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Ecotourism Potential in Meratus Geopark, South Kalimantan

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Abstract

Ecotourism development in Mt. Meratus, South Kalimantan, is crucial to support the future development and forest use in the South Kalimantan area. Ecotourism provides a mechanism to use forest resources sustainably while at the same time provides opportunities for local economic growth. This paper aims to describe the potential resources of Mt. Meratus to support the ecotourism program in South Kalimantan. The development of ecotourism in Mt. Meratus has been crucial since the area has a high level of geo-biodiversity and cultural resources, which are important for the future human being. Protecting and promoting indigenous knowledge of the community in the Mt. Meratus geo-site area are important to support sustainable development programs, including the development of ecotourism as one of the practices of responsible travels to the natural ecosystem.

Keywords: biodiversity conservation, geotourism, Mt. Meratus Kalimantan.

INTRODUCTION

Ecotourism recently becomes one of the significant tourism in the natural area. Ecotourism grows as a response to the increase of travelers to explore nature, especially the bio-geological phenomena of a particular area. Ecotourism has been identified as an important tourism sector to promote sites with rich biodiversity and geological features into the tourism business. Ecotourism is an educational tool to promote environmental conservation, which is crucial in preparing future generations. Ecotourism provides opportunities to employ the local community in tourism sectors. Therefore, ecotourism contributes to local economic growth [1,2].

Ecotourism is especially important in tropical developing countries, including Indonesia. The ecotourism development has been reported relevant to the environmental programs, in which funding opportunities are available to support conservation programs. Area with abundance high level of biodiversity is a potential site for ecotourism development programs [3]. Ecotourism attraction has been identified as diverse, ranging from animals to plants. Many species with endemic status and rarely found on the earth are the most attractive object. Many people desire to visit such plants and animals in national parks or wildlife areas.

Kalimantan is one of the islands with a high biodiversity level. The biodiversity level of Kalimantan has been identified as high and contributes to global human life. The biodiversity of Kalimantan encompasses a high number of animals, plants, and microbes [4]. However, problems with the future of sustainability in Kalimantan are complicated and need a comprehensive strategy to promote proper conservation strategy. The economic aspects have been contributed to the rapid lands uses changes. Many areas with the luxurious tropical forest have been converted to settlement, mining, and palm oil cultivation. Scholars noted that sustainable natural resource use is important to ensure the sustainability of the living system in Kalimantan Island [5,6].

The recent trend in tourism argues that conserving biodiversity conservation in nature-based tourism destinations is crucial. It is especially important in numerous fragile ecosystems such as in Kalimantan. With the spectacular biodiversity level, tourism activity in Kalimantan should be able to support conservation. The challenges, however, is to describe biodiversity resources comprehensively and draw proper planning and design to facilitate tourism growth in environmentally sustainable principles [3,7]. The

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tourism activities must be given attention and taken out carefully by analyzing all the aspects regarding them so that they might not impose harmful impacts on the environment [8]. The paper aims to describe the geo-biological aspect of Mt. Meratus in South Kalimantan. This recent information is crucial for the future development of Mt. Meratus as a geo-ecotourism site.

Geological feature of South Kalimantan

Kalimantan is a unique island in the Indonesian archipelago. Compare to the nearest island in the Indonesian archipelago chains, Kalimantan has a low mountain number. Sumatra in the west of Kalimantan and Java in the south of Kalimantan has been known as the volcanic islands, means that these two islands have abundance active volcano. The Sulawesi Island in east of Kalimantan has some important active volcanoes [4].

Kalimantan has been characterized by luxurious tropical forest. It has been known that Kalimantan consists of Dipterocarpaceae forests. The luxurious tropical rain forest of Mt. Meratus is home to numerous birds, mammals, reptiles, and insects. Mt. Meratus has known as one of the hot spots of biodiversity in southeast Kalimantan. Biodiversity provides numerous ecosystems, ranging from ecological to social services. The dependency of humans in Mt. Meratus geo-sites on the biodiversity of the mountains area was high. Peat swamp forest was common in Kalimantan [4].

The Mt. Meratus, located in South Kalimantan Province, spread from northeast to southwest of the province territory (Fig. 1). Mt. Meratus is one of the few mountains and highland ecosystems on Kalimantan Island. Compared to the other island in Indonesia, Kalimantan has few mountains. Kalimantan was dominated by lowland with wide wetlands and Dipterocarpaceae forest. However, the biodiversity of Kalimantan has been recognized high and contributes to the global conservation programs [4].

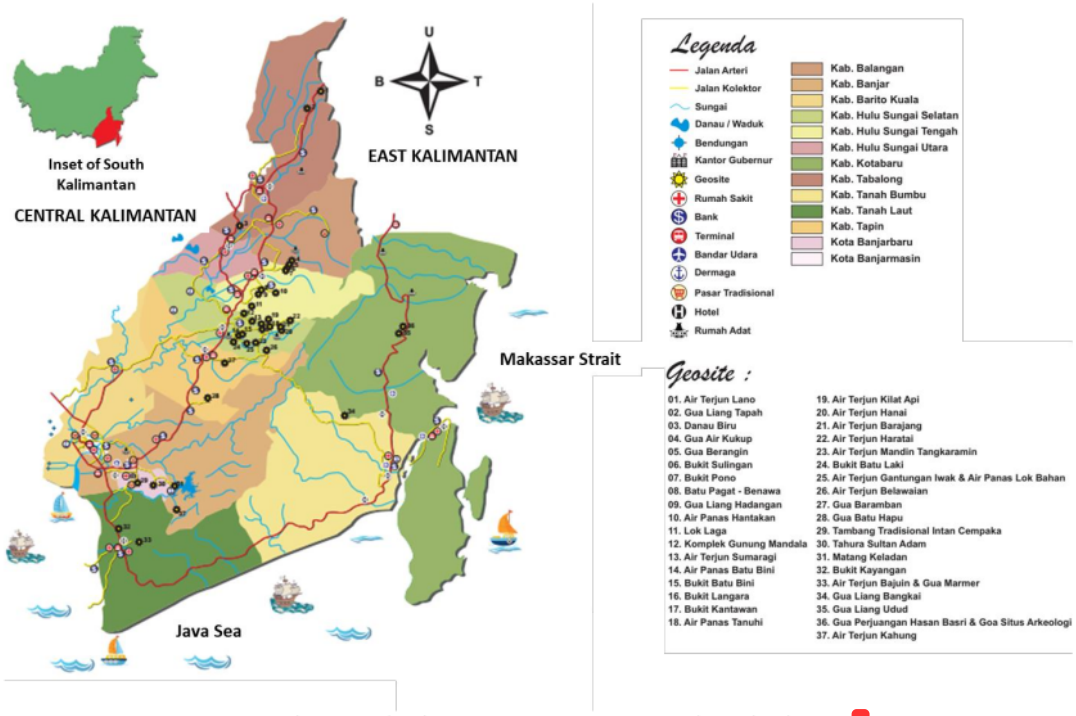

Figure 1. The geosite distribution area map, Meratus Geopark, South Kalimantan.
(**Source:** Department of Energy and Mineral Resources of south Kalimantan province, 2019)

Geosites of the Meratus geopark system consisted of 36 sites. These sites were distributed at nine regencies and one city. The nine regency was includes Tabalong, Hulu Sungai Utara, Hulu Sungai Tengah, Hulu Sungai Selatan, Tapin, Banjar, Tanah Laut, Tanah Bumbu and Kotabaru. One city involved in the geopark system was Banjarbaru. The geo-biodiversity of Mt. Meratus is important for future human life, especially the community in Kalimantan Island. These lead to the declaration of Mt. Meratus as a national geopark [9].

Geopark is the global program initiated by UNESCO to promote natural park areas with the important geological aspect designed to meet educational objectives to support environmental conservation, local community development, and local economic growth. The development of geo-tourism is relevant to Agenda 21. Agenda 21 is concerned with the issues of education, public awareness, training, and human capacity development to support Convention 1972 about the protection of global heritage.

Biodiversity of Mt. Meratus

There are numerous research has been conducted to describes the biodiversity of Mt. Meratus. Scholars point out that the Meratus ecosystem has a high level of plant and animals species. Mt. Meratus is a habitat for numerous mammals and birds species. The diversity and abundance of plants in Meratus is potential habitat for birds. The Meratus ecosystem, therefore crucial for biodiversity conservations.

Within the Mt. Meratus geo-sites area, there are endemic species called *Nasalis larvatus*, the Proboscis monkey. This long-nose monkey was distributed at South Kalimantan and classified as old group monkeys. Compared to other monkeys, this species shows unusually long or long noses. The species lives in a group and shows social behaviour. This morphological characteristic was attractive for tourists. This species is categorized as endangered species by IUCN and listed in Appendix 1 by CITES [10].

The high level of biodiversity in Mt. Meratus also comes from the high level of biodiversity in local community settlements. The crucial ecosystem with high-level biodiversity includes home gardens and community gardens in the settlement area. In Kalimantan, traditional home gardens are plot with a high level of plants species, especially species with economic functions. Many home gardens have a long history of establishment. Some gardens have been managed for more than 50 years, lead to the tall, and big tree exists in traditional home gardens.

Threats to the biodiversity of Mt. Meratus, however, related to anthropogenic factors. The high biodiversity value of Mt. Meratus is an interesting resources that leads to intensive human disturbance, including illegal hunting and plant harvesting. Poor and lack of awareness among the community surrounding Mt. Meratus leads to the rapid forest degradation in Mt. Meratus. Therefore, it is crucial to increase human prosperity in Mt. Meratus. Education is a crucial component.

The recent increase in global climates is a crucial threat to Mt. Meratus ecosystems. Global warming has been identified as a responsible aspect of biodiversity disturbance, including in Mt. Meratus. As far, the comprehensive studies related to the impact of global warming on the Mt. Meratus ecosystem are not available. These lead to the crucial action for the mitigation strategy in the Mt. Meratus ecosystem.

Indigenous knowledge

The local dweller of Meratus has been identified as rich in terms of traditional knowledge. Traditional knowledge is important in supporting environmental programs. Traditional knowledge practices have been identified as one of the practices of the sustainable practice of natural resource use. In Indonesia, it is found in many communities and implemented in many aspects of the human living system [11-13].

The community in Mt. Meratus consists of indigenous tribes, namely Dayaknese and Banjarese. Socio-culturally, these tribes shows the different culture and living system. Both tribes, however, are rich in terms of traditional practices in the living system. The indigenous knowledge of Banjarese and Dayaknese was intensively studied and shows that these tribes are rich in terms of traditional knowledge. Dayak has been known as a main native community to Kalimantan Island, with clan distribution were found in many areas in Kalimantan Island. Dayaks still practicing traditional knowledge in local wisdom in farming activity, natural resources collected from the forest, and daily life in the tribal community. The agroforestry with numerous plant trees species in the

traditional garden ecosystem is one of the sustainable ecosystems in the Dayak community [4, 14,15].

The local community in the Mt. Meratus ecosystem has rich indigenous knowledge, which is important to enhance sustainable development programs. Royyani points out that local dwellers in the Mts. Meratus still implement traditional knowledge in term of biodiversity resources usages [16]. It was known as *Tepung Tawar*. *Tepung Tawar* is one of the traditional plant usage for numerous purposes, ranging from traditional healing, agricultural ceremony, and other human activity.

Sunarbadi and Kartikawati point out the relationship among local people in the Mt. Meratus and plant diversity in Mt. Meratus ecosystem [17]. The local community in Mt. Mereatu use plant diversity into 15 categories, ranging from food, medical plant, and other usages. Sunarbadi and Kartikawati stated that some species have high priority for conservation, including *Durio kutejensis, Nepheliun mutabile, Baccaurea duilcis, Mangifera caesia, Mangifera foetida, Dacryodes rostrata, Salacca glauca,* and *Dracontomelon costatum* [17]. These species are important to support human life in Mt. Meratus.

The Development of Ecotourism

The development of ecotourism in Mt. Meratus is relevant to the recent growth of tourism in the natural area, including ecotourism. Global tourism trend shows that visit natural area is the significant tourism sector, in which many countries with abundant natural resources has opportunities become the main destination for ecotourism area. The increase of tourist appreciation towards nature and culture are the factors that contribute to the rapid growth of tourism in the natural area.

The development of ecotourism in Mt. Meratus is relevant with the conservation programs to support the sustainable uses of natural resources in Mt. Meratus, including sustainable uses of biological resources. Ecotourism in Mt. Meratus offers opportunities for local economic development through the active participation of the local community in the tourism business. There are numerous potential economic benefits for the development of tourism in Mt. Meratus.

The development of tourism in Mt. Meratus is also significant to support biodiversity conservation. Ecotourism argues that biodiversity and ecosystem are crucial resources for tourism success, and therefore conserving biodiversity is crucial. Biodiversity is the main attraction for ecotourism, in which western tourists visit the tropical forest to enjoy tropical biodiversity. It has been known that tropical forest diversity is unique and has scientific value. It is becoming an interesting ecotourism object.

The development of ecotourism in Mt. Meratus requires community participation, which is crucial in ecotourism. Scholars point out that the active participation of the local community is the key to the success of ecotourism [1,2,7]. There are numerous potentials stakeholders in the development of Mt. Meratus, including travel companies, academicians and politicians, local governments, private sectors, environmentalists, local developers, and the local community. Stakeholders have numerous perspectives and interests. Therefore, it is crucial to accommodate stakeholders' interest in the comprehensive planning of ecotourism in Mt. Meratus. The involvement of stakeholders in the development of Mt. Meratus is crucial.

CONCLUSSION

The diversity of living creatures, the abundance of outstanding geological landscapes, and rich cultural resources were the potential value of Kalimantan to be an attractive nature-based tourism destination. The ecotourism development in Mt. Meratus is crucial to support biodiversity conservation in the mountain area with high biodiversity. The development of ecotourism in Mt. Meratus is crucial to support local economic growth. It is crucial for the involvement of traditional knowledge of the community in Mt. Meratus in ecosystem management and sustainable uses, including ecotourism.

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