



**THE ROLE OF STAKEHOLDERS IN DEVELOPING SPATIAL-BASED SIPITU-PITU ECOTOURISM IN SAIT KALANGAN II VILLAGE, TUKKA SUB-DISTRICT, CENTRAL TAPANULI REGENCY, NORTH SUMATERA, INDONESIA**

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**Abstract**

*As the Land of a Million Enchantments, the Central Tapanuli Regency has an ecotourism object called Sipitu-Pitu in Sait Kalangan II Village that is now being developed by the Regional Government. The development of Sipitu-Pitu ecotourism takes into consideration both tourism development and ecological factors. This study aims to: (1) identify the potential of ecotourism areas based on spatial planning in Sait Kalangan II Village, Tukka Sub-district, at Central Tapanuli Regency; and (2) analyze the role of stakeholders based on the concept of ecotourism development on the Sipitu-Pitu ecotourism object in Sait Kalangan II Village, Tukka Sub-district, at Central Tapanuli Regency. This research employs a qualitative approach using a descriptive model, and its informants include the government, tourism awareness groups, non-*

*governmental organizations, and visitors. (1) Sipitu-Pitu ecotourism has the potential to be developed by taking into account the spatial pattern based on digitization, slope, and elevation; and (2) stakeholder groups involved in the development of Sipitu-Pitu ecotourism have a role in service, empowerment, development, management, planning, and implementation of development, in addition to evaluators. In the process of developing Sipitu-Pitu ecotourism, stakeholders also pay attention to development aspects such as attractiveness, amenities, accessibility, and ancillary aspects.*

*Keywords: Ecotourism development, Role of stakeholders, Spatial planning, Indonesia*

## **INTRODUCTION**

Ecotourism is one aspect of tourism managed with a focus on conservation. Ecotourism is conducted by managing the community's ecology and culture to guarantee its sustainability and wellbeing, while conservation is an endeavor to assure the continued use of natural resources into the future. As tourist attractions, conservation areas might take the form of national parks, grand forest parks, nature reserves, wildlife sanctuaries, or hunting and tourism parks. But other forest areas, such as protected forests and production forests, may be employed as ecotourism development attractions if they have natural characteristics that serve as ecotourism attractions. Examples include rivers, lakes, swamps, waterfalls, peats, etc. The best course of action is to keep the area sustainable as a natural area.

The Central Tapanuli Regency is one of the regencies in North Sumatera Province with a strategic tourism sector that has the potential to be managed, developed, and marketed, taking into consideration the many natural, cultural, historical and human-made tourism (Spatial planning for the Central Tapanuli Regency, 2013–2033). A landscape is a necessary feature for an area in order to operate as a tourist destination. The Central Tapanuli Regency has both lowlands (eg, beach/sea) and highlands (eg, hills).

In terms of natural tourism objects, the Central Tapanuli Regency has a conservation and ecotourism area called Sipitu-Pitu ecotourism, which is now being developed by the Regional Government in Sait Kalangan II Village. This ecotourism is a 14.77 hectare protected forest that has been administered by the Regional Government for the previous 2.5 years. This ecotourism also has a variety of natural potentials, including waterfalls, flora, and fauna. A map of the Regional Spatial Plan for 2013–2033 for the Central Tapanuli Regency, which is overlaid with the Sipitu-Pitu ecotourism map (as shown in table 1).

Table 1. Land Use Spatial Plan for Central Tapanuli Regency

No	Area	Large	
		Ha	%
1	Pandan Lake	116.58	0.05
2	Protected forest	60487.74	25.97
3	Limited production forest	39991.06	17,17
4	Permanent Production Forest	3808.85	1.64
5	Industry	3379.50	1.45
6	City	769.10	0.33
7	Wetlands	11652.83	5.00
8	Dry land	40387.77	17.34
9	Mangroves	1217,77	0.52
10	Religious Tourism	21.16	0.01
11	Fishery	153.92	0.07
12	Plantation	53038.83	22.77
13	Settlement	17842.56	7.66
14	Nature Reserve	34.33	0.01
	<b>Total</b>	<b>232902.01</b>	<b>100</b>

According to Table 1, the Central Tapanuli Regency Spatial Plan identifies twelve distinct types of land use. The largest protected forest is 60487.4 hectares in size, accounting for 25.97% of the total area. Initial observations revealed a number of challenges to the development of ecotourism in Sipitu-Pitu. First, the quality of human resources, in this instance, the community, will undoubtedly impact the ecotourism situation's management pattern and its long-term viability. Second, infrastructure access. Accessibility to this ecotourism destination area requires more effort. Seeing the potential of the Sipitu-Pitu ecotourism object by the end of 2021, the Sait Kalangan II Village Government has participated in the Ministry of Tourism and Creative Economy's training programs, including destination management, ecotourism guides, and homestay management. This guideline is intended for the Tourism Awareness Group and the Regional Government, whose goal is to encourage community and local government engagement in establishing Sipitu-Pitu ecotourism. Third, aside from the Landsat image map, early observations have not uncovered any spatial planning-based mapping of the Sipitu-Pitu ecotourism potential. Spatial planning is crucial to achieving a balance between the government's programs plan as a master plan and continuing development.

Previously, the Tourism Office of Central Tapanuli Regency had played a part in the development of Sipitu-Pitu ecotourism, but it was suboptimal. Their responsibilities were

confined to budgeting and oversight. As of 2019, the budget spent on ecotourism development reached IDR 2,168,280,407, which was utilized to build pathways, gaming facilities, hawker centers or canteens, gazebos, and bathrooms (LAKIP Central Tapanuli Regency in 2019). The stakeholders in this study, such as the government, the community, members of the Tourism Awareness Group, non-governmental organizations, and tourists, have not been able to fully develop ecotourism due to the lack of capital and the spread of COVID-19, which requires the government to prioritize on more urgent issues such as health. As a result, the participation of stakeholders in the development of Sipitu-Pitu ecotourism is limited since they must rely on a budget. The growth of ecotourism undoubtedly requires a significant amount of money and takes a long time to complete, thus the presence of visitors is quite low.

According to the Head of Sait Kalangan II Village, the Sipitu-Pitu ecotourism has been visited by several researchers both from within the country and abroad, and some have even conducted research for 22 years from Sweden, despite the Regional Government having only carried out development since mid-2018. Seeing this state, researchers are interested in undertaking a study on the Sipitu-Pitu ecotourism topic. Researchers aim to identify and examine the degree to which stakeholders were involved in the Sipitu-Pitu ecotourism project in Sait Kalangan II Village. Researchers will also explore the ecotourism potential of Sipitu-Pitu utilizing spatial planning and analysis.

As a result of the above, we define the issue as follows:

- 1) How does spatial planning affect the potential of the Sipitu-Pitu ecotourism area at Sait Kalangan II Village, Tukka Sub-District in Central Tapanuli Regency?
- 2) Based on the idea of ecotourism development, what is the role of stakeholders in the Sipitu-Pitu ecotourism object in Sait Kalangan II Village, Tukka Sub-District in Central Tapanuli Regency?

The purposes of this study are as follows:

1. To determine the potential of ecotourism areas based on spatial planning in Sait Kalangan II Village, Tukka Sub-District, Central Tapanuli Regency.
2. To analyze the role of stakeholders in the development of the Sipitu-Pitu ecotourism object in Sait Kalangan II Village, Tukka Sub-District, Central Tapanuli Regency, using the concept of ecotourism development.

The following benefits are anticipated from this research:

- 1) For the regional government, the results of this study are expected to be used as guidelines in formulating regulations related to the development of Sipitu-Pitu ecotourism in Sait Kalangan II Village, Tukka Sub-District in Central Tapanuli Regency.

- 2) The results of this study will help the community decide how to develop Sipitu-Pitu ecotourism in Sait Kalangan II Village, Tukka Sub-District in Central Tapanuli Regency, based on the information gathered.
- 3) Academicians can use the results of this study as a starting point for more research on how Sipitu-Pitu ecotourism can be developed in Sait Kalangan II Village, Tukka Sub-District in Central Tapanuli Regency.
- 4) The researchers were able to learn more about the growth of Sipitu-Pitu ecotourism in Sait Kalangan II Village, Tukka Sub-District in Central Tapanuli Regency, based on the results of this study.

## LITERATURE REVIEW

### Area Development

Development is the process of adding, improving, or expanding. In Indonesia, the concept of regional development arose through an iterative process that combined the fundamentals of academic knowledge with practical experience as a form of dynamic application (Sirojuzilam and Mahalli, 2010). A territory is a collection of areas that extend in form and size as a geographical entity. Regions contain natural resources, human resources, and geographical situations that can be handled and exploited efficiently and effectively via thorough planning (Miraza, 2005).

A territory refers to an area or region that is commonly characterized as a space with a unified development of physical, social, and economic life. The area is defined in Law No. 26 of 2007, regulating spatial planning as a geographical unit and all connected components to it, the borders and systems of which are set based on administrative and/or functional aspects. Regional development essentially implies enhancing the value of the area's advantages to the community. A specific area can accommodate more residents with an average level of community welfare. There are several amenities and infrastructure, products or services are available, and community business activities are expanding, both in terms of kind, intensity, service, and quality (Sirojuzilam, 2005).

Mulyanto (2008) defines regional development as any government activity carried out in collaboration with the actors to achieve a goal that benefits both the region and the administrative unit of which the area is a part, in this example, the Unitary State of the Republic of Indonesia. According to Budiharsono (2005), regional development should be supported by at least six pillars or elements: (1) biogeophysical aspects, (2) economic aspects, (3) socio-cultural aspects, (4) institutional aspects, (5) location aspects, and (6) environmental aspects.

Regional development is development that focuses on the area. The infrastructure that is intended to be created is in response to the area's development demands. Regional development is necessary due to the varying regional circumstances (economic reasons) and the diverse potential of each area, such as the potential of natural resources.

The idea of regional development emerges as a result of the necessity for an area to develop, particularly due to the availability of natural resources and the rising requirements of the community as the population increases. Efforts to develop an area are a series of activities designed to achieve integration in the use of various resources, to synergize and balance development in all regions of Indonesia, and to improve inter-regional harmony and integration between development sectors through the spatial planning process to achieve sustainable development goals.

Regional development is critical to the development of a region, particularly in areas with abundant resources that are vulnerable to global changes, such as rapid technological advances in relatively developing regions, resulting in underdeveloped regions with limited resources and access to resources. As a result, regional development planning must be global in character, taking into account the inter-regional and inter-sectoral linkages with varied consequences that will emerge in order to develop the whole sector as a unit in the framework of equitable development.

Regional development aims for regional prosperity by optimally empowering all existing potential and pursuing harmony and balance of growth across areas in order to ensure that they can provide the maximum benefit for the entire community. Regional development planning in general aims to achieve optimum utilization of natural resources through local economic development to reduce regional disparities or regional imbalances; sustainable development; to maintain and increase the rate of economic growth; to develop underdeveloped areas according to their potential; to stimulate economic growth and infrastructure development.

### **Role of Stakeholders**

A stakeholder role analysis is performed in policy studies to show the interests and influence (roles) of the stakeholders. According to Bryson cited by Hardiansyah (2012), the analysis of the role of stakeholders starts with grouping the stakeholders in a two-by-two matrix based on the stakeholder's interest in an issue and the stakeholder's ability to impact the problem. Concern is the stakeholder's interest in development. Power, on the other hand, means that stakeholders have the ability to change or make development policies and rules.

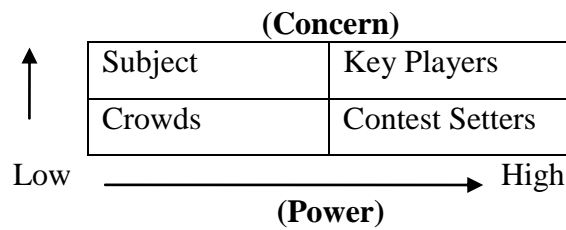


Figure 1. Stakeholder Role Analysis Matrix from Bryson

Figure 1 shows the following: (1) Contest setters have tremendous influential but little relevance; hence, they will pose a significant risk that must be monitored. (2) Key players are active stakeholders because they have a keen interest in and influence over the development of a project or program. (3) Subjects have a high level of interest but a low level of influence, and although they support the activity, the ability to influence may not be there. They may, however, be influential if they create alliances with other stakeholders, and (4) the crowd are stakeholders who have minimal interest and influence over the intended result, which is a factor to consider when incorporating them in decision making.

### Government Role

According to Siagian (2003), the government has five roles: 1) stabilizer, which includes building political, economic, and social conditions; 2) innovator as a reformer; 3) modernizer, which includes being able to follow developments; 4) pioneer, which can be used as a role model; and 5) self-implementation, which includes carrying out responsibilities without the involvement of other parties. Rasyid (2000) summarizes the major duties of the government as three functions: service, empowerment, and development.

In order to carry out the government system, the government is obligated to establish conducive conditions that have a positive influence on the growth of society. According to Syafilie (2011), the obligation of the government as a primary agency is to pay attention to order, community demands and expectations, as well as community needs and the ensuing environmental consequences.

As a result, the government's role is to act as a leader, mover, and model, with responsibility for all functions, including services that promote justice, empowerment that fosters independence, and development that produces communal wealth. The government must also be capable of protecting the community from all of its requirements, as well as offering a responsive attitude to environmental situations that focuses on delivering information and incentives to the community. This, of course, applies to both the regional and village governments, which will be explored in this study.



## **Community Role**

According to Rizal (2017), community participation in development is comprised of four components: proposals in the form of ideas; energy in the form of physical support; resources in the form of materials or funds; and technology that may support the times' progress. Meanwhile, according to Horoepoetri and Achmad (2009), the community plays a role in government, specifically as policymakers, strategies, communication tools, dispute resolution tools, and treatment for other communities. Jufrina (2009) argues that the community can take part in forestry development from the planning stage through implementation, management, and evaluation.

It may be inferred that the community's role in development is an attempt or strategy used by the community to establish an area in which the region and the municipal government need participation. In this study, a more specific discussion used by the researchers is the role of the community in the context of preparing activities or programs, participating in physical activities, and providing advice and information about resources, forest potential, or ecotourism potential in their environment, beginning with the development planning stage, implementation, management, and evaluation of development.

Some residents of Sait Kalangan II Village work as administrators or members of the Tourism Awareness Group. This group serves as a tourist awareness mover and as a regional government partner in efforts to realize and develop tourism awareness in the Sipitu-Pitu ecotourism object environment.

## **The Role of Non-Governmental Organizations**

Non-governmental organizations (NGOs), according to Gaffar (2006), are non-governmental entities that serve as a bridge between the community and the government and as an alternative to the emergence of civil society. Abidin (2004) posits that the expansion of NGOs is seen as a symbol of civil society's progress in fighting for rights and interests. He further argues that NGOs are necessary to implement local initiatives to foster sustainable usage of forest lands, which have an influence on the economic development of areas that are related to community-based forest management programs.

NGOs that do not have a thorough performance appraisal system typically only analyze financial audits and activities or programs that have been completed. This study will include non-governmental organizations (NGOs) in the development of ecotourism as a tool for community empowerment. This will be done through an ecotourism program that focuses on protecting the environment and building sustainable local tourism businesses.



## **Tourist Role**

Norwal (2015) defines a tourist as someone who visits another country's territory for any reason other than seeking work or permanent residency and spends money. Suhartono (2004) identifies tourists as visitors who decide their conduct when going beyond their country to fulfill their wants and desires. This study explains how the role of tourists who visit the Sipitu-Pitu ecotourism object is explored and classified depending on whether they originate from an individualist or a collectivist society.

## **Ecotourism**

Ecotourism is one of the most environmentally friendly forms of tourism due to its emphasis on nature conservation, social empowerment, culture, the local economy, and education and learning. When conventional tourism activities have a negative impact, ecotourism arises. Not only do environmental professionals state and demonstrate this negative consequence, but also culturalists, community leaders, and tourist sector players. Environmental degradation, the unchecked impact of local culture, a diminished role for the local community, and commercial competition have begun to threaten the environment, culture, and economy of the local community. Ecotourism is responsible travel to natural areas that preserves the environment and improves the welfare of local residents; has a direct impact on area conservation; contributes to efforts to empower the local community's economy; encourages conservation and sustainable development; and is even becoming an economic policy tool in developing countries.

According to Clifton (2020), ecotourism emphasizes the obligation to promote and protect the conservation of the natural environment, promote the economic well-being of local communities, and reduce societal consequences detrimental to culture coming from interactions between visitors and residents. As per Hakim (2012), the first stage in the development of forest ecotourism is to optimize the biophysical potential of forest ecosystems, which entails determining concepts or ideas in a simple but obvious manner. Landscape planning is the methodical evaluation of land areas for varied future demands based on ecological and land use challenges.

The benefits of ecotourism are experienced in a variety of ways, including conservation, empowerment, and environmental education. The ecotourism principle must be combined with environmental conservation, community development, and sustainable tourism. This implies that all parties involved in the implementation and participation in ecotourism must follow these values and principles. The following are the ecotourism principles:

- 1) Minimize the impact of physical, social, behavioral, and psychological issues.
- 2) Increase environmental consciousness, culture, and respect.

- 3) Ensure a positive experience for visitors and hosts.
- 4) This provides direct financial benefits for the conservation or preservation of the environment.
- 5) It also generates financial benefits for local communities and private industry.
- 6) Provide an impressive interpretive experience for visitors to increase sensitivity to the political, environmental, and social climate of tourist destinations.
- 7) Build and operate a facility or infrastructure with the least amount of environmental impact.
- 8) Recognize the rights and spiritual beliefs of indigenous communities and empower them.

### **Ecotourism Development**

In order to maximize an area's tourism potential, it is critical to create the attractiveness of the tourist destination itself. According to Zulkifli (2018), the following factors must be considered while developing an ecotourism area:

The concept of ecologically-based ecotourism, which is an option to turn an area into a tourist attraction while still paying attention to environmental protection by using resource potential and local community culture, Ecotourism development is not just meant to provide economic benefits; rather, it must also include the preservation of ecological and social quality. This is commonly referred to as the notion of sustainable development. Ecotourism refers to a concept of sustainable and ecologically friendly tourism that differs from other types of tourism in that it is responsible for environmental conservation, plays a part in attempts to empower the local community's economy, and respects local culture.

The concept of the suitability of ecotourism areas, which is a concept that prioritizes regional mapping planning, because the existence of a tourist area is closely related to land use, which is an important element in regional planning, The use of an area as an ecotourism area will affect the ecological and social changes of the community. Social change is all the changes in social institutions in a society that affect the social system, including the values, attitudes, and behavior patterns between groups in society. Therefore, in the development of conservation areas into tourist areas, it is necessary to consider that tourism activities should not cause disruption to the function of conservation areas caused by uses that are not in accordance with the existing area.

The concept of carrying capacity, which is a concept that highlights the size of the maximum limit of an area's usage based on its sensitivity or tolerance, which is determined by different natural elements such as food supply, living space, shelter, and

water availability, the regional carrying capacity is an essential indicator in regulating human activities and the availability of supporting land such that situations that exceed capacity or over-carry capacity do not develop, causing human discomfort, which in turn might damage environmental resources. The carrying capacity of this area is a measure of how much space can be used without affecting the area's ability to provide environmental services.

Cooper (1993) adds the notion of 4A (Attraction, Accessibility, Amenity, and Ancillary) that must exist in tourism development, including ecotourism, as follows:

### **1) Attractions**

Attractions are a significant component in attracting tourists. There are three major attractions that attract tourist arrivals, namely: 1) natural resources, 2) cultural tourism attractions, and 3) human-made attractions themselves. The existence of attractions is the reason and motivation for tourists to visit tourist attractions.

### **2) Amenity**

Tourists need a variety of services and infrastructure when they visit tourist destinations. Lodging, restaurants, transportation, and tourist agencies are among the amenities and infrastructure under question. Tourism amenities such as hotels, tourist attractions, marinas, theaters, and such are created by utilizing appropriate infrastructure. Roads, water supply, energy, landfills, airports, ports, networks, and other infrastructure are all required for the growth of tourist regions.

### **3) Accessibility**

The most significant aspect of tourist activities is accessibility. Tourism relies heavily on many modes of transportation and transportation services. This access, on the other hand, is associated with transferability, or the ease of traveling from one place to another. If a location lacks adequate accessibility, there will be no visitors to influence the growth of accessibility in the region. If a place has the potential to be visited by tourists, it must be easy to get to.

### **4) Ancillary**

The local government in a tourist destination has to offer additional services for both visitors and tourism-related actors. Marketing, physical development (roads, trains, drinking water, electricity, and telephone), and organizing all types of activities and complying with all rules and regulations on roads and tourist sites are among the services supplied. Travel agencies, information, travel agents, and stakeholders who play a part in tourism are examples of ancillaries.

## **Spatial**

Manuhua (2013) asserts that the development of ecotourism areas must be based on spatial planning and land suitability. The suitability of land for tourist amenities, as well as spatially optimal ecotourism spatial design, must be seriously considered. Spatial analysis investigates the variations in location of essential characteristics or important trait series. The data obtained in spatial analysis might be in the form of point, line, or area data (Bintarto and Hadisumarno, 1991: 12). The distribution of existing space and the supply of space for diverse intended applications are two factors that must be addressed. The spatial approach is a point of view or analytical framework that emphasizes the presence of space in terms of structure (spatial structure), pattern (spatial pattern), and processes (spatial processes). The spatial structure refers to the components that comprise space, which are represented in three primary ways: points, lines, and areas.

## **Planning and Design**

According to Zain (2008), space is a place for carrying out spatial activities that are accommodated on the site or land based on the idea of ecotourism, natural resource conservation, and the functions that will be implemented. In this case, the developed area includes reception, service, conservation, and tourist rooms.

The reception room is the first room visited by visitors and is provided as visitor access from the gate or entrance to the service room by utilizing existing spaces and routes. The tourist service room is a space that accommodates the preparation of visitors' tours. In addition, this space also serves to accommodate the needs of the community in terms of its interests, namely the livelihoods of the residents. The tourist service room refers to a space that accommodates various tourist facilities such as parking areas, information centers, canteens, and rest rooms. This space is a protected area for flora and fauna habitats in the ecotourism object area. The determination of the buffer space is limited by the selection of wetlands and sloping lands as well as shallow water boundaries. The tourist activities carried out in this space are intended for educational tourism activities through the interpretation of forest vegetation such as tracking and relaxing. An ecotourism room refers to a space used to carry out the main activities of tourism. This space contains tourist objects and attractions, so this space is used as a space to carry out interpretative tourism activities, both educational and non-educational. The types of tourism activities that can be carried out are in the form of activities such as beach tourism, relaxing, tracking, photography, enjoying the view, and camping.

## **Zone Zoning**

One facet of ecotourism area management related to land use in the development area is zone zoning. The goal of zoning the area is to limit the negative effect of area activities caused by visitor demand on protected areas and to lessen the pressure and concentration of visits just at one specific spot, such as in a forest region, by giving several program alternatives in an ecotourism area.

Zoning and bike and pedestrian trails are vital for ensuring that tourism does not have a negative influence on the local ecosystem. To maintain the survival of these species, beautiful regions with a variety of species that are sensitive to noise and other disturbances must be protected from visitors. In the construction of destinations, routes for bicycles or pedestrians to appreciate these species may be planned (Hakim, 2004).

According to the Leuser Management Unit (2004), the following factors should be considered when determining area zoning: the status and function of the area; regional sensitivity; regulations related to development areas; space access and participation opportunities for the community; accessibility and access control; visitor safety and comfort; optimization of potential available tourism; optimization of tourism support facilities; and cost efficiency. One of the most essential variables in the development of tourist attractions is land carrying capacity. According to Hakim (2004), the question of environmental carrying capacity must be incorporated into the issue of land use when it comes to the growth of the tourist industry. Using the zoning system is one way to make sure that carrying capacity is met.

## **Geographic Information System in Ecotourism Development**

A Geographic Information System (GIS) is a data-driven information system that represents objects on Earth using spatial data. Information technology is a tool that helps the Geographic Information System (GIS) store data, process data, analyze data, manage data, and present information.

According to Burrough (1998), a Geographic Information System (GIS) is a set of functions that provide professionals with the needs of storage, retrieval, manipulation, and display of results based on geographic-based data. This technology has been used in research related to ecotourism planning (Bunruamkaew & Murayama, 2011), (Bunruamkaew & Murayama, 2012) and (Rahayuningsih et al., 2016). Geographic Information System (GIS) technology can be used to develop ecotourism in a way that is sustainable.

In land use development studies, GIS has more benefits than traditional methods when it comes to combining different data sources, doing spatial analysis, and mapping the results. GIS is indispensable to supporting tourism development. GIS can help map the geographical

potential of tourism resources, especially when it comes to showing how ecotourism could work. A Geographic information system is an information system related to geosphere phenomena. GIS has a lot of uses for ecotourism, such as making an inventory of ecotourism areas and figuring out which attractions are the most popular.

Bahaire and White (1999) linked Geographic Information Systems (GIS) with basic applications in tourism. As for ability Geographic Information System (GIS) in tourism, namely:

- Data entry, storage location, and manipulation are related to tourism resource supply.
- Production of condition maps: identification of the most suitable locations for development.
- Trend integration and database management: measuring the impact of tourism.
- Route query and search data: visitor/flow management.
- Spatial analysis: this analyzes the relationships associated with resource use.
- Spatial modeling: a study of the potential impacts of tourism development.

### **Ecotourism Attraction Mapping**

Mapping ecotourism attractions is the process of collecting or recording data in graphic form on the location and location of ecotourism attractions. The purpose of the mapping activity is to show the current state of ecotourism attractions so that they can be used as a basis for future policies that will help protect them.

### **Related Regulations**

- 1) Law Number 23 of 2014 Concerning Regional Government
- 2) Law Number 10 of 2009 Concerning Tourism
- 3) Law Number 26 of 2007 Concerning Spatial Planning
- 4) Central Tapanuli Regency Regional Regulation Number 8 of 2013 concerning Spatial Planning of Central Tapanuli Regency 2013-2033.

### **CONCEPTUAL FRAMEWORK**

In the study, the researchers used the tourism development concept of Cooper (1993), and the ecotourism spatial pattern will be described with spatial data. The researchers will also map the potential of ecotourism based on the tools and materials that have been prepared. This study aims to analyze the role of stakeholders, consisting of the government (local government, sub-district government, and village government), tourism awareness groups, non-governmental

organizations (NGOs), and tourists. The conceptual framework in this study can be seen in Figure 2 as follows:

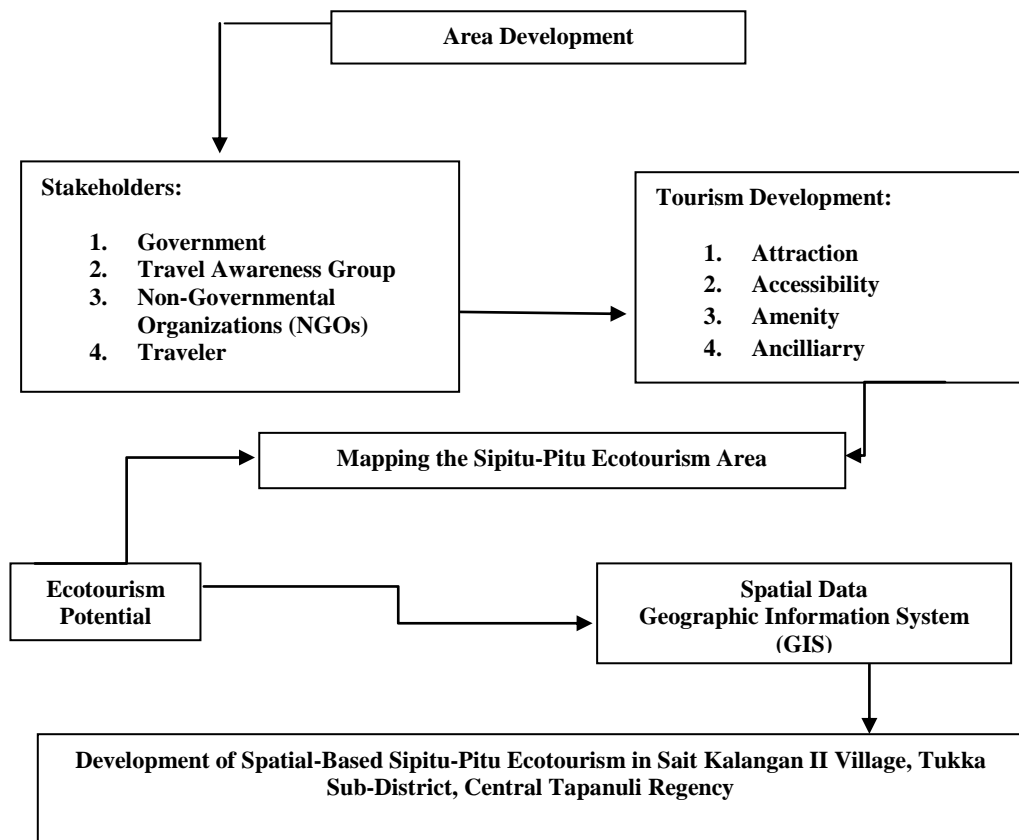


Figure 2. Conceptual framework

## RESEARCH METHOD

### Research approach

This research approach is qualitative research with a descriptive model. Research that intends to understand the phenomenon of what is experienced by research subjects holistically and by way of description in a special natural context and by utilizing various scientific methods (Moleong, 2007). Descriptive research seeks to describe current problem solving using data. This research took place from January 2022 to September 2022 in Sait Kalangan II Village, Tukka Sub-District-Central Tapanuli Regency. Central Tapanuli Regency, North Sumatera, which has an area of 2,194.98 km<sup>2</sup> (219,498 ha). The object of research involves parties involved in the management of ecotourism objects such as: (1) government (Village Government, Sub-District Government, and Regency Government), (2) community, NGOs, and tourists. (2) Forest areas and tourist destinations.



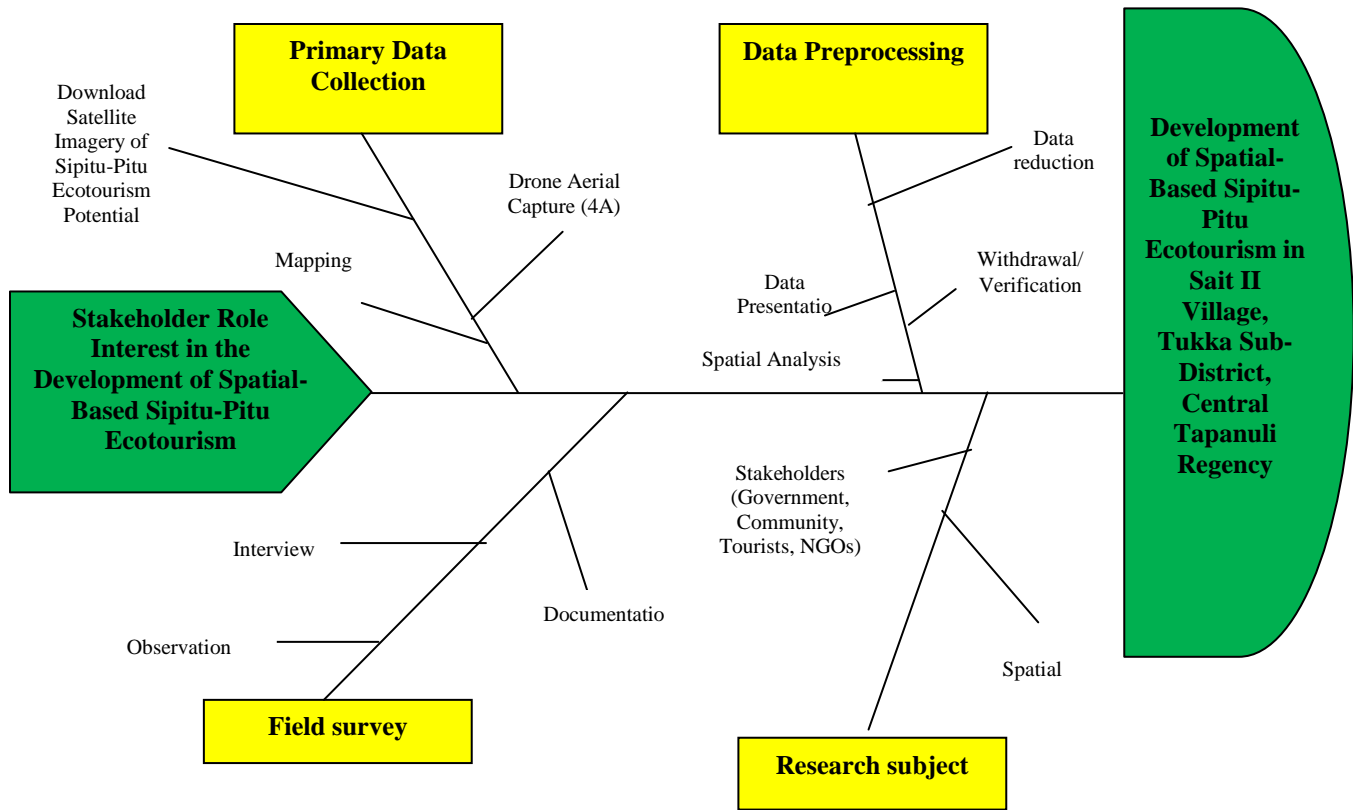


Figure 3. Research Stages

### Research data

The research data taken is secondary and primary data. Secondary data collected includes the general condition of the research location or general data from the Village, Sub-District, or Regency government agencies. The primary data collected includes socio-economic data of the community and research results related to the research objectives. The initial observations from the research in the Sipitu-Pitu ecotourism area are as follows:

- Attraction : Seven-Level Waterfall
- Accessibility : Footpath  
Entrance  
Parking lot
- Ancillary : -
- Amenity : Dirt Bike Rental

### Research Informants

The selection of informants was done by a purposive sampling method. The informants of this research are stakeholders who really know and have been directly involved in the

development of Sipitu-Pitu ecotourism. Researchers need to pay attention to age and education level when determining informants. In this study, researchers will use informants who are at least 17 years old because the informants taken are of productive age. The minimum education level is junior high school because the difference in education level of each informant affects the mindset and participation both in managing and maintaining the existence of natural tourism (Dedek et al., 2017). In this study, the following factors were looked at: (1) mapping of ecotourism potential as a tourist attraction; (2) community organizations; and (3) tourist activities.

### Data collection technique

Data collection methods include observation, in-depth interviews, and documenting. Observation, whether biological or psychological, is a deliberate procedure. Memory and observation processes are crucial in observation (Sugiyono, 2012). An in-depth interview is a data collection approach that involves interviewing specified informants (Ghoni, Fauzan, 2012).

### Data analysis approach

Data analysis is the most important and decisive stage in research. This research is limited to the activities of inventorying, analyzing, synthesizing, and planning the ecotourism landscape of Sipitu-Pitu. This study emphasizes qualitative descriptive analysis using two methods: first, mapping the ecotourism potential of Sipitu-Pitu based on the four-A concept using spatial analysis; Second, examine the role of stakeholders, which can be measured to what extent the development of the Sipitu-Pitu ecotourism area is viewed from the following: attraction, amenity, accessibility, and ancillary. Miles and Huberman (1992) pointed out that the analysis is made up of three flows of activities: reducing the amount of data, presenting the data, and drawing and verifying conclusions.

## RESULTS

### Informant Characteristics

Table 2. Informant Characteristics

No.	Name	Age	Occupation	Education
1.	Diego Sitanggang	40	Civil Servant	Postgraduate
2.	Elini Sitompul	36	Civil Servant	Postgraduate
3.	Marojahan P. Sipahutar, S.Si, MT, M.Eng	42	Civil Servant	Postgraduate
4.	Julkhaidir Pardede, SE	51	Civil Servant	Bachelor

5.	Panggabean	44	Village head	Senior High School
6.	April Samosa Siregar	36	Civil Servant	Bachelor
7.	Suprianto Manurung	31	Honorary staff	Bachelor
8.	Khemal Saragih	25	Honorary staff	Vocational high School
9.	Yogo Pangestu	25	Civil Servant	Bachelor
10.	Roni	20	Office Boy	Vocational high School
11.	Friska Hutasoit	34	Entrepreneur	Postgraduate
12.	Samres Panggabean	41	Farmer	Senior High School
13.	S. Hasibuan	36	Farmer	Senior High School
14.	T. Sitompul	29	Farmer	Senior High School
15.	Simanungkalit	38	Farmer	Senior High School
16.	L. Sitompul	43	Farmer	Senior High School

### The Potential of Sipitu-Pitu Ecotourism Based on Spatial Planning

The concept of the Sipitu-Pitu ecotourism area is part of tourism, which is supported by Minister of Home Affairs Regulation Number 33 of 2009 Concerning Guidelines for Ecotourism Development in the Region as the basis for regional development through planning, use, control, institutional strengthening, and community empowerment strategies that take into account social, economic, and ecological rules and involve stakeholders. Sipitu-Pitu ecotourism has great potential for growth, particularly since it is the sole ecotourism in Central Tapanuli Regency and has its own unique draw for both local and international visitors. Sipitu-Pitu ecotourism may undoubtedly benefit the surrounding community in terms of social, economic, and cultural elements.

#### 1) Location and Land Use

The selection of the concept of location for ecotourism development is based on several main elements, namely: 1) ecotourism is highly dependent on the quality of natural resources; 2) ecotourism involves the community; 3) ecotourism increases awareness and appreciation of nature, historical and cultural heritage values; 4) the growth of the ecotourism market at the international and national level; and 5) ecotourism as a means of realizing a sustainable economy. In other words, ecotourism offers a low-invest high-value concept for natural resources and the environment while making it a powerful tool for community participation because all production assets are used by and belong to local communities. Therefore, given the great potential and limited capacity of the government, the form of Sipitu-Pitu ecotourism development needs to be done carefully so as not to cause unwanted impacts. The selection of

locations for the development of the Sipitu-Pitu ecotourism area is carried out by looking at the potential that comes from natural resources.

Land use is an important thing to plan both in urban and rural areas. Currently, land use that is not oriented towards sustainable development results in a decrease in environmental quality, damage to infrastructure and facilities, settlements, and can even be the cause of disasters that take lives. This ecotourism location has the potential as a means of recreation, education, and research, which will affect the economic level of the village community. With the support of various stakeholders, the determination of the location and use of land in the Sipitu-Pitu ecotourism area will be well directed.

## 2) Accessibility

Accessibility is one of the important aspects in the development of ecotourism. With good planning, the government distributes the budget for the development of ecotourism areas. As protected forests have been turned into ecotourism areas, there have been many changes. For example, the main road from the capital of Central Tapanuli Regency to the village is now a path in the Sipitu-Pitu ecotourism area that leads to a waterfall.

Ecotourism, as one of the alternative tourism products in sustainable tourism development, is development that ecologically provides benefits in the form of environmental sustainability, indirectly providing significant changes to the physical condition of the road. However, the physical changes on the roads that have not been built as a whole certainly cause a sense of dissatisfaction.

The government has made efforts to improve access to the Sipitu-Pitu ecotourism location. Although it has not been fully realized, the community can feel the development of this access. Of course, looking at the feasibility of developing ecotourism areas does not always focus on road conditions, but on the location and potential of ecotourism. The assessment of the feasibility of ecotourism areas can be seen in terms of land ownership, natural resource potential, and the ability of human resources to conserve nature (Wiyanti, 2018).

## 3) Topography and Land Conditions

According to Suparno and Endy (2005), topography is a condition that defines the slope or contour of the land. The larger the contour of the terrain, the steeper the land. This topographic map can be used to plan the development of a region, such as by making ecotourism zones.

The Sipitu-Pitu ecotourism in Sait Kalangan II Village was built while keeping in mind the preservation of resources capable of providing and increasing knowledge and experience of the

flora and fauna ecosystems. Attractions and tourist attractions with particular features and habitats supported by natural vegetation are preferred at Sipitu-Pitu Waterfall. The development of Sipitu-Pitu ecotourism will likely enhance tourist interest in ecotourism regions. The researchers categorized the map data collected at the Sipitu-Pitu ecotourism area based on digitization, slope, and elevation.

According to the study's findings, the Sipitu-Pitu waterfall is situated in a secondary dryland forest area. The drier forest offers a lot of potential for ecotourism development. As per Fandeli (2001), forest ecosystems have a wealth of biodiversity information that may be leveraged to create ecotourism objects. The forest in the Sipitu-Pitu ecotourism area is a tropical rain forest, which means it benefits from natural conditions such as a tropical climate, which influences the intensity of sunlight, rainfall, temperature, soil type, and fertility, all of which influence the growth of various types of vegetation. This is advantageous since many production plants may be grown and cultivated by locals.

Martono (2004) posits that the condition of the land's height has a significant impact on its potential. Higher and longer land will increase the velocity of surface runoff and the volume of surface water. Elevation on land, on the other hand, may lead to disasters such as erosion. Kartasapoetra et al. (1987) argue that one of the ways to lower the amount of erosion danger on land is to build terraces.

#### 4) Hydrology

Hydrology has been extensively studied in its development to estimate the amount of water available in a water source, whether springs, rivers, or lakes, to be used for various purposes such as raw water (water for household purposes and trade), irrigation, power generation, water, fisheries, and animal husbandry. A hydroelectric power plant in the Sipitu-Pitu ecotourism area utilizes the Sipitu-Pitu waterfall as an energy source. This waterfall offers huge development potential in Central Tapanuli Regency. Furthermore, the Sipitu-Pitu waterfall serves as a recreational area for the surrounding people. There are fresh water sources in seven distinct areas.

#### 5) Vegetation

Vegetation as a collection of plants consists of several types, such as herbs, trees, and shrubs that live together in one place and interact with one another to form an ecosystem (Ifan cited by Agustina, 2008). The composition of the plant ecosystem in the Sipitu-Pitu ecotourism area can be interpreted as a variety of flora types that make up a community. While conducting

research in the Sipitu-Pitu ecotourism area, researchers found rare plants that are rarely found in other locations.

#### 6) Animals

The existence of these types of animals in the Sipitu-Pitu ecotourism area is also one of the potential aspects that must be protected and preserved both by the community and the government. This type of animal is part of the uniqueness that can be used as a leading tourist attraction in the Sipitu-Pitu ecotourism area.

#### 7) Stakeholders

Sipitu-Pitu ecotourism is part of a protected forest area. The negative impact of ecotourism activities on natural forests can be overcome by empowering local communities in conservation-based ecotourism activities so that the preservation of natural resources can be maintained. The importance of the role of stakeholders in the process of developing ecotourism areas will affect the quality of human resources in terms of knowledge and experience. Stakeholder involvement can influence the planning, development, and management systems in the Sipitu-Pitu ecotourism area.

### **The Role of Stakeholders with the Concept of Ecotourism Development**

The Village Government, Sub-District Government, and Regency Government carry out pioneering ecotourism activities in stages, with capacity building as a priority. This development activity is also inseparable from the participation of the community, non-governmental organizations, tourism actors (tourists), and other relevant stakeholders. The concept of ecotourism development carried out by stakeholders in this study uses the four A concepts (Attraction, Amenity, Accessibility, and Ancillary) (Cooper, 1993). This theory is very well-known and useful for figuring out how Sipitu-Pitu ecotourism in Sait Kalangan II Village, Tukka Sub-District in Central Tapanuli Regency has changed over time.

#### 1) Attractions

Sait Kalangan II village is in close touch with protected forests, which feature a variety of natural potentials, including waterfalls, vegetation, and animals. Three factors must be addressed while establishing the notion of ecotourism attraction: something to see, something to buy and something to do (Cooper cited by Yoeti, 2003).

### *Something to See*

#### 1. Sipitu-Pitu Waterfall

Sipitu-Pitu waterfall is one of the natural attractions, which consists of seven levels. The charm of the Sipitu-Pitu waterfall is a leading attraction and is often visited by tourists.

#### 2. Landscape and Humidity

Peaked landscapes, such as the mountains in the Sipitu-Pitu ecotourism area, have the potential to be used as a tourist attraction. The Head of the Object Development Division of the Central Tapanuli Regency Tourism Office stated that the landscape in the Sipitu-Pitu ecotourism area can be of special interest to nature activists and academics.

#### 3. Flora and fauna

The ecotourism potential of Sipitu-Pitu has two parts: vegetation and animals. Sipitu-Pitu ecotourism has natural beauty and a diversity of plants and animals that can be used as attractions. The uniqueness of flora and fauna owned by Sipitu-Pitu ecotourism can certainly be used as a superior object. In the development of an ecotourism area, the main attraction offered is nature. But even though Sipitu-Pitu is totally reliant on nature, the Tourism Awareness Group has started to think of ways to develop ecotourism there in the future.

### *Something to Buy*

It is quite important to note that there is something to buy in the concept of developing Sipitu-Pitu ecotourism. This aspect can have a positive impact on the community's economy. When tourism actors or tourists carry out their activities, they cannot be separated from "looking for something to offer to buy". This can be in the form of souvenirs, or even special foods from this Sipitu-Pitu ecotourism location. While conducting research activities in the Sipitu-Pitu ecotourism area, researchers did not find souvenirs, special foods, or anything that could be purchased.

### *Something to Do*

In addition to appreciating the natural beauty of a destination, travelers desire to discover new activities to engage in there. Specifically, in the Sipitu-Pitu ecotourism area, the government and the community as managers must also address the element of activities. During data collection, the researchers discovered a flying fox facility in the Sipitu-Pitu ecotourism area; nevertheless, it must be redeveloped to fulfill the criteria. The objective is to prevent mishaps during usage. White water rafting facilities will be offered, and the flying fox, which is currently present at the



Sipitu-Pitu ecotourism site, will be made safer and more comfortable. Cooper, an expert on tourism development theory, identifies the safety and comfort of travelers as one of the most crucial factors. The arrival of tourists to the Sipitu-Pitu ecotourism location is a source of optimism for the government and the residents of Sait Kalangan II Village. Since the development of Sipitu-Pitu ecotourism is still in its infancy, it is essential to pay close attention to consumers' and tourists' constructive criticism and suggestions.

The waterfall, flora and fauna, and scenery are the popular tourist attractions in the Sipitu-Pitu ecotourism region, as determined by the concept of attraction in terms of something to see, something to buy, and something to do. Local government, village administration, and the community are aware that the primary objective of tourism players will be the enhancement of these existing objects. The growth of the Sipitu-Pitu ecotourism region may be influenced by the significance of constructive criticism and recommendations from visitors. The future plans that will be implemented by the government and the community will attempt to accomplish the intended programs.

## **2) Amenity**

Amenity is an accommodation that includes facilities and infrastructure. Accommodation is a commercially established building. The government plays a role in the development of the Sipitu-Pitu ecotourism area by trying to provide tourism facilities at the location. The construction of these facilities is assisted by the community and supported by the Sustainable Ecosystem Foundation, and they are enjoyed by tourists. However, the existing facilities are still lacking, such as cottages for resting. The cottage is a facility as a resting place in the Sipitu-Pitu ecotourism area. It is anticipated that with the increasing number of tourists visiting the location, the facilities will also increase in accordance with the needs of tourists.

## **3) Accessibility**

Accessibility is the ability to reach a location or region. Included in accessibility are highways; land, sea, and air transportation; communications; telephone networks; and internet networks. Currently, road access to Sait Kalangan II Village is superior to what it was in the past. The Dr. Ferdinand Lumban Tobing Airport, situated in Pinangsori Sub-District, Central Tapanuli Regency, is the closest airport for air travel to the Sipitu-Pitu ecotourism destination. Meanwhile, public transportation is accessible from Medan City (Provincial Capital) to Pandan City via the land route (Central Tapanuli Regency Capital). In terms of accessibility, stakeholders have a direct role in the development of Sipitu-Pitu ecotourism. It was discovered, however, that visitors were becoming unhappy with the quality of the roads and that the

distances were lengthy. Sipitu-Pitu ecotourism is also anticipated to be used for educational purposes. The Sipitu-Pitu ecotourism education development cannot be separated from the involvement of the regional government. This ecotourism may be used as a commercially viable environmental initiative. As for the development of Sipitu-Pitu ecotourism, it is expected that all relevant stakeholders, including the government, the private sector, the community, and tourists, will be able to maintain and preserve nature without negatively impacting the ecosystem, and that this will be considered sustainable development, with stakeholders collaborating to watch out for one another.

#### **4) Ancilliary**

Tourism-related auxiliary elements include managerial institutions that have a role in tourism. A Tourism Awareness Group was founded in Sait Kalangan II Village in order to promote Sipitu-Pitu ecotourism. The communities that are part of the Tourist Awareness Group in Sait Kalangan II Village are involved in government-organized tourism initiatives with private sector assistance. The Tourism Office of Central Tapanuli Regency has provided comparative studies and seminars to the Tourism Awareness Group. The development of ecotourism in Sipitu-Pitu also engages academics as additional partners. The availability of different plants in the Sipitu-Pitu ecotourism region may unquestionably be used by academics for discovery or study, which is anticipated to become a destination for research. Researchers also evaluate the significance of security and comfort in ecotourism destinations. There is a safety assurance for visitors. Obviously, security and comfort are essential in tourist destinations. The growth of ecotourism in Sipitu-Pitu has a favorable influence on the community, but the community still holds out hope that it will proceed without incident. At the time of the COVID-19 outbreak in Indonesia, government laws covering all sectors of tourism slowed the growth of ecotourism significantly.

It is evident that ecotourism activities have become one of the development goals for using sustainable forest resources and that they may boost the income of forest-dwelling people while simultaneously enhancing conservation efforts. The growth of Sipitu-Pitu ecotourism not only enhances the revenue of individuals but also raises the income of both the local and regional governments. Ecotourism's development inevitably has both pros and cons over time.

Bryson (2004) asserts that stakeholder analysis is becoming more essential than ever as the world's natural interrelationships expand, one of which is connected to natural resource management that impacts a variety of individuals, groups, and/or organizations. The stakeholders in this research were categorized according to their degree of interest and power or influence. Interest refers to the concern of stakeholders in the development of ecotourism in

Sipitu-Pitu. In the meantime, stakeholders' power is their capacity, authority, or influence to implement the Sipitu-Pitu ecotourism development.

- 1) High Interest-Low Power (Subject): these are stakeholders who are concerned but lack the authority or ability to act. Low power can be caused by not having the resources (human or financial), non-existent or not stated in the main task force, or low capacity of existing resources.
- 2) High Interest-High Power (Key Players): These are stakeholders who have high interests as well as the resources to carry out ecotourism development activities from the planning, implementation, and monitoring and evaluation stages.
- 3) Low interest-low power (Context Setter) stakeholders have a lot of power but little interest. Therefore, they can be a significant risk and should be monitored.
- 4) Low Interest-low power (Crowd), are those who have low awareness and ability to develop ecotourism.

## DISCUSSION

### The Potential of Sipitu-Pitu Ecotourism Based on Spatial Planning

The researcher explained previously that the development of Sipitu-Pitu ecotourism focuses on nature conservation. More specifically, Weber and Damanik (2006) suggest that ecotourism should include at least the following eight activities: 1) analyzing the state of tourist sites; 2) identifying available facilities and infrastructure; 3) identifying tourist profiles; 4) carrying capacity; 5) selecting the best alternative for ecotourism activities; 6) evaluating the reality of available human resources; 7) estimating the project's investment; and 8) estimating income.

In planning the development of the Sipitu-Pitu ecotourism area in Sait Kalangan II Village, it has its own value standards that have been set by the Ministry and Regional Regulations as well as the Medium-Term Development Plan of Central Tapanuli Regency, which states that the development of tourism destinations is mandatory every year. In setting targets, the regional government is obliged to seek and know the potential of the region it has. The Protected Forest in Sait Kalangan II Village has the potential to be developed into an ecotourism area, in which there are aspects that must be fulfilled in the development of an ecotourism area, such as ecology, land suitability, carrying capacity, or area carrying capacity, which will later be developed with the concept that fits perfectly with the development.

Cooper's (1993) conception of tourist development gives the government, the commercial sector, and the community an awareness of the factors that must be addressed in

the development of ecotourism areas. The development of ecotourism areas may be envisioned appropriately when supported by spatial planning governed by regional regulations. At the Sipitu-Pitu ecotourism site, it is essential to pay attention to the welcome, service, conservation, and ecotourism rooms. With the concept of spatial planning, tourism actors are able to engage in tourist activities that have an effect on the distinctiveness of ecotourism. The significance of determining the zoning is undoubtedly tied to the development area, space access and community engagement possibilities, accessibility, and access control.

The outstanding potential of Sipitu-Pitu ecotourism, discovered by researchers in the field, was based on the concept of tourist development, namely attractiveness factors such as waterfalls, flora, and fauna. This is consistent with the findings of Bagus Nugraha's (2015) study, which identified the potential for ecotourism in terms of physical and visual conditions, the variety of mangrove plant and animal species, large tourist numbers, and strong community support.

However, the findings of researchers in the field did not find the master plan that had been set by the local government. In the opinion of the researcher, if it is associated with Hakim's (2004) theory, which explains that the application of the zoning system is a strategy that can be applied to meet the carrying capacity, then of course the master plan is very important in determining the Sipitu-Pitu ecotourism zoning to be developed. The advantage of implementing the zoning system is to reduce conflicts that arise between the interests of the community, tourists, and the conservation that will be implemented. This is also stated in Liyarossa's research (2017), the importance of zoning mapping in ecotourism areas, namely providing information to visitors about the potential for zoning at the location, making it easier for managers to plant and maintain based on zones. In addition, researchers see that the government's efforts in developing Sipitu-Pitu ecotourism are serious enough to continue. The government of Central Tapanuli Regency seeks to maximize corporate social responsibility (CSR) and good cooperation with companies or private parties. The physical development carried out by the local government is a form of seriousness in making Sipitu-Pitu ecotourism a tourist destination. This is in line with the research of Jia-Lie Ching et al. (2019), which shows that the quality of accessibility, quality of accommodation, natural resources, various activities, and tourism infrastructure are proven to be supported to influence the competitiveness of destinations. As the results of research conducted by Wiharjo Kusumo (2020) show, the development of ecotourism services in villages includes efforts to develop local empowerment, infrastructure development to fulfill environmental conservation, and the development of governance to gain positive experiences and welfare.

## The Role of Stakeholders in the Development of Sipitu-Pitu Ecotourism

Stakeholders are people, groups, or organizations that have an interest in, are active in, or are favorably or adversely impacted by an activity or development initiative (Sumarto, 2004). In this study, the researchers considered four distinct stakeholder groups: the government, the community (in this instance, the Tourism Awareness Group), non-governmental organizations, and tourists/visitors.

The government's participation in the development of Sipitu-Pitu ecotourism is crucial since the government is the primary agent of development. The government of Central Tapanuli Regency has developed Sipitu-Pitu as one of the most popular ecotourism and conservation-based tourist sites. The functions played in development are categorized into three categories: service, empowerment, and development. According to Rasyid (2004), the government must possess these three characteristics in order to fulfill its function as a key stakeholder: power, legitimacy, and urgency.

The second stakeholder is the community, which may serve as the primary focus of destination management. The development of ecotourism in Sipitu-Pitu may be seen in the development planning, development implementation, and development management processes. According to Jufrina (2009), these three factors are essential for the growth of a community, including the Sipitu-Pitu ecotourism area in Sait Kalangan II Village. The role of the community in the development of Sipitu-Pitu ecotourism includes a description of its support for innovative ideas, participation in the process of producing tourist design plans, and attitudes of participation in socializing activities. This is consistent with the findings of Ahmad Salman et al. (2021), who found strong stakeholder involvement in environmental protection and cultural preservation, economic activities, awareness, and empowerment.

Soetomo (2015) asserts that community activities in the process of developing an area must be supported with aid, which must be tailored to the institution's capabilities. The participation of the community in the Sipitu-Pitu Tourism Awareness Group involves the aid of other supportive stakeholders. Researchers observe that the aid offered by the government and the Ecosystem Lestari Foundation is able to attract activity in the form of facility development projects and tourism-related trips, although in modest numbers. This is consistent with the findings of H. Lelloltery et al. (2021), which indicate that each stakeholder performs a portion of its duty. Therefore, collaborative management is required.

The next stakeholder in the development domain is non-governmental organizations (NGOs). The Sustainable Ecosystem Foundation is the non-governmental organization present in the Tukka Sub-District. This foundation is crucial in terms of empowering communities with ecological knowledge, promoting tourism, and supporting government initiatives. The

establishment of the Sustainable Ecosystem Foundation, which is geared toward the development of recreational attractions that combine conservation education, unquestionably affords academics the opportunity to incorporate Sipitu-Pitu ecotourism into their study goals. In this instance, academics are comparable to visitors. According to Suhartono (2004), tourists are travelers who decide their own conduct when visiting outside of their own country to satisfy certain wants and desires.

The last stakeholders in this research are tourists, whose limited engagement in the Sipitu-Pitu ecotourism area has a favorable influence on its development. In addition to seeking to enjoy tourism services and assessing the viability of establishing ecotourism in Sipitu-Pitu, travelers may bring advantages as a topic of tourism promotion and may boost the local economy. According to a study by Novitaningtyas (2022), tourism attractions, service quality, and trust impact interest in visiting tourist regions. The findings of the research indicate that the quality of service and the confidence of visitors would influence the expansion of tourism. The tourist attraction must take into account the availability of amenities to meet the demands of visitors.

## CONCLUSION

The conclusions that can be drawn from this research are: ecotourism potential in Sipitu-Pitu is comprised of natural potential (the Sipitu-Pitu waterfall, landscape, humidity, flora, and fauna) and the presence of stakeholders. Sipitu-Pitu ecotourism has a spatial pattern consisting of seven types of land cover (secondary dryland forest, roads, open land, settlements, plantations, rice fields, and shrubs), five types of slopes (flat, gentle, slightly steep, steep, and very steep), an altitude of 600 meters above sea level, and a land area of 220,520,65 hectares. The stakeholder roles in the development of Sipitu-Pitu ecotourism in Sait Kalangan II are as follows:

- The role of the government (regional, sub-district, and village government), essentially the government, is to provide services, empowerment, and development in order to transform Sipitu-Pitu ecotourism into a tourism destination and a conservation-based education and knowledge space.
- The Tourism Awareness Group is actively involved in the planning, implementation, and management of the Sipitu-Pitu ecotourism area with the goal of protecting the environment and enhancing economic, social, and cultural aspects.
- The role of the Sustainable Ecosystem Foundation (NGO), as a private foundation active in the conservation sector, is to contribute to the empowerment, development, and management of the Sipitu-Pitu ecotourism area as an important object to be protected.

- The role of visitors or tourists as evaluators of the potential of developing Sipitu-Pitu ecotourism objects and facilities that may give tourism promotion and community economic development benefits.

## SUGGESTIONS

According to the findings of the study, there are still factors to be addressed in the development of the Sipitu-Pitu ecotourism area. In order to promote the growth of ecotourism in the Sipitu-Pitu area, researchers give constructive advice in the form of suggestions. The following are suggestions that researchers may consider:

In order to encourage the development of Sipitu-Pitu ecotourism and ensure the smooth operation of tourism activities, the Regency Government should continue to build roads that have not yet been completely repaired.

In order to assist the development of Sipitu-Pitu ecotourism for the preservation and promotion of tourism, the government must enhance the quality of Sait Kalangan II Village's human resources. Supporting the growth of zoned Sipitu-Pitu ecotourism requires a comprehensive strategy.

In order to assist the development of Sipitu-Pitu ecotourism for the viability of the destination, the government should strengthen its collaboration with the local community in terms of environmental protection.

Regarding improving the development of Sipitu-Pitu ecotourism, the community/Tourism Awareness Group believes it is preferable to increase the level of cleanliness, safety, and comfort in villages and ecotourism sites.

In light of this, we recommend that future studies focus on factors including ecotourism's attributes, community engagement, government policy, and the economic well-being of local communities.

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