requirements, and in many cases have limited ability to move through and utilise the land use matrix[6].

For sustainable management of forest conservation areas that provide global public goods in mitigation of climate change and conservation of biodiversity, local communities need to be compensated for the direct on-site income losses from alternative land use options[7].

4. Research Sites

Geographically, Malinau Regency is located at 114˚35'22 '- 116˚50'55' 'East Longitude and 1˚21'36' '- 4˚10'55' 'North Latitude. The total area of Malinau Regency is around 40,088.41 Km2. The area of Malinau Regency is dominated by hills and mountains. The Malinau Regency area is directly adjacent to Sarawak Malaysia in the west, Nunukan Regency in the north, Bulungan Regency in the east, and the southern part bordering West Kutai Regency.

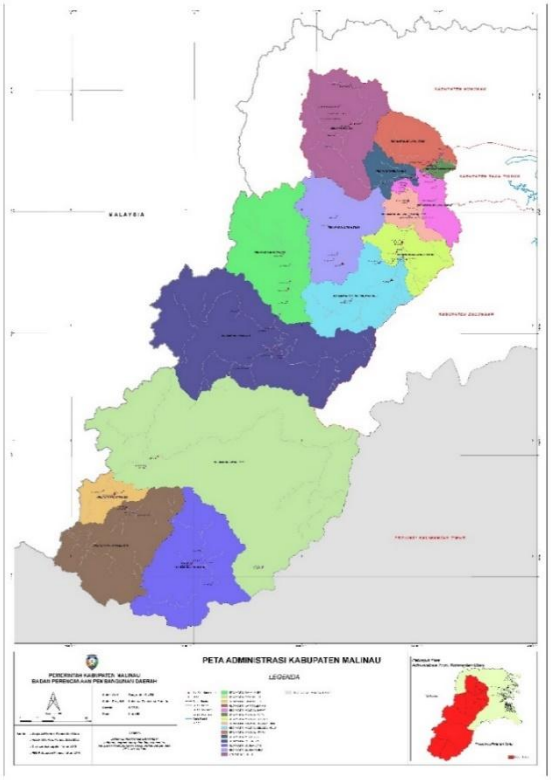

Figure 1: Map of the Malinau District Area

The location of this research is in KayanMentarang National Park in Malinau District, North Kalimantan Province. While the research site is the apparatus working room that becomes informants, traditional houses, places where people gather and work, part of the forest area of KayanMentarang National Park, and so on.

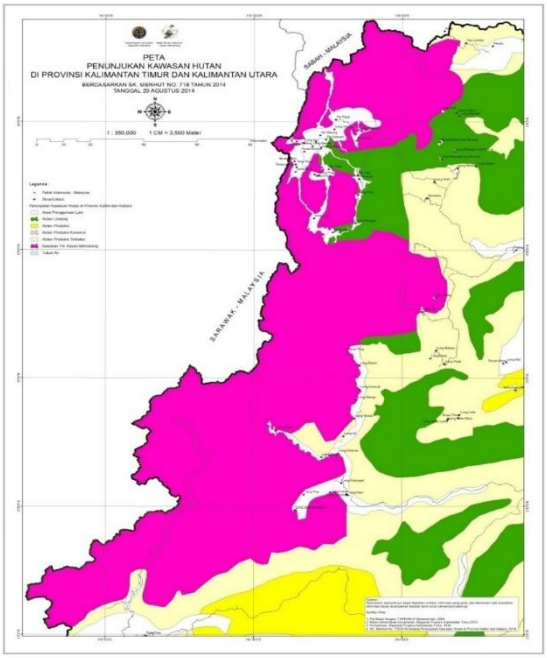

Figure 2: Map of KayanMentarang National Park

KayanMentarang National Park with an area of 1,360,500 hectares, is the largest unit of primary forest and old secondary forest that remains in Kalimantan and throughout Southeast Asia. This National Park area is located in North Kalimantan with humid weather and temperatures of 16 C - 30 C. This National Park has an altitude of 200 - 2258 meters above sea level and has around 3,100 mm of rainfall per year.

Because of its geographical location, KayanMentarang National Park is rich in biodiversity, and ecosystem types range from lowland valleys, mountainous highlands, and steep mountainous groups formed from various sediment and volcanic formations. The main types are Dipterocarp forest, Fagaceae forest-Myrtaceae or Ek forest, middle and high mountain forest (above 1,000 m above sea level), agathis forest, kerangas forest, swamp forest which is limited in extent, and a special type " moss forest "on mountain peaks above 1,500 m above sea level. In addition, there are also various types of secondary forests that make this area have a high diversity and become a habitat for various types of high-value plants and animals, rare and protected species.

There are several types of plants that have not all been identified because they are new plant species in Indonesia. In addition, hundreds of bird species (310 species) have been inventoried, including new species for Kalimantan and Indonesia, Kalimantan endemic species (28 species) and endangered species that have been registered by ICBP (International Committee for Bird Protection), and there are several types rare mammals such as leopards (*Neofelisnebulosa*), sun bears (*Helarctosmalayanuseuryspilus*), white forehead langurs (*Presbytisfrontatafrontata*), and bulls (*Bosjavanicuslowi*).

Figure 3: Area of KayanMentarang National Park

5. Data Source

The approach in this study is qualitative in nature with the intention of understanding the phenomenon of the management of KayanMentarang National Park. Qualitative research used in this study aims to describe, explore in detail and describe the reality of social and cultural behavior by using descriptive data in the form of results of data collection in the field produced in the form of words, both written and oral and behavior of the informants studied. In addition, it also uses document data that is tailored to the data needs in each focus of the study.

6. Data Analysis

Analysis of this research data, using the Interactive Model Data Analysis Model shown in the following figure 4.

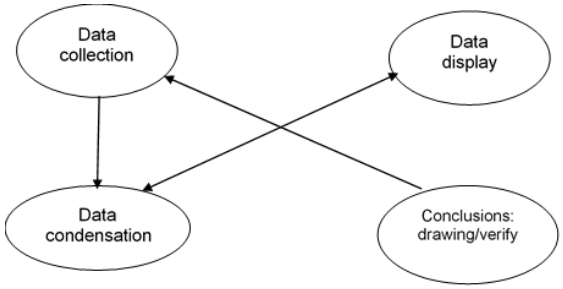

Figure 4: Component of Data Analysis: Interactive Model

The researcher analyzed all observational and interview data to illustrate existing qualitative models or those practiced in KayanMentarang National Park conservation forest management. Then the model is analyzed for its shortcomings and strengths to then describe the recommended model

7. Research Data Results

From the results of the data source. The researcher draws a conclusion, that the division of roles and functions of each party that contributes to collaborative management is still not optimal. Communities that should have an important role in collaborative management, but feel they do not know any information about the collaborative management of KayanMentarang National Park itself.

The community feels that it is only an object of the KayanMentarang National Park collaborative management. The community feels that they are not stakeholders in management, while in the workshop results community groups can enter into parties with an interest in having historical values, or those who depend on their lives through natural resources in the KayanMenratarang forest, so it is important to be included in this management so that there is no social conflict, even now the community's role is still very small in this collaborative management.

This collaborative management is very suitable for the sustainability of the KayanMentarang Conservation Forest Area. However, improvements still need to be made, especially at the program implementation stage and in terms of division of roles and coordination between the parties. Therefore, the way that can be done is by strengthening human resources aimed at all actors or stakeholders involved as well as strengthening institutional capacity aimed at the sustainability of organizations in the management of KayanMentarang National Park to ensure sustainable forest conservation and welfare and collaborative management is expected to occur at the level of policy making

Based on data from the Ecositrop study, there were at least 506 types of Biodiversity that were successfully inventoried in the Upper Bahau Hulu District and Long Alango Regional SPTN Pujungan. consists of 325 species of flora, of which 64 species are herbaceous, liana, epiphytic, and palm plants. While the fauna types were 181 types consisting of 91 species of birds, 28 species of fish, 38 species of herpetofauna (17 species of reptiles & 21 types of

amphibians), 18 species of mammals, and 6 types of primates.

8. Conclusion

The management of KayanMentarang National Park is divided into 3 regions, namely the National Park Management Unit of the area of I Long Bawan (Nunukan), National Park Management Unit of the region II Long Alango (Malinau) and National Park Management Unit region III Long Ampung (Malinau).

The KayanMentarang National Park area is very broad, the data we get is new at National Park Management Unit II and this is extraordinary. We need to explore more in other regions at National Park Management Unit I and KayanMentarang National ParkNational Park Management Unit III with study institutions and indigenous peoples. this is a form of awareness that in Indonesia there are areas with abundant natural wealth, as the future potential of potential must be developed together

Improvements need to be made in various sectors, ranging from communication between parties, the level of participation of collaborating parties, collaboration mechanisms, the application of the principles of collaboration in management, the commitment of the parties in collaboration as outlined in joint work programs, including sustainable funding aspects that need to be mutually agreed

References

[1] S. Raharjo *et al.*, "Community forest management in Indonesia: Avoided deforestation in the context of anthropogenic and climate complexities," *Glob. Environ. Chang.*, 2017.
[2] D. Morales-Hidalgo, S. N. Oswalt, dan E. Somanathan, "Status and trends in global primary forest, protected areas, and areas designated for conservation of biodiversity from the Global Forest Resources Assessment 2015," *For. Ecol. Manage.*, vol. 352, hal. 68–77, 2015.
[3] D. Damus, Z. Kusuma, B. Yanuwiadi, dan I. Santoso, "Participative and Inclusive Collaborative Management of Conservation Areas in Kayan Mentarang National Park North Kalimantan Indonesia," *Int. J. Civ. Eng. Technol.*, 2019.
[4] K. V. Pawar dan R. V. Rothkar, "Forest Conservation & Environmental Awareness," in *Procedia Earth and Planetary Science*, 2015, vol. 11, hal. 212–215.
[5] R. J. Keenan, G. A. Reams, F. Achard, J. V. de Freitas, A. Grainger, dan E. Lindquist, "Dynamics of global forest area: Results from the FAO Global Forest Resources Assessment 2015," *For. Ecol. Manage.*, vol. 352, hal. 9–20, 2015.
[6] C. A. McAlpine *et al.*, "The importance of forest area and configuration relative to local habitat factors for conserving forest mammals: A case study of koalas in Queensland, Australia," *Biol. Conserv.*, vol. 132, no. 2, hal. 153–165, 2006.
[7] M. Tilahun, L. Damnyag, dan L. C. N. Anglaaere, "The Ankasa Forest Conservation Area of Ghana: Ecosystem service values and on-site REDD + opportunity cost," *For. Policy Econ.*, vol. 73, hal. 168–176, 2016.