



UDC 332

**ECONOMIC AND ECOLOGICAL EMPOWERMENT OF LOCAL COMMUNITIES:
A STUDY IN THE BATUPUTIH NATURE TOURISM AND TANGKOKO NATIONAL PARK
AREAS OF NORTH SULAWESI**

Schouten Grace Irene Sherley*, Suman Agus, Manzilati Asfi, Muljaningsih Sri

Faculty Economics and Bussiness, University of Brawijaya, Malang, Indonesia

*E-mail: graceschouten.gs@gmail.com

ABSTRACT

Batuputih Nature Park (Taman Wisata Alam Batuputih) is a forest area in the same region as the Tangkoko Nature Reserve, Dudasudara Nature Reserve, and Batu Angus Nature Park. This area is well-known among the general public for its natural wealth, its diverse endemic flora and fauna, and its beautiful and captivating landscapes. A Nature Park is a form of conservation area management with zoning that allows the utilization of the area for specific purposes. Naturally, there are communities residing within such areas. The communities around the Tangkoko area need special attention, particularly in the economic aspect, to ensure that the local population does not harm the conservation area. One approach that can be developed is providing support and guidance to the local communities by the local government and relevant institutions to enhance the tourism sector in the Tangkoko area. In order to address potential issues in the Tangkoko conservation area, scientific research is necessary, considering the conservation area's ecological, socio-cultural, and economic functions to ensure the sustainability of its functions and benefits. This research aims to investigate the economic-ecological empowerment of the local communities in the Batuputih Nature Park and Tangkoko National Park in the Tangkoko Conservation Area in Bitung City. It aims to identify an economically ecological empowerment model suitable for implementation in these areas, leading to realizing economic and ecological sustainability. To achieve that objective, this research uses qualitative methods to deeply understand the rural community behavior related to economic empowerment and nature conservation. Based on the research result, it is known that community openness and awareness are vital to support local community empowerment, especially to protect endangered species and preserve the natural environment. The new renewal model involves the academics, private sector, society, and government in a synergistic approach to ensure the sustainability of the local communities' empowerment based on the environment.

KEY WORDS

Nature park, nature reserve, economic-ecological empowerment, local communities.

Batuputih Nature Tourism Park (Taman Wisata Alam Batuputih) is a forested area within the same region as the Tangkoko Nature Reserve, Dudasudara Nature Reserve, and Batu Angus Nature Tourism. The public has long recognized this area for its natural richness, diverse endemic flora and fauna, as well as its beautiful and captivating landscapes. It comprises three main components: the coastal area, forest, and mountains. While Batuputih Nature Tourism covers 615 hectares, Tangkoko also includes the Tangkoko-Batu Angus Nature Reserve, spanning 3,196 hectares, which encompasses the Tangkoko-Batu Angus Mountain and its surroundings.

Nature Tourism is a form of conservation area management with zoning that allows limited use of the area, including for tourism purposes. Tourist visits are only permitted in Batuputih Nature Tourism, as tourism activities are not allowed in nature reserves. However, due to Tangkoko's popularity, the name "Tangkoko" has been marketed to attract tourists, even though visitors actually go to Batuputih Nature Tourism. The Coordinator of the Wildlife Conservation Society-Indonesia Program states that Tangkoko has significant natural historical value because it is home to 26 mammal species (10 of which are endemic to



Sulawesi), 180 bird species (59 of them are endemic to Sulawesi, and 5 are endemic to North Sulawesi), and 15 reptile and amphibian species.

The Batuputih Nature Tourism and Tangkoko National Park areas are unique for their endemic wildlife species such as the Spectral Tarsier (*Tarsius spectrum*) and the Celebes Crested Macaque (*Macaca nigra*), locally known as Yaki. *Macaca nigra* is protected by the Indonesian government under various regulations. In fact, Yaki is classified as an endangered species by the IUCN and is listed in CITES Appendix II. The average population of *Macaca nigra* in 2012 was 45 individuals per square kilometer due to the shrinking Yaki habitat.

Tarsius spectrum inhabits secondary forests, plantations, lowland areas up to 1,300 meters above sea level, and shrublands. The population of the *Tarsius spectrum* has drastically decreased in the last decade, with an estimated population of around 3,500 individuals. Research conducted in the area by Lowing et al. (2013) found that these nocturnal animals primarily inhabit large trees, often choosing *Ficus* sp. trees as their primary nests. Saroyo et al. (2017) studied *Tarsius* density, finding an average of 1.89 individuals per hectare or 189 individuals per square kilometer. The IUCN has categorized the *Tarsius spectrum* as vulnerable, and the Indonesian government has included all *Tarsius* taxa under protection through various regulations. Apart from *Tarsius* species, the Batuputih Nature Tourism and Tangkoko National Park have a diverse range of other wildlife species, including the Bear Cuscus (*Phalanger ursinus*), Sulawesi Bear Cuscus (*Phalanger celebensis*), and Lowland Anoa (*Bubalus depressicornis*).

According to research conducted by O'Brien and Kinnaid (1997) in the Tangkoko National Park, *Macaca nigra* in North Sulawesi can be found in the Duasodara Nature Reserve, Manembo-nembo, Kotamubagu, and Modayak. Currently, the remaining habitat of *Macaca nigra* in North Sulawesi is limited to conservation areas, including Tangkoko Nature Reserve, Duasodara Nature Reserve, Batuputih Nature Tourism, and Batu Angus Nature Tourism in Bitung, North Sulawesi. Among these areas, Tangkoko Nature Reserve and Batuputih Nature Tourism are considered to have high potential as Yaki habitats.

Conservation strategies aim to protect the world's natural resources, preserve biodiversity, and sustainably utilize biological resources and ecosystems. To achieve these goals, the government and local communities must work together to ensure the continued function of Tangkoko as a biodiversity conservation area and a support system for life.

Communities living in forested areas typically rely on forest resources and agricultural activities, which can lead to changes in the area's function and illegal activities that harm conservation efforts. To support the sustainability and development of the Tangkoko area (Batuputih Nature Tourism and Tangkoko National Park), local communities play a crucial role in preserving the area's conservation and biodiversity. Empowering the local community economically is essential to prevent damage to the conservation area.

One approach to support economic and ecological sustainability in the Tangkoko area is through government and relevant agency assistance for the local community. This assistance can include establishing new markets for local products, providing facilities and community services, and other initiatives to improve the local economy.

The local community's direct involvement can positively impact tourism development, as research by Lee (2013) and Rasoolimanesh (2017) has shown. However, these studies do not consider the ecological perspective and the environmental impacts of tourism development. The ecological concept of tourism is considered essential for achieving environmentally sustainable tourism development that involves local communities.

Scientific studies and research are needed to address potential issues in the Tangkoko conservation area, considering conservation's ecological, socio-cultural, and economic aspects. One of the crucial elements that need to be considered is the livelihood of the local communities residing in the conservation area. Therefore, the researcher chose the "Economic and Ecological Empowerment of Local Communities" theme. The purpose of this research is to determine the economic and ecological empowerment of the local communities in the Batuputih Nature Tourism and Tangkoko National Park areas within the Tangkoko Conservation Zone in Bitung City in 2018, and to discover an ecologically-based



economic empowerment model suitable for implementation in the area, thereby achieving ecological and economic sustainability.

LITERATURE REVIEW

Cultural Relation and Regional Development

Diversity of ethnical backgrounds in Indonesia from Sabang to Merauke defines it as abundantly blessed through multi-cultural property of values. Diversity is not only holding on to multi-cultural and ethnic backgrounds but also building a national identity within. Indonesia was engaged to Melayu (major inhabitant), and minority ethnics consisted of Arabian, Chinese, Indian, and another 300 cognizable ethnics who lived for decades and held their own principles and values (Yustika, 2009).

The economic development approach defines cultural diversity as two contradictive positions. First, cultural values are positioned as activators of economic development and growth after the autonomous era through internalizing local values and applying local wisdom. On the other hand, cultural values would be a boomerang for development with existing high friction of interest and identity crisis. Thus, it has the potential to deliver local degradation. Local degradation means when a person or group leaves their cultural inheritance and cannot keep their identity when facing the presence of new dominating cultures. While new cultures are widely spread without any process of internalization or adaptation, even through policy, it would harm development. In fact, the effectiveness and success of economic policy transmission depend on mutual trust engaged in explicit and implicit norms.

Local and cultural values generate glory. It represents the beautifulness and kindness messages of locals. For example, throughout Sumbawa, there is a well-known motto of work ethics correlated to Marapu beliefs, written: "Those existed in order to serve whose deserved by and to devote whose devoted by" (Mubyarto, 1996).

In other words, work ethics belonging to Sumbawa tend to focus on service quality and human faithfulness. Those values are presented and delivered only to Marapu. Their wisdom asked for full hard work, and the most important thing is to do it with all sincerity and loyalty. Therefore, they are reinforced to work for themselves and work faithfully with their ancestors.

Meanwhile, in Rote, people connected and internalized work ethic values into their daily lives. In agricultural life, they applied the well-known "lalaa" to sanction those indolences (Mubyarto, 1996). In line, Centre Kalimantan also internalized values, namely Betang custom (a long house), by means of system values or social norms adapted from clannish, togetherness, and equality within the 'Unity in Diversity' of community, and it represents the heart of Pancasila (Mubyarto, 1996). Betang represents togetherness, referring to the sizing of the larger and longer homes consisting of some families who require high tolerance and consideration to live peacefully.

Internalization of local values has a vital role in accelerating economic development. Local values form the behaviors of the community. It means Indonesian behaviors (including in the regions) were formed by beliefs and norms systems alive in their culture (Rahman dan Yuswadi, 2005).

Local Economic Development

According to Blakely in Supriyadi (2002), the success of local economic development can be seen from several indicators, namely: 1) expanding opportunities for small communities in employment and business opportunities; 2) expansion for the community to increase income; 3) empowerment of micro and small business institutions in the production and marketing process; and 4) institutional empowerment of partnership networks between government, private sector, and local communities. In relation to the theory of economic growth, Krugman (1994) said that investment in human resources plays a more important role in development. Quality human resources for developing countries is an important factor in efforts to catch up with other countries in development. The era of information and technology that is developing today increasingly proves that good mastery of technology will



impact the quality and quantity of development itself. In order for technology to be mastered, quality human resources are needed. In the context of the production process, good mastery of technology will encourage technological innovation. This technological innovation can lead to discovering new products and more efficient production methods (Barro, 1994).

According to Blakely and Bradshaw, local economic development is a process where local government and community organizations are involved in encouraging, stimulating, and maintaining business activities to create jobs. Local economic development is a process that involves the formation of new institutions, the development of new industries, the development of workers' capacity to produce higher-quality products, the identification of new markets, and the establishment of new businesses. Meanwhile, it is a process where development actors work collectively with public, private, and non-government partners to create better conditions for economic growth and employment opportunities (Nurzaman, 2002).

Community-Based Tourism

In the definition presented by Suansri (2003), the idea of creating new paradigm tools in tourism development is solely to maintain the sustainability of tourism itself. For this reason, there are several basic principles of CBT presented by Suansri (2003) in his ideas, namely: 1) recognizing, supporting, and developing community ownership in the tourism industry, 2) involving community members in starting every aspect, 3) developing community pride, 4) developing quality community life, 5) ensuring environmental sustainability, 6) maintaining the unique character and culture of the local area, 7) helping to develop learning about cultural exchange in the community, 8) respecting cultural differences and human dignity, 9) distributing benefits fairly to community members, 10) plays a role in determining the percentage of income (distribution of income) in projects in the community.

These ten basic principles must become the foundation, direction, and basic principles of tourism development to guarantee its sustainability. Even though the basic principles stated explicitly by Suansri focus more on the interests of local communities, the main idea conveyed by Suansri in these basic principles is a more balanced relationship between tourists and local communities in the tourism industry. The balance includes, among other things, community ownership status, fair distribution of benefits, socio-cultural relations based on mutual respect, and joint efforts to protect the environment. As a follow-up, Suansri (2003) conveyed points which are the main aspects of CBT development in the form of 5 dimensions, namely: 1) economic dimension, with indicators in the form of funds for community development, creation of jobs in the tourism sector, generation of local community income from the sector. tourist; 2) social dimension with indicators of increasing quality of life, increasing community pride, fair distribution of roles between men and women, younger and older generations, building strengthening community organizations; 3) cultural dimension with indicators in the form of encouraging people to respect different cultures, helping to develop cultural exchange, development culture is closely embedded in local culture; 4) environmental dimension, with indicators studying carrying capacity areas, regulating waste disposal, increasing awareness of the need for conservation; 5) political dimension, with indicators: increasing participation from local residents, increasing the power of the wider community, guaranteeing rights in natural resource management.

Yaman & Mohd (2004) emphasize several keys to managing tourism development using the CBT approach: first, government support requires multi-institutional structural support to be successful and sustainable. The human-oriented CBT approach supports the fair distribution of profits and benefits and supports poverty alleviation by encouraging the government and society to maintain natural resources and culture. The government will be a facilitator, coordinator or advisory body for HR and institutional strengthening.

Second, participation from stakeholders. CBT is described as a variety of activities that increase broader support for the economic and social development of society. Resource conservation is also intended as a protective effort to improve people's livelihoods. CBT generally aims to diversify the industry. This increase in the wider scope of participation includes participation in the informal sector, rights, and direct/indirect relationships from other



sectors. Tourism plays a role in internal development and encourages the development of other economic activities such as industry, services, and so on. Community members with entrepreneurial abilities can determine/make business contacts with tour operators and travel agents to start new businesses.

Third, fair distribution of profits. This is not only related to the direct benefits received by people who have businesses in the tourism sector but also indirect benefits that can be enjoyed by people who do not own businesses. The indirect benefits received by the community from ecotourism activities are much wider, including in the form of development projects that can be financed from tourism revenues.

Fourth, sustainable use of local resources. One of the strengths of ecotourism is its heavy reliance on local natural and cultural resources. These assets are owned and managed by all members of society, both individually and in groups, including those who do not have financial resources. This can foster awareness, self-esteem, and pride in all members of society. In this way, existing resources increase in value and price and become why visitors want to visit the village.

Fifth, strengthening local institutions. Initially, tourism business opportunities in rural areas were difficult to regulate by existing institutions. It is important to involve committees with members from the community. The main goal is to manage relationships between residents, resources, and visitors. This clearly requires institutional development there. The best thing is to form an institution with acceptable leadership to all members of society. Institutional strengthening can be done through the training and development of individuals with the necessary work skills.

Sixth, the relationship between regional and national levels. Local communities often lack direct links with national or international markets, which is why the benefits of ecotourism are not enjoyed at the community level. Intermediaries are those who connect ecotourism activities with the community, and tourists actually reap more benefits.

METHODS OF RESEARCH

The research approach used in this article is a qualitative approach. This method is used to acquire a very deep understanding of the rural community behavior related to economic empowerment and nature conservation.

Because of the uniqueness of the natural resources that do not exist in other nature parks, Batuputih Nature Tourism Park and Tangkoko National Park in North Sulawesi was deliberately chosen. This national park has endemic animals that only exist in this area, namely *Tarsius* (which is the smallest primate in the world) and *Yaki* (*Macaca Nigra*).

Data and information in this research were obtained through in-depth interviews with Batu Putih community leaders and related institutions, the North Sulawesi Natural Resources Conservation Center, as the official administrator of the Tangkoko – Duasudara Nature Reserve. Furthermore, this research also uses symbolic interactionism, which is relevant to the research questions. Blumer stated that symbolic interactionism reveals the distinctive nature of human actions and interactions. Specifically, the data collected in this research are emic data related to behaviors, perceptions, mindsets, and attitudes. Data collection ceases only when it has been triangulated, verified, and is deemed to be valid and accurate. If there is any secondary or supporting quantitative data, it is used as supplementary information in the research.

The stages of data analysis techniques used in this research are: (1) Collecting data, which comes from words and actions. Moreover, the rest of the additional data consists of documents or written data sources, photos, and statistics. The words and actions of people observed or interviewed are the main data source, recorded through written notes or video/audio tapes, photos, or films. Meanwhile, additional data sources originating from written sources can be divided into sources from books and scientific magazines, sources from archives, personal documents, and official documents (Moleong, 2000); (2) data reduction, which is carried out through strict selection of data, summaries or short descriptions, and classifying them into broader patterns.; (3) data presentation, which can be



in the form of the narrative text of field notes, matrices, graphs, networks, and charts. These forms combine information arranged in a coherent and easy-to-reach form, making it easier to see what is happening, whether the conclusions are correct or vice versa to re-analyze, and (4) drawing conclusions and verification that researchers continuously while in the field. These conclusions were also verified during the research by (a) rethinking during writing, (b) reviewing field notes, (c) reviewing and exchanging ideas between colleagues to develop an intersubjective agreement, and (d) extensive efforts to place a copy of a finding in another set of data.

RESULTS AND DISCUSSION

Research Area Overview

Tangkoko Nature Reserve is located in the city of Bitung. The area is home to three volcanoes: Mount Tangkoko at 1,109 meters (formerly known as Mount Batu Angus), the additional peak of Batu Angus, which resulted from the 1893 eruption, and the twin peaks of Duasudara at 1,351 meters. The reserve's boundaries follow the coastline from Batu Angus to the Batuputih River, along the Batuputih - Duasudara road. The Tangkoko Duasudara area has been known since the time of Alfred Russel Wallace due to its abundant and unusual wildlife. In 1919, during the colonial Dutch era, Tangkoko was declared a natural monument. In 1942, the Natural Protection Ordinance designated Tangkoko as a nature reserve. After Indonesia's independence, this area continued to be maintained as a nature reserve under the responsibility of the Department of Forestry. In 1978, the neighboring Duasudara Protected Forest, covering 4,421 hectares, was included within the reserve. In the 1980s, 300 hectares of the nature reserve were excluded and declared a forest for tourism.

Tangkoko Nature Reserve features gently sloping terrain from sea level to a maximum elevation of 1,351 meters. These slopes are cut by valleys to the north and south with deep hollows. A ridge connects Mount Duasudara and Tangkoko. Mount Tangkoko has a one-kilometer-wide crater that forms a valley beneath its peak. Few plants are on the sandy peak of Mount Batu Angus due to the lava flow into the sea. When the lava meets the sea, it forms a bay with coral formations, and only mangroves can grow there.

The fauna found in Tangkoko Nature Reserve is highly diverse, including Tarsiers, black macaques or yaki, cuscus, and others. Additionally, you can find bats, reptiles, anoa (a type of buffalo), snakes, butterflies, and marine animals. Tarsiers, as one of the nocturnal animals, are endemic to North Sulawesi and are the world's smallest primates. They have large, round eyes and live in trees, coming out late afternoon and evening to forage for food. Due to their cuteness, tarsiers have become a part of the "Madagascar" cartoon. The black macaque or yaki, an endemic Indonesian species conserved in Tangkoko Nature Reserve, is unique due to its heart-shaped and pink-colored rear end. According to Themmy Doaly (2019), the Yaki population in Tangkoko Nature Reserve, North Sulawesi, has experienced a drastic decline of 78.5% since 2011.

The Socio-Economic Conditions of the Community Around Tangkoko Nature Reserve

The local community comprises farmers, livestock breeders, and the tourism sector, providing guiding services, simple eateries, and basic tourist accommodations. The surrounding nature reserve remains well-preserved and sustainable because the community takes good care of the region and strives to coexist with the native wildlife.

The people in this area can be considered to have a reasonable standard of living, simply meeting their basic needs within the Tangkoko Nature Reserve. However, there are challenges, such as illegal logging in the surrounding areas, which often cause concern for the local community. The increasing illegal logging activities can disrupt the native and unique habitats in the region.

Batuputih is one of the villages in Bitung City, situated in the northern part of Bitung with a land area of 132,000 km². The population living there is 1,778 individuals. The main occupations of the Batuputih residents are fishing (50 percent), which includes about 232 people, farming with 123 individuals, and 39 working as employees. The journey to



Tangkoko takes approximately 15 minutes from Bitung City and less than 2 hours from Manado. However, the road access to this location is still inadequate, with many potholes and poorly maintained road medians, and the village stretches on both sides of the road along the coastline. Visitors must cross a small but seemingly neglected permanent bridge to enter the conservation area.

This region is unique because it is a habitat for various rare wildlife species. Here, Alfred Russel Wallace first discovered the unique fauna and flora. Around 1973, researchers introduced tarsiers, macaques, and deer after publishing their research findings, and they started gaining popularity in the 1980s. The development of Batu Putih as a tourist area is closely related to its designation as the Batuputih Nature Tourism Park and the Tangkoko-Batuangus Nature Reserve in the 1970s.

From a legal history perspective, this nature reserve is one of Indonesia's first 24 nature reserves. According to the Governor-General's Decree, there were only three conservation areas in Sulawesi: Tangkoko Batuangus and Gunung Lokon (North Sulawesi) and Bantimurung (South Sulawesi). Gunung Dua Sudara was initially designated as a forest area (bosch) covering 4,299 hectares based on Government Decree No. 38 on April 2, 1932. The Gunung Dua Sudara forest area was later changed and designated as a nature reserve on November 13, 1978, through the Minister of Agriculture Decree No. 700/Kpts/Um/7/78, with the same land area. Based on these facts, it is clear that Tangkoko Batuangus Nature Reserve is 59 years older than the Gunung Dua Sudara Nature Reserve.

The local community is aware that preserving the nature reserve is crucial for maintaining the conservation area that is also their home. The development of tourism in Tangkoko is an example of how tourism can support conservation activities and, at the same time, increase the income of the surrounding community. One of the activities of the community in Tangkoko is fishing and managing fish products for sale or consumption by the local population. The majority of men take on the role of fishermen and go to sea to catch fish. Their cooperative and mutually supportive way of life fosters a strong sense of community spirit, helping them navigate their daily lives. Most people in the community lead simple lives but feel that their needs are met, allowing them to lead a good daily life.

Development of Tourism in the Tangkoko Nature Reserve

Considering the geographical layout and location of the Tangkoko Nature Reserve, it holds significant potential for tourism development. Tourists who visit this area are typically those with a high appreciation for nature, the environment, and the local culture. They display a strong interest in the local culture and are willing to adapt to the ways of the local population. Tourists see the opportunity to stay and experience life like a local as an integral part of their unique travel experience.

One of the unique mammals in this region is the Tarsius monkey. Tarsius (*Tarsius spectrum*) is a primitive primate (prosimii) from the Tarsiidae family and is part of the endemic wildlife of North Sulawesi. These creatures have small bodies with large round eyes, resembling miniature bears at first glance, making them categorizable as exotic or unique animals. Tarsius is a nocturnal animal, actively seeking food by leaping from one tree to another. They inhabit tree hollows and root clusters. Tarsius can be found in both primary and secondary rainforests, although they prefer secondary-growth forests. This preference may be due to the greater abundance of food in secondary-growth forests. They are distributed from lowland rainforests near sea level to lowland montane rainforests up to 1500 meters.

Tarsius plays a crucial role in the ecosystem of the nature reserve. They are insectivorous animals that control insect populations. Tarsius is classified as a protected species, categorized as "vulnerable" by the IUCN, and listed in CITES Appendix II. They are likely to become extinct due to the illegal wildlife trade. The Tarsius population has been declining, influenced by internal and external factors. External factors affecting Tarsius include habitat conditions (habitat, nest, vegetation types), climate (temperature, humidity, light intensity, and rainfall), predators (wildcats, yaki, snakes, and humans), and Tarsius prey (insects, small rodents, lizards, and birds).



Preserving *Tarsius* is vital for increasing their population. Conservation can be achieved through *Tarsius* breeding, both within their natural habitat (in-situ) and outside their natural habitat (ex-situ). Understanding the characteristics of *Tarsius* nests is essential for successful ex-situ *Tarsius* breeding. *Tarsius* nests are typically found in large trees like banyan trees in dark conditions with minimal sunlight to protect them from wind, rain, and predators.

The Concept of Community in the Tangkoko Nature Reserve Area

In many cases encountered during tourism and regional development, local communities are often marginalized. The Tangkoko Nature Reserve is an area undergoing tourism development. It is crucial to note that development should not be carried out hastily and should not only benefit one party. Sustainable tourism development is of utmost importance, taking into account environmental aspects and how coexistence can be achieved.

Local residents are often a subject of debate and considered a problem in tourism development. Some argue that an area should be pure and free from human settlements, while others see indigenous people as assets that need to be preserved to attract regional development. Indigenous inhabitants who have lived in the area for a long time are often wrongly seen as contributors to environmental degradation when, in fact, they actively participate in conserving the nature reserve because they consider it their home. Community empowerment is a significant issue in preserving the Tangkoko Nature Reserve, where the community plays a crucial role in environmental conservation and tourism development.

So far, the management of the Tangkoko Nature Reserve and the Duasudara Nature Reserve has been perceived as suboptimal and lacking clear direction. The existing management system does not fully support on-the-ground operations. Various issues demand substantial changes in the conventional planning system of the Tangkoko and Duasudara Nature Reserves, moving towards a new pattern with a more specific landscape coverage. As a consequence of this approach, a system is needed to bring the functions of managing the Tangkoko and Duasudara Nature Reserves closer to the site level. The use of management blocks as the unit of analysis or information in the conservation areas of Tangkoko and Duasudara Nature Reserves would greatly assist in identifying typologies, localizing targets, and focusing on conservation investments more clearly and purposefully.

Overall, the population living in the vicinity of the Tangkoko and Duasudara Nature Reserves consists of coastal communities and those living around the forest, resulting in various interactions that influence both areas. The majority of the population comprises native residents of North Sulawesi, as well as immigrants from various regions, including Java, Gorontalo, South Sulawesi, and Maluku. Ethnically, this region is inhabited by groups such as the Minahasa, Sanger, Mongondow, Gorontalo, Bali, Bugis, Javanese, Ternate, and Ambon. Surprisingly, the heterogeneous characteristics of the communities around the Tangkoko and Duasudara Nature Reserves share similarities in resource utilization patterns, especially in fishing and farming. The local communities have a high dependency on the natural resources found within and around the nature reserves, both directly and indirectly. The intensity of this dependency is greatly influenced by livelihood needs.

The implementation of the management system for the Tangkoko and Duasudara Nature Reserves, based on management blocks, should take into consideration the presence of local communities whose way of life and livelihoods are directly reliant on the natural resources within the reserves. In most established management blocks, local settlements often directly border the reserve boundaries. Activities such as hunting and gathering are still frequently found within these blocks. In general, the design of forest blocks and restoration blocks serves as centers of traditional resource utilization activities for the surrounding communities. Without policies that ensure community access to the natural resources within the reserves, the management of the Tangkoko and Duasudara Nature Reserves will continue to be marked by conflicts between reserve management and the local communities who have long depended on these resources for their livelihoods within the reserves.



Furthermore, when viewed through a gender lens, women play a crucial role in the daily activities of the community in the CATBS area. Women provide labor in processing the catch and are responsible for selling the catch in town, contributing to the family's income. Female fishermen start their work as early as 6:00 in the morning and continue until 2:00 PM. In this situation, their domestic roles often suffer, and they may not have time to take care of their homes, resulting in a messy and neglected household. In addition to household chores, their roles as parents can also be neglected. Children are left unattended as the female fishermen are already at the shoreline in the early morning to pull their nets. This condition causes some children who want to attend school to be neglected and have to take care of themselves, and some even end up not going to school due to a lack of specific attention from their parents. With the dual roles that female fishermen undertake, not only are their obligations as parents overlooked but their rights to self-care, such as healthcare, are also lost. This can be observed in the poor health of female fishermen or instances where they are often sick.

However, not all women working as fishermen neglect their domestic roles. Some manage to balance their responsibilities effectively, ensuring that their homes and families are well taken care of, their children's health and education are maintained, and they continue personal development. Nevertheless, most female fishermen struggle to balance these roles.

Community empowerment is an effort to elevate the dignity and status of a segment of society that is currently unable to escape the traps of poverty and underdevelopment. The theoretical framework for this study is based on the concept of empowerment (Kartasmita Ginandjar, 1997), which views the community not as the object of various development projects but as the subject of its own development efforts. Community empowerment should follow the following approaches: First, it must be targeted, designed to address specific issues, and tailored to the community's needs. Second, it should directly involve or even be implemented by the target community, with the aim of enhancing the community's empowerment by providing experiences in designing, implementing, managing, and being accountable for self-improvement and economic activities. Third, it should use a group approach because individual efforts by poor communities are often insufficient to solve the problems they face. Group approaches are considered more effective and efficient. In essence, community empowerment is about enabling and self-reliance, with three key elements: enabling, empowering, and achieving self-reliance (Ristianasari, 2013). Other potential avenues for community empowerment include:

- Marine Tourism Field observations reveal that the coastline along the conservation area boasts fine sandy beaches and calm, clear, and clean waters, making it highly suitable for snorkeling and diving activities. This potential can be harnessed for businesses such as snorkeling and diving equipment rentals, as well as boat or speedboat rentals to transport tourists to snorkeling and diving spots. These beaches are popular among tourists and are highly recommended for visits. Given the consistent increase in the number of tourists each year, the market potential for utilizing these natural resources is substantial. The majority of visitors to Kampung Saporkren for marine tourism are foreign tourists, with an average of 137 domestic visitors and 581 foreign visitors annually;
- Wildlife Observation Tours in the Tangkoko Nature Reserve Business opportunities for the local community lie in wildlife observation, particularly the observation of black macaques (*Macaca Nigra*), bear cuscus (*Ailurops Ursinus*), spectral tarsiers (*Tarsius spectrum*), and many other unique animals found in this area;
- Homestay Business CATDS encompasses well-organized and spacious residential areas that are quite remote and far from urban congestion. This presents the potential to establish simple homestays for tourists who want to stay overnight and enjoy nocturnal wildlife observation, witnessing the cuteness and uniqueness of tarsiers that appear at night.



The Economic-Ecological Empowerment Model in the Tongkoko Duasudara Nature Reserve Area

The interconnection between the government, natural resources, and social sciences involves a crucial collaboration among these essential components to sustain an ecosystem used to support various human activities (Chuenpagdee et al., 2019). The government domain serves the function of addressing and regulating through legislation and laws that set boundaries on what can and cannot be done in the utilization of nature as a tourism destination. The natural resource domain is a critical factor that serves as the attraction for tourism; in other words, it is the primary component in selling tourist attractions supported by the social domain. The social domain encompasses the local communities with their customs and cultures, adding to the uniqueness of a tourism attraction. Together, they create an enticing allure that shapes a complex and structured interdisciplinary domain.

In connection with the designation of a nature reserve area, it is essential for local communities to have clarity on the boundaries between the nature reserve and residential areas. This way, the communities still residing in Batuputih Village can lead their lives and livelihoods without encroaching on land within the forested area. One of the residents, Mrs. Wawu Malaganda, who runs a shop in the vicinity of the nature reserve, revealed that the community still faces limitations in using foreign languages.

Mrs. Wawu Malaganda convey as follow:

"I have been running a small shop for a long time, and tourists often come to shop at my store. However, no one in my household can speak English, so we are forced to use sign language. If the government could provide free English courses, we would be very grateful."

Language remains a significant challenge for the local community around the nature reserve, especially for the general population who does not work as guides or tour operators and may not have strong English language skills. It is crucial for the government to consider the circumstances of the local population, who should have access to utilize the conditions of the nature reserve responsibly, following the applicable regulations.

The government's policy is an enclave policy, meaning the release of forested areas from their status as forested land due to the presence of third-party land ownership within the forested area. This can be done if the land in question was acquired before 1919 (Protected Forest Regulation). The decision to designate an enclave within a conservation area is a policy set by the central government, specifically the Ministry of Forestry. The decision to determine enclaves in a conservation area is a form of regulatory policy. This decision is made based on considerations that involve existing activities, designations, and supporting evidence.

These efforts are made because the North Sulawesi Natural Resources Conservation Agency (BKSDA Sulut) has a responsibility to address issues within the Gunung Duasudara Nature Reserve, including the security of the conservation area, monitoring the trade of flora and fauna, fire prevention, and law enforcement against anyone who violates forestry regulations. To support all of this, aside from funding, the key factor is having an adequate and qualified human resource, both in terms of quantity and quality. Two approaches can be used to address land ownership issues by the Pinangunian community within the nature reserve: education, forest protection, legal processes up to the level of the court, and the proposal to conduct boundary reconstruction activities to regulate land use and community activities.

An empowerment model involving the community and interactions with the environment is a vital model for creating harmony in the diversity of the CATDS region. The optimization of this empowerment model is necessary to enhance the competence of the community through education and training, involving all relevant parties so that they have a better understanding of the environmental conditions. Empowerment activities are crucial to be implemented because one community member shared an unpleasant experience due to communication weaknesses and a lack of tourism awareness in this area, especially for those living and working in coastal regions.

The results of the interview with local people as follow: "I have a few boats at home, which are sometimes used by tourists for snorkeling. Unfortunately, because we can't speak



English, there's no fixed price whenever foreigners rent my boat. So, I resort to using sign language."

"Once, a foreigner rented my boat for a full day of snorkeling. After we finished snorkeling and returned to the shore, I was paid only two thousand rupiahs. I felt offended and didn't want to accept the money. However, my friend who accompanied me in assisting the foreigner with snorkeling insisted that I take the money. He said it would be impolite not to accept the payment from the foreigner. In the end, I accepted it."

CONCLUSION

So far, research has mainly focused on how to develop and preserve nature reserves but has not adequately addressed how the communities living around these reserves can adapt to and coexist with the changes and developments within these conservation areas. Several critical issues have been identified but not sufficiently addressed, such as the lack of attention to the remote communities residing near these conservation areas, with limited ability to communicate with foreign visitors due to language barriers. Therefore, community openness and awareness are vital to foster in the development model, especially to protect endangered species and preserve the natural environment. The new renewal model involves the environment, the community, and the government in a synergistic approach to ensure the well-being of the community and have positive impacts on the environment.

REFERENCES

1. Barro, R. J., & Lee, J. W. (1994). Sources of Economic Growth. Carnegie-Rochester Conference Series on Public Policy, 40, 1-46.
2. Blakely, E. J. (2002). Planning Local Economic Development (Theory and Practice). California: Sage Publications.
3. Chuenpagdee, R., Rocklin, D., Bishop, D., Hynes, M., Greene, R., Miguel, R. L. D. D. The global information system on small-scale fisheries (ISSF): A crowdsourced knowledge platform. *Marine Policy*, 101(1), 158-166.
4. Doaly, T. (2019). Berharap Lebih pada Survei Yaki, Monyet Endemik Sulut yang Populasinya Terus Menurun. Retrieved from <https://www.mongabay.co.id/2019/07/31/berharaplebih-pada-survei-yakimonyet-endemik-sulut-yangpopulasinya-terus-menurun/>.
5. Ginanjar, K. (1997). Pemberdayaan Masyarakat: Konsep Pembangunan yang Berakar Pada Masyarakat. Yogyakarta: Universitas Gajah Mada
6. Krugman, P. R. (1994). The Surge in Foreign Direct Investment in the 1980s. Chicago: University of Chicago Press.
7. Lee, T. H. Influence Analysis of Community Resident Support for Sustainable Tourism Development. *Tourism Management*, 34, 37-46.
8. Lowing, A. E., Rimbing, S. C., Rembet, G. D. G., Nangoy, M. J. (2013). Karakteristik Sarang Tarsius (*Tarsius spectrum*) di Cagar Alam Tangkoko Bitung Sulawesi Utara. *Jurnal Zootek*, 32(5), 1-13.
9. Moleong, L. J. (2000). Metodologi Penelitian Kualitatif, Bandung: PT Remaja Rosdakarya.
10. Mubyarto. (1996). Strategi Pembangunan Masyarakat Desa di Indonesia. Yogyakarta: Aditya Media.
11. Nurzaman. (2002). Perencanaan Wilayah di Indonesia pada Masa Sekitar Krisis. Bandung: Penerbit ITB.
12. O'brien, T. G., & Kinnaird, M. F. Behaviour. (1997). Diet, and Movements of the Sulawesi Crested Black Macaque (*Macaca nigra*). *International Journal of Primatology*, 18.
13. Rahman, B., & Yuswadi, H. (2005). Sistem Sosial Budaya Indonesia. Jember: Kelompok Peduli Budaya dan Wisata Daerah Jawa Timur.
14. Ristianasari. (2013). Efektivitas Pemberdayaan Masyarakat Di Taman Nasional Bukit Barisan Selatan (TNBBS): Kasus Model Desa Konservasi (MDK) di Pekon Sukaraja dan Pekon Kubu Perahu, Lampung. Retrieved from



<http://repository.ipb.ac.id/bitstream/handle/123456789/63513/2013ris.pdf?sequence=1&isAllowed=y>.

15. Rasoolimanesh, S. M., Ringle, C. M., Jaafar, M., Ramayah, T. (2017). Urban vs Rural Destinations: Residents Perceptions, Community Participation and Support for Tourism Development. *Tourism Management*, 60, 147-158.
16. Ristianasari. (2013). Efektivitas Pemberdayaan Masyarakat Di Taman Nasional Bukit Barisan Selatan (TNBBS): Kasus Model Desa Konservasi (MDK) di Pekon Sukaraja dan Pekon Kubu Perahu, Lampung. Retrieved from <http://repository.ipb.ac.id/bitstream/handle/123456789/63513/2013ris.pdf?sequence=1&isAllowed=y>.
17. Saroyo, T. T. E., & Koneri, R. (2014). Density of Spectral Tarsier (*Tarsius spectrum*) in Agricultural Land, Mangrove, and Bush Habitats in North Sulawesi, Indonesia. *Innovative Scientific Information & Services Network*, 2(14), 310–314.
18. Suansri, P. (2003). *Community Based Tourism Handbook*. Thailand: REST Project.
19. Supriyadi, E. (2007). Telaah Kendala Penerapan Pengembangan Ekonomi Lokal: Pragmatisme dalam Praktek Pendekatan PEL. *Jurnal Perencanaan Wilayah dan Kota*, 18(2), 103-123.
20. Yaman, A., & Mohd, A. (2004). Community-based Ecotourism: New Proposition for Sustainable Development and Environment Conservation in Malaysia. *Journal of Applied Sciences*.
21. Yustika, A. E. (2009). *Ekonomi Politik, Kajian Teoritis dan Kajian Empiris*. Yogyakarta: Pustaka Pelajar.