

The Study of Economic and Social Karst Region East Kutai Regency

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Abstract

Karst Mountains is a landscape of limestone mountains are concatenated to form a corridor-biodiversity, ecosystem where the lives of millions of species of flora and fauna supporting life balance. Geological conditions, geomofologis, and hydrological karst ecosystem make the area of karst ecosystems have different limitations in other areas such as volcanic regions, coastal areas, and alluvial plains region. Limitations protruding from the karst ecosystem are thin soil conditions and scarcity of surface water. Mangkalih Sangkulirang Karst is a compact region's largest karst mountains in East Kalimantan which are in Sangkulirang Peninsula, extending to the Cape Mangkaliat a total area covering 430,000 hectares. Social mapping studies to be important to know and recognize and direct the pattern of social life in the communities living around the mountain Karst to ensure this region maintained socio-cultural conditions of local communities living in the area around the area of karst ecosystem Sangkulirang-Mangkuliati, discovered identify stakeholders who could be positive or negative, social and cultural issues, including issues of politics, economics and the environment, has become a crucial factor for enterprises to realize the Karst region a world heritage. Creative economic development can be done in communities around the region should karts friendly activities region with the most effect can minimize the damage to the Karst environment itself.

Keywords: karst region, Sangkulirang, world heritage, ecosystem

1. Introduction

Management of natural resources both renewable and non-renewable should be focused on the sustainable and equitable management that can be used as a support for the life of the surrounding community and society. Flow benefits and functions of natural resources should provide a major contribution to the achievement of the welfare society have who have lived for generations and have a high dependence on a environment. Therefore the role and understanding of local communities, especially those living in the area of natural resource management very important as a major factor to be considered in the formulation of government policies related to natural resource management.

Karst Mountains is a landscape of limestone mountains are concatenated to form a corridor-biodiversity, ecosystem where the lives of millions of species of flora and fauna supporting life balance. Geological conditions, geomofologis, and hydrological karst ecosystem make the area of karst ecosystems have different limitations in other areas such as volcanic regions, coastal areas, and alluvial plains region. Limitations protruding from the karst ecosystem is thin soil conditions and scarcity of surface water. The thin soil and limitations of surface water in karst ecosystem is a permanent barrier

for life on it, either as a growing medium as well as a habitat for organisms that live in it. The loss of vegetation cover, causing soil erosion is accelerated and left the rock outcrop on the slopes of karst hills. Land conditions with exposed rock is what makes the karst ecosystem restoration efforts are relatively difficult. Therefore, the necessary protection and management of karst ecosystems to prevent damage to the karst ecosystem well as a growing medium as well as a habitat for organisms that live in it. This limitation makes the karst ecosystem carrying capacity is low. The low carrying capacity of the karst ecosystem then causes karst ecosystems are very sensitive to environmental changes. Destruction that occurs in them either by natural factors and human factors especially for exploratory activities will cause damage more quickly than other regions. Besides, take a long time for recovery even unrecoverable

In East Kalimantan karst region can be found in almost every district, among others Nunukan, Malinau, Bulungan, Berau, East Kutai, Kutai Kertanegara, Kutai West, North and Paser. Economically, the karst area becomes very prominent since the discovery of the economic value of edible bird's nest that is often found in caves in the region karst. Trade bird nest constantly rising social and economic dynamics around the karst region continues to experience growth with the increase in arrivals migrants (up from outside the province) who seek his fortune from the discovery and collection of bird's nest

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swift let nests walet. Whereas besides, social, economic and cultural historical especially unique karst region also has an important role for several generations of local communities [1].

Mangkaliat Sangkulirang Karst is a compact region's largest karst mountains in East Kalimantan which are in Sangkulirang Peninsula, extending to the Cape Mangkaliat a total area covering 430,000 hectares. Mangkaliat Sangkulirang Karst is a compact region's largest karst mountains in East Kalimantan which are in Sangkulirang Peninsula, extending to the Cape Mangkaliat a total area covering 430,000 hectares.

Karst Mountains Region Sangkulirang-Mangkaliat are in two districts of Berau and East Kutai. Most of the Karst region is located in the East Kutai Regency covers the sub-Bengalon, Kaliorang Sangkulirang Kongbeng, Authorship, and backrest. This area is producing millions of liters of water for a variety of plant life, animals and humans. This region is upstream of the 5 major rivers namely Bengalon River, Authorship, Tabalar, Lesan and Pesab. Karst springs East Kalimantan into a number of major rivers, and plays a major role led to hundreds of springs on the coast, on the sea and on offshore islands. Karst region is spread from the west to the east coast inland and coastal areas are Eastern reefs coral fauna habitat.

Social mapping studies to be important to know and recognize and direct the pattern of social life in the communities living around the mountain Karst to ensure the region is well preserved. Knowing the social and cultural conditions of local communities living in the area around the area of karst ecosystem Sangkulirang-Mangkaliat, stakeholders recognize which may be positive or negative, social and cultural issues, including the issue of politics, economics and the environment, has become a crucial factor for businesses realize Karst region a world heritage.

2. Literature Review

Karst Mountains and the surrounding area - hereinafter referred to as "Karst" - covers an area of approximately 10,000 km². The region includes 13 administrative districts, namely Bear-Bear, Batuputih, Talisayan, Biatan, Tabalar, and Kelay in Berau District, and the District backrest, Sangkulirang, Authorship, Ground, Kaubun, Bengalon, and Kombeng in East Kutai. Similarly Karst region upstream region Lesan River, River Tabalar, Inaran River, and the river Dumaring in Berau, as well as the headwaters of the menubar, Authorship and Bengalon in East Kutai.

Its ecosystem biodiversity has very high. The caves scattered in the region also save the rich historical heritage as a legacy of early human life. Authorship River upstream region, Bengalon River and River inhabited Lesan Dayak Lebbo, Basap and Kutai is now a wildlife refuge area Orangutan who fled to this area due to their habitat in lowland areas experiencing forest fires and

conversion for palm oil and coal mining. Region upstream of the three Watersheds has a strategic geographical position

because in addition to direct border between districts, also directly adjacent to the protected forest area of the country such as the Saw Mountain Protection Forest, Protected Forest Mount Forest Mountain Protection. Historically a cave in this region also keeps a history of civilization. Consisting of karst limestone rock was once used as a shelter for thousands years.

Population cave man identified to date amounted to 37 strategic. This puts the region upstream Lesan, Authorship and Bengalon as important veranda in the program /project biodiversity conservation and archeology to be managed based on the principles of conservation and sustainable development (conservation and sustainable development)[2].

Karst mountainous region Sangkulirang-Mangkaliat East Kalimantan (hereinafter called karst region) covers a vast territory in East Kutai and Berau. In Fig. 1 are shown the names of the existing sub-region, namely the sub-region Tintang, Sub-Regions Perondongan, Sub-Region Estuary Month, and Sub-Region Lepoq Stone, Sub-Region Implant in Sub-Region Manubar, the Sub-Region Sekrat, Sub-Region Langsung edges, and the Sub-Region Kendolo Kutai National Park. Spread Map Karst District. East Kutai.

Sangkulirang-Mangkaliat karst area which is very unique biophysical and have infinite historical value on the discovery of a relief image (Arca) in limestone caves in some places, showing the importance of social studies more comprehensive to map the actual situation of social, economic and cultural dwellers Berau-Kutim. karst landscape that is quite extensive karst areas and limited accessibility caused this region has isolated and minimal with information.



Fig. 1. Map of Sub Karst District East Borneo

Basap and Dayak Dayak Lebbo are often identified as native inhabitants Sangkulirang-Mangkaliat karst region, of the results of this study still requires deepening and expansion in order to compile and comparison. The fact that the term 'Basap' and 'Lebbo' only title that is a generalization to the population in karst areas once considered still 'wild' and did not convert to Islam, an indication that the tribal groups as Dayak Basap did not all

have a history, kinship and the same culture. Relations with the outside world that has existed since the bird nest became an important commodity in the trade of forest products in the Sultanate of Berau and Kutai in the past, led to racial mixing in the community tribes karst area residents has been going on since long. Control authorities or the Dutch colonial Empire, which passed by the Government of Indonesia to the weak and poor villages and settlements definitive in river upstream region-Mangkaliat Sangkulirang This in turn increasingly 'distanced' community referred to as 'the Basap' and 'the Lebbo' is against the true identity of their identity. Instead erroneous information that a negative connotation to the groups 'of people Basap' and 'people Lebbo' reinforces the hegemony that coastal residents, namely the Kutai and the Berau (BANUA) are different groups despite having many similarities and kinship.

3. METHODOLOGY

Studies carried out in several locations in the village of karst areas identified Sangkulirang Mangkaliat are indigenous Dayak Basap, Dayak Lebbo dan Kutai as a native inhabitants of karst Sangkulirang Mangkaliat. been Opposite District of Authorship Village, Village Edge Langsat in Bengalon East Kutai Regency, and the village Sekrat Subdistrict Kaliorang.

As a comparison some villages or rural locations also identified are Dayak groups "Basap" and "Lebbo" who still have kinship and adjacent to the study area was also conducted observation visits, among others, namely Kampung Merapun in District Kelay Berau district, and village Authorship In, Keraitan village and Village Cut Lembak in East Kutai. Chosen these villages is based on several considerations, namely: Study villages are geographically located in a compact area in the upper three important rivers in the Karst region Sangkulirang Mangkaliat the Village Authorship Opposite upper watersheds, and the Village Edge Langsat Bengalon upper watersheds; Forests in the watershed upstream of the three rivers (Lesan, Authorship, bengalon) can be said to be 'better' and has not done much good conversion to plantations, transmigration, mining, and conversion to other non-forestry sectors. These conditions have important implications for the development of conservation programs and natural resource protection around karst Sangkulirang Mangkaliat who have biophysical and legality of forest areas remaining.

Villages in upper watersheds inhabited Lesan Lebbo Dayaks still dominant and isolated, while the Dayaks Basap and Kutai in DAS Authorship and besides no longer dominant Bengalon also have more open access accessibility and social differences are important for the comparison intervention of external factors[3].

Karst landscape is a landscape below the surface and in the surface formed typically develops as a result of water dissolving the limestone rock and / or dolomite [4] it is

rock Limestone karst (carbonate and dolomite) which has undergone karstification Fieldwork to collect socio-economic data held districts with the sample in the karst region around the village, the village in the district Pengadan Authorship and Edge Langsat in Bengalon.

Economic Mapping is done by creating a rank to describe the distribution of wealth created conditions not conditions inhabitants per-household welfare but by genius-type of profession. Rank order starting from groups of people with the kind of work that is considered the most profitable financial and put in question at the bottom level of welfare are groups of people who are considered to have the financial income and the lowest level of well-being.

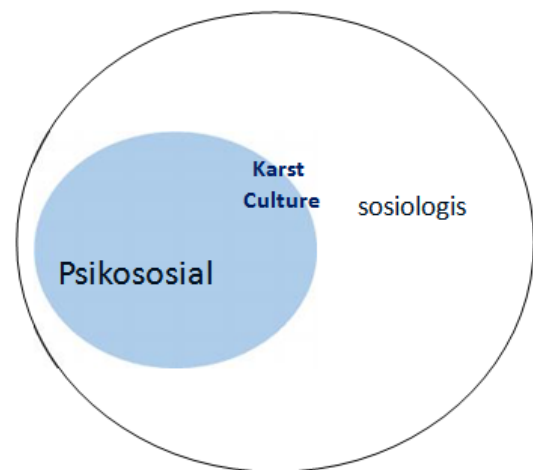


Fig. 2. Karst culture landscape (Pindi Setiawan, 2010)

4. Result

Studies on the economy since the beginning restricted to economy related directly or indirectly to the mountains karst. From field found under these conditions.

Table 1
The new economic opportunities in rural Procurement

Opportunities	Potential	Barriers to Development
Plantation/ agriculture	There is PPL Officers Agricultural is still very wide There was a few farmer group The help of heavy equipment to print rice plot already been done.	Counseling is very rare even to say never existed after the formation of farmer groups Farming experience permanent / undeveloped, synthetically local knowledge such as hereditary experience (in Khobun / other villages have succeeded because "the Upstream" has farming culture "modern") Farming group has long been stalled Rice plots that had been printed now become a thicket back
Tourism	Mount Kapur, thermal baths Long river in: Art: traditional games (chopsticks, Logo, Gangsing), Dance Jepen (Dayak-Kutai)	Supporting them how and where?
Fisheries cages river	There elongated river beside the village	Completely untried
Guide / guides for mountain climbing chalk	Many people are still unemployed	No English ability

Source: Results of Field Research, 2014

5. Conclusion

Creative economic development can be done in communities around the region should karts friendly activities region with the most effect can minimize the damage to the Karst environment itself.

Sustainable development is a process of development (land, city, business, community, etc.) principled "meets the needs of the present without compromising the fulfillment of the needs of future generations" according to the Report of the United Nations, 1987. Sustainable development is the translation of English, sustainable development. One factor that must be overcome to achieve sustainable development is how to improve the destruction of the environment without compromising the needs of economic development and social justice.

In a unique karst region in the Almighty God bestowed in the East Kutai Regency need serious handler. The

concept of profit maximization should be in line with the increase well-being of the community surrounding karst region without changing socio-cultural conditions or in other words to benefit three main components (economics, social and environmental). Community as a top destination development, with pluralism in social relations and the environment as a buffer karst landscapes have a high degree of sensitivity to environmental changes various form. Be expected development pattern as shown in Fig. 2.

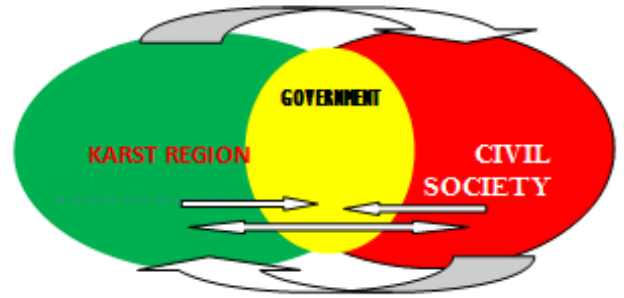


Fig. 3. The Concept of Community Development Karst

Fig. 3 show the concept can be explained that the degradation of the karst region may be affected by the involvement of the community around it karst region is supported by the results of field research on the karst region. Where the distance between the karst area with palm oil plantations range of 500 s / d 1000 meters, plus the plantation society that no longer is. Furthermore left fence contained traditional farms also be in a position right on the lip of the karst region.

However, if properly managed farm area is supposed to be capable of supporting ecosystems karst region. Distance expanded outside the region and farmers are required to plant the type of wood that has a good economic value.

In the context of the community there is also a component of capital holders who have a greater interest to do the expansion in the form of investment. Government as the holder of power would have to be more selective in choosing investors who will invest. Limiting licensing palm plantation area development around the karst region. So the government acting as a counterweight (balanced regulation) against both component above.

Governments can also help the preservation of the region by issuing rules that are based on the results of research. Minimum distance between the area with residential, agriculture and plantations. In addition, the utilization of the community around the area as an informant for the change of governance, a visit to the phenomena that occur need to be considered and be handled quickly and appropriately. The goal is to avoid conflicts of interest between society, government and investors.

References

[1] Akhmad Wijaya, Taufik Hidayat dan Faisal Kairupan, Studi Etnografi dan Pemetaan Sosial Masyarakat Sekitar Ekosistem Karst

- Hulu Lesan-Hulu Karang, Kalimantan Timur. (The Nature Conservation).
- [2] Kaltim dalam Angka 2013, BPS Prov. Kalimantan Timur
 - [3] Pindi Setiawan dan Wawan Setiawan, 2012, Karst Sangkulirang, Dinas Pariwisata Kutai Timur
 - [4] Kepmen Energi dan Sumber Daya Mineral No.17 tahun 2012 dan Rancangan Peraturan Karst Ekosistem