

Study of Sustainable Tourism Development in Silokek Geopark, Sijunjung Regency, West Sumatra

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Abstract

Silokek Geopark is a National Geopark located in Sijunjung Regency, West Sumatra that comprises potential attractiveness for regional as well as national tourism sector. Tourism development in Silokek Geopark has been done since 2004 in order to improve local community economy and reduce environmental degradation. Tourism development has focused on obtaining the positive impact in economic dimension and tends to ignore the sustainability of environmental and socio-cultural dimensions so far. The aims of this research are to describe changes on tourism development in Geopark Silokek as National Geopark and to examine sustainability of tourism development in Geopark Silokek as tourism destination. The approach used in this research is qualitative. Data were collected through observation, interviews, and document study. Collected data were analyzed by qualitative-descriptive analysis method. The result of this research showed that tourism development in Silokek Geopark as National Geopark changed to be better. The condition of tourism at the period before Silokek Geopark was legitimized as a National Geopark was not optimal while at the period after it was approved as a National Geopark the quality is getting enhancement, both in terms of attraction, amenities, accessibility, and ancillary. Furthermore, sustainable tourism development has not been implemented integrally in the development of Silokek Geopark becoming a tourism destination. The tourism development in Silokek Geopark does not show the sustainability in environmental dimension, socio-cultural dimension, nor economic dimension.

Keywords: *Tourism, Geopark, Sustainable Tourism Development, Silokek Geopark*

A. INTRODUCTION

Tourism has played a crucial role in human life in the last three decades (Crouch & Ritchie, 1999; Nizar, 2015; Yakup, 2019).. Tourism drives the chain of human life in the economic, socio-cultural, and environmental dimensions. The contribution of tourism in the economic dimension is mainly to improve the level of the economy because it provides various types of economic income, such as: foreign exchange, taxes, and foreign investment (Spillane, 2001). (Spillane, 2001; Yoeti, 2008).. The contribution of tourism in the socio-cultural and environmental dimensions, such as: preserving culture, protecting nature, and improving the intellectual level of the community (I Gde Pitana, 2005). (Pitana, I Gde 2005; Sadarmayanti, 2005).. The values derived from tourism have high significance for improving the welfare of human life. Therefore, tourism is now one of the main pillars of national development.

Indonesia has a great opportunity to gain valuable values from tourism. One area with an abundance of tourism resources is a *Geopark* or Earth Park. *Geopark* is a single or combined geographic area that contains complex wealth, mainly geological aspects with specific characteristics (Junaedi et al., 2017; Patrick J. Mc Keever, 2005). (Patrick J. Mc Keever, 2005; Setyadi, 2012). Geological aspects in *geoparks* are closely related to the existence of a particular culture and biodiversity (Newsome et al., 2012). (Newsome et al., 2012; Stoffelen, 2019).. An area such as a *geopark* must receive a strategy for developing the area into a tourism destination that ensures economic benefits without damaging the sustainability of the natural environment and the socio-cultural order of local communities (Cárdenas et al., 2015). (Cárdenas et al., 2015; Fandeli, 2014; Sunaryo, 2013)..

The development of *geoparks* as tourism destinations by making the area to protect and preserve the wealth of geological, ecological, and cultural aspects and build the community's economy is a

significant opportunity for Indonesia. (Kusumahbrata, 2012). One of the potential National *Geoparks* to be developed as a tourism destination is Silokek *Geopark* in West Sumatra. Silokek *Geopark* holds tourism capital in the form of geological, biodiversity, and cultural aspects with good comparative and competitive values. (Fadhly & Hadiyansyah, 2020). The *basement* rock outcrops of Sumatra Island with an age of hundreds of millions of years, rare flora and fauna, and local wisdom that is still guided by the local community are evidence of the abundance of tourism resources owned by the Silokek *Geopark*.

Tourism development in Silokek *Geopark* is implemented in order to provide alternatives to meet the needs of life while suppressing the rate of exploitation of natural resources which has caused environmental degradation in the area. Tourism development in Silokek *Geopark* in the process has experienced ups and downs. Before being designated as a National *Geopark*, the amount of positive impacts obtained from tourism was not proportional to the negative impacts that were present (Amelia, 2016; Anugrah, 2017; Elpafitri, 2014). While after being designated as a National *Geopark* the magnitude of the positive impacts obtained from tourism increased significantly, especially in the economic dimension. (Kusuma, 2019; Rauf & Eriyanti, 2019).. The problem is that the environmental dimension needs to be considered because there is land encroachment into vulnerable areas due to tourism development in the area.

Tourism development in the Silokek *Geopark* area has not been able to provide maximum and equitable positive impacts, not limited to the economic dimension but also the environmental and socio-cultural dimensions. Silokek *Geopark* faces challenges that are not easy at all because of the threat of environmental degradation and at the same time must carry out obstacles in developing the area into tourism destinations. Tourism development in Silokek *Geopark*, which initially sought to reduce the rate of exploitation of natural resources, instead focused on efforts to improve economic levels and ignore the environment. Improper and unwise tourism planning and governance will cause the condition of Silokek *Geopark* to deteriorate.

Silokek *Geopark* requires a special approach in developing the area into a tourism destination. Tourism development in Silokek *Geopark* must pay attention to the sustainability of nature in order to create harmony between tourism and the environment. Sustainable tourism development is an approach that takes into account the impact of tourism development in the economic, socio-cultural, and environmental dimensions so as to optimize the management of tourism resources to improve economic levels without damaging nature and the socio-cultural order of the community. (Berno & Bricker, 2001). This means that the approach is ideal for the development of Silokek *Geopark* as a tourism destination.

Implementation of a sustainable tourism development approach in the development of an area into a tourism destination is successful if there are changes for the better in the economic, socio-cultural, and environmental dimensions (Yanuar et al., 2018; Sunarta and Arida, 2017; YYuliawatu et al., 2016).. Silokek *Geopark* should have implemented this approach in tourism development in the area since it was designated as a National *Geopark*. However, it seems that the principle of sustainable tourism development has not been implemented fully and thoroughly. Tourism development in Silokek *Geopark* instead of being able to overcome unresolved environmental problems has raised new environmental issues. Conservation and management of creative economic businesses, establishing cooperation to provide supporting facilities and infrastructure, optimizing government cooperation with several agencies to provide education about the benefits of mangroves to increase community participation. (Henri et al., 2023)

B. RESEARCH METHODS

This research is qualitative in order to obtain a contextual, accurate, and detailed understanding of the problems studied, namely related to the condition of tourism development in Silokek *Geopark* and the

implementation of a sustainable tourism development approach in the development of the area into a tourism destination.

Table 1 Research Variables

Indicator	Criteria
<i>Economically beneficial</i>	New job opportunities in the tourism sector
	Activity shifts to new jobs in the tourism sector
	Unemployment reduction
	Increased income
<i>Environmentally sound</i> (Environmentally sound)	Regional spatial planning
	Improved quality of natural landscape
	Biodiversity conservation
	<i>Green product</i> innovation
	Effective waste management
<i>Culturally strengthening</i> (Preserving culture)	Visual pollution prevention
	Cultural heritage conservation
	Utilization of cultural heritage as a tourist attraction
	Development of <i>knowledge based tourism</i>
<i>Community Based Management</i>	Involvement of local communities in all stages of tourism development
	Local community empowerment
	Active coordination with other stakeholders

Source: Gunn, 2002; Ritchie and Goeldner, 2010 Niedziółka, 2012; Fandeli, 2014

In table 1 regarding research variables, the research variables consist of indicators and criteria that can support the assessment of the development of the Silokek Geopark area into a tourism destination and justify the existence of sustainable principles applied in tourism development in the area. Data was collected through several methods, namely: a) structured observation which attempts to observe the object of research carefully; b) semi-structured interviews with a number of predetermined informants; and c) documentation studies by reviewing a set of documents in written and electronic form. The collected data will be analyzed using a qualitative-descriptive analysis method which consists of three stages: data reduction, presentation, and verification.

C. RESULTS AND DISCUSSION

1. Overview of Silokek Geopark

Silokek Geopark is one of the potential National Geoparks in West Sumatra. Silokek Geopark is administratively located in Sijunjung and Sumpur Kudus Districts, Sijunjung Regency which covers 20 nagari or villages in the two districts, namely: Unggan, Silantai, Sumpur Kudus, South Sumpur Kudus, Tanjung Labuah, Mangganti, Tamparugo, Tanjung Bonai Aur, Tanjung Bonai Aur South, Kumanis, Sisawah, Durian Gadang, Silokek, Muaro, Sijunjung, Pematang Panjang, Kandang Baru, Aie Angek, Paru, and Solok Ambah. Silokek Geopark is geographically located in the Bukit Barisan series with coordinates 0°18'43" LS - 0°44'59" LS and 100°47'55" East - 101°10'46" East. The area of Silokek Geopark is approximately 123,200 ha (Regional & Regency Research and Development Agency (BP3D) Sijunjung, 2019).

The Silokek Geopark area is divided into three clusters based on the different characteristics of each cluster, namely: Silokek, Sumpur Kudus, and Aie Angek-Paru (Sijunjung District Government, 2018). The Silokek cluster includes six villages, namely: Durian Gadang, Silokek, Muaro, Sijunjung, Kandang Baru, and Pematang Panjang. The Sumpur Kudus cluster includes eleven villages, namely: Unggan, Silantai, Sumpur Kudus, South Sumpur Kudus, Tanjung Labuah, Mangganti, Tamparugo, Tanjung Bonai Aur, South Tanjung Bonai Aur, Kumanis, Sisawah. The Aie Angek-Paru cluster includes three villages, namely: Paru, Aie Angek, and Solok Ambah. The main cluster for the development of the Silokek Geopark area as a tourism destination is the Silokek Cluster.

2. Description of the Aspects of Silokek Geopark and its Tourism Potential

Silokek *Geopark* has a great opportunity to utilize the abundance of resources that the area contains for the tourism sector. The valuable tourism capital in Silokek Geopark is the wealth of geological, biodiversity, and cultural aspects as well as strategic geographical location. Silokek *Geopark* offers many natural and cultural landscapes with extraordinary appeal and has good comparative and competitive value. Thus, the capacity of Silokek *Geopark* is not limited as a conservation area, but also has the potential to build the economy. Therefore, the development of Silokek *Geopark* is carried out through development as a tourism destination.

a. Geological Aspects

The Silokek *Geopark* area is the result of the collision of the Eurasian Plate which is composed of granite with the Indo-Australian Plate which is composed of basalt. The collision between the two plates resulted in the creation of deep troughs where metamorphic rocks, deep-sea rocks, and basic to ultra-basic rocks were deposited. Tectonic activity and geological processes cause the shape of the earth's face in the Silokek *Geopark* area to be diverse. The geomorphology of the area consists of plains to hills in limestone rocks, plains to hills in granite rocks, alluvial fans, and others (BP3D Sijunjung, 2019; LP2M UNP, 2021). The geological aspects of Silokek *Geopark* have passed through three eras in the Geological Time Span, namely: Paleozoic, Mesozoic, and Cenozoic; based on the arrangement of rocks in the area (Cohen, 2013; Regional & Regency Research and Development Agency (BP3D) Sijunjung, 2019).

The rich geological aspects of Silokek *Geopark* can be found in 31 geological sites which are spread across the three clusters. One of the representative geological aspects of Silokek *Geopark* is a variety of geology in the form of ancient rocks over 200 million years old at the Sangkiamo Granite geological site which is also a geological heritage. In addition, there are stretches of karst canyons with a height of 200-600 meters, undulating structures, and angular slopes of up to 70° along the Batang Kuantan River with stunning natural appearances. (BP3D Sijunjung, 2019; Muharram et al., 2020). The geological aspects of Silokek *Geopark* contain unique historical values and are rare and beautiful. The wealth of geological aspects has potential for the tourism sector where its utilization can be done through the development of geological sites as tourist attractions for adventure tourism, ecotourism, and educational tourism.

b. Biodiversity Aspects

Biodiversity in Silokek *Geopark* consists of various types of ecosystems, flora, and fauna that are key, distinctive, and rare (KPHL Model Sijunjung, 2013; Sijunjung District Government, 2018). The type of ecosystem that dominates the area is tropical rainforest characterized by a dense canopy and high rainfall. Other ecosystem types offer unique and beautiful natural landscapes, such as: floodplains; waterfalls; caves with stalactites and stalagmites to underground rivers; karst hills; and granite rock hills. The types of flora that can be found in Silokek *Geopark* are very diverse, ranging from the typical meranti-merantian plants of tropical rainforests to the rare Rakasasa Vulture Flower. The diversity of fauna inhabiting Silokek *Geopark* is quite high, ranging from endemic and rare animals such as tapirs and pangolins to key animals such as Sumatran tigers which are currently threatened with extinction.

The rich biodiversity aspects of Silokek *Geopark* can be found in seven biodiversity sites spread across the three clusters. The existing biodiversity sites are observation points for unique to rare flora and fauna (BP3D Sijunjung, 2019). For example, the Puncak Sangkiamo biodiversity site is a good place to observe fruit bats, monkeys, hornbills, and Giant Vulture Flowers. Biodiversity aspects in Silokek *Geopark* contain crucial values, one of which is nature tourism services for education and recreation. The richness of the existing biodiversity aspects has potential for the tourism sector where its utilization can be done through the development of biodiversity sites as tourist attractions for adventure tourism, ecotourism, and eco-tourism.

c. Cultural Aspects

Silokek *Geopark* has many *tangible* and *intangible* cultural entities that have historical value and are also distinctive (Sijunjung Regency Government, 2018). *Tangible* cultural entities found in Silokek *Geopark* are cultural heritage objects, such as: historical buildings, monuments, burial sites, and traditional villages. *Intangible* cultural forms of knowledge, skills, representations, and expressions typical of Minangkabau, such as: matrilineal system, rumah gadang, rendang, silat, randai, and many oral cultural heritages that contain noble values of local culture (Suherlan et al., 2022). The cultural aspects of Silokek *Geopark* are a reflection of the way of life developed by the ancestors and inherited from generation to generation. The combination of Minangkabau customs with Islamic religious values is the main foundation of the elements of the local community's life order which includes the belief system, kinship system, and livelihood system.

The rich cultural aspects of Silokek *Geopark* can be found in 18 cultural sites spread across the three clusters. One of the representative cultural aspects of Silokek *Geopark* is the Traditional Village of Nagari Sijunjung which still exists today in preserving the traditional way of life including the splendor of cultural heritage objects such as *Rumah Gadang*. The cultural aspects in Silokek *Geopark* contain the value of past life experiences that are historical, scientific, and aesthetic with distinctive local content. The wealth of cultural aspects is potential for the tourism sector where its utilization can be done through the development of cultural sites as tourist attractions for historical tourism, educational tourism, and religious tourism.

3. Conditions of Tourism Development in Silokek *Geopark* Before it was Designated as a National *Geopark*

The Silokek area has long faced environmental problems due to the exploitation of natural resources. Most local communities depend on natural products with the main livelihoods related to rubber and oil palm production and gold mining. Natural resources are extracted excessively and unsystematically under the pretext of meeting the needs of life and market demand for these commodities. Local communities engage in various illicit activities, such as illegal mining and forest encroachment in order to obtain the maximum natural products. Exploitation of natural resources continues relentlessly until the environment in the Silokek area experiences degradation and a decrease in natural functions, which is clearly a long-term danger not only for the environment but also for humans.

The dependence of local communities on natural resources has brought negative impacts that threaten the lives of many parties. Recognizing the precariousness of the situation, the Silokek area needs the presence of other sectors that are able to improve the lives of local people without destroying nature. Tourism is seen as an alternative that can provide economic income because it provides new jobs in the sector. A further implication is that livelihood diversification towards the tourism sector will change the pattern of local community work from destructive extraction activities to more conservative ones, thus reducing the rate of environmental degradation. The Silokek area began implementing tourism development in the area since 2004 and officially became a tourism destination with the name "Silokek Tourism Object" in 2007.

Tourism development in Silokek Tourism Objects focuses on ecotourism and adventure tourism as the main attractions. A number of tourist attractions that are the site of these tourist activities, among others: Ngalau Basurek, Ngalau Saribu, Ngalau Cigak, Batang Taye Waterfall, and Pasir Putih; which are located within Nagari Silokek. There are other tourist attractions located outside Nagari Silokek, one of which is Palukahan Waterfall which is located inside Nagari Durian Gadang. Tourist activities that can be done by tourists at Silokek Tourism Objects such as cave exploration, rock climbing, and rafting. In addition to natural attractions, the area offers man-made attractions, namely panoramic viewing towers. The beauty of the natural landscape typical of the Silokek area such as karst forests can be observed from the existing panoramic viewing tower.

Silokek Tourism Object has a number of facilities and infrastructure to provide comfort for tourists, such as public toilets and places of worship. Other facilities are food stalls and grocery stores built by local communities independently as a center of trade activities as well as to meet the needs of tourists. Accommodation for tourists who want to stay overnight is located about 15 km from Silokek

Tourism Object, namely in Nagari Muaro. Regarding the infrastructure that supports the smoothness of tourists in reaching Silokek Tourism Objects, several things were carried out by the Sijunjung Regency Government together with the local community, such as: the construction of a bridge along with improving the condition of the Muaro-Silokek highway and providing direction signs to existing attractions.

The main manager that regulates the Silokek Tourism Object tourism industry is the Sijunjung Regency Government. The manager of Silokek Tourism Object at the site level is the Community Self-Help Organization (LKM) of Nagari Silokek based on the mandate of the local government. LKM Nagari Silokek was formed in 2010 with members of the local community as many as a dozen people. LKM Nagari Silokek is the driving agent of a number of tourism development programs in Silokek Tourism Object, one of which is the National Program for Community Empowerment (PNPM) Mandiri Tourism which was intensified in 2010. LKM Nagari Silokek also offers services related to tourism activities, especially in the field of tourism services.

Tourism development in the Silokek area proves that the tourism sector can have a positive impact. Tourism provides new jobs where local people can work such as becoming tour guides. Tourism is an alternative in fulfilling the needs of life and increasing income although not much. Furthermore, the diversification of livelihoods towards the sector has caused local people's employment patterns to shift to other types of businesses such as tourism services, which is sufficient to reduce the rate of environmental degradation in the area.

A number of obstacles arise that cause tourism development in the Silokek area to run poorly, mainly related to local community participation. LKM Nagari Silokek as the implementing organization of Silokek Tourism Object governance is considered inactive in carrying out its performance, one of which can be seen from the failure of the implementation of PNPM Mandiri tourism. The partial participation of local communities is suspected to be due to low knowledge and interest related to tourism. Many local people think that income from the tourism sector is small compared to what can be obtained from other sectors, especially gold mining. Furthermore, tourist visits will only be busy during certain times. In the end, the local community's pessimistic assumptions towards tourism are getting stronger, leading to a loss of motivation to be involved in tourism development in the Silokek area.

Another obstacle that hinders optimization of tourism development in the Silokek area is the coordination between local communities and the government that is not actively and continuously established. The role of local government in the development of Silokek Tourism Object is minimal, as seen from the expansion and integration of Nagari Durian Gadang and Nagari Muaro as part of the Silokek Tourism Object area failed to be implemented; the budget allocated annually for the development of tourist attractions is small; the procurement of facilities and infrastructure for tourism activities that are not systematic and adequate; and the low supervision of the technical team on tourism development programs in the Silokek area.

The movement of the tourism sector in the Silokek area in a short period of time slowed down drastically. Local communities then do not see tourism as an alternative that can fulfill their needs. The decline in economic income from the tourism sector changed the pattern of work where local people returned to exploiting natural resources. The rate of environmental degradation has accelerated in addition to the natural products that are extracted excessively, there are also residues from tourism development that are not environmentally friendly. Tourism instead of creating negative impacts that complicate the sustainability of many entities in the Silokek area and even the tourism movement itself which eventually stalled. The transformation of the area into a tourism destination failed to achieve its goals, indicating that tourism development in the Silokek area was not implemented appropriately and wisely.

4. Conditions for Tourism Development in Silokek Geopark After being Designated as a National Geopark

Eligible areas within Sijunjung and Sumpur Kudus sub-districts, including the Silokek Tourism Object area were integrated into the *Aspiring Geopark* in early 2018 to be considered as a National Geopark (KGN). An area is designated as a National *Geopark* based on an assessment of three aspects,

namely: geological aspects which include geological heritage and geological diversity; environmental aspects which include biodiversity and landscape; and cultural aspects which include *tangible* and *intangible* cultural heritage. All aspects contained in the Pioneer *Geopark* area show a good level of value so that at the end of 2018 it was designated as a National *Geopark* under the name Silokek *Geopark*.

Silokek *Geopark* contains an abundance of tourism resources with distinctive, unique, and beautiful and even rare values that cannot be found elsewhere. Geological sites, biodiversity, and culture in the area have the potential to be used as tourism attractions that focus on the types of natural, cultural, and special interest tourism. Tourists can do various tourism activities such as ecotourism, adventure tourism, sports tourism, educational tourism, historical tourism, and religious tourism. Utilization of geological, biodiversity, and cultural aspects of the tourism sector is not only able to provide economic value but also disseminate knowledge that ultimately supports efforts to protect these aspects.

Some geological sites in the Silokek *Geopark* area, especially those in the Silokek Cluster, have become tourist attractions. Tourist activities that can be done by tourists range from exploring the forest to Palukahan Waterfall and Batang Taye Waterfall, rock climbing to Ngalau Saribu, caving in Ngalau Basurek, to rafting from Pasir Putih to Sangkiamo Granite. However, the wealth of geological aspects is not optimally utilized for the tourism sector because several potential geological sites have not been transformed into tourist attractions, such as: Bukik Kojai Waterfall, Ngalau Sipungguak, and Ngalau Sungai Landeh. Meanwhile, a number of other geological sites such as Sangkiamo Waterfall and Sisiak Ikan Waterfall are considered to have less attraction value so they do not receive development as tourism attractions.

Regarding the aspect of biodiversity, none of the flora and fauna observation points in the Silokek *Geopark* area are used as tourist attractions, including those in the Silokek Cluster. Even though Silokek *Geopark* has potential biodiversity sites with endemic, unique, beautiful, and rare values of flora, fauna, and habitat. The main problem faced by Silokek *Geopark* in utilizing its biodiversity sites for the tourism sector is that information related to the existence of flora and fauna that inhabit ecosystems in the area is very limited. This situation is because Silokek *Geopark* has not yet carefully structured biodiversity, which causes the development of biodiversity sites as tourist attractions cannot be carried out optimally.

Some cultural sites in the Silokek *Geopark* area, especially those in the Silokek Cluster, have become tourist attractions. One of the cultural sites that has successfully become an object of tourist attraction is the cultural heritage object, namely the Traditional Village of Nagari Sijunjung, which is widely known as the center of cultural tourism in West Sumatra. However, the utilization of other cultural heritage objects in the Silokek *Geopark* area for the tourism sector is not well implemented. Most of the cultural sites that become tourist attractions are in poor condition, such as the Tomb of Willem Hendrik de Greve and the abandoned Muaro Station; and the Japanese Steam Locomotive, Batu Godang, and Surau Calau are not maintained. Furthermore, the development of tourist attractions has not optimally utilized *intangible* cultural heritage even though Silokek *Geopark* is rich in this type of cultural heritage, one of which is local knowledge and skills such as traditional gold panning which has potential for the tourism sector.

Man-made attractions are held against Silokek *Geopark* in order to perfect the natural attractions and cultural attractions found in the area. The development of man-made attractions is carried out by focusing on the Silokek Cluster. The most famous man-made attraction in the area is the *Rest area* in Nagari Silokek. The *rest area* is an integrated area for a number of man-made attractions, including: *boardwalk* or a kind of low bridge with a length of about 500 meters, panoramic view tower, art stage, and *camping-ground*. In addition, there is the Bundo Kandung monument in Nagari Sijunjung. The monument represents the typical kinship system of the Minangkabau ethnic community which adheres to the flow of descent from the mother's line or matrilineal. The Bundo Kandung monument is a reminder that Minangkabau culture must be preserved.

Silokek *Geopark* has a number of facilities and infrastructure to provide a sense of comfort and security to tourists. The Sijunjung Regency Government is increasing the development of amenities in addition to essential facilities such as prayer rooms and public toilets, including: *Geopark Information Center* (GIC) Silokek or Silokek *Geopark* Information Center, security posts, and souvenir stands. Regarding public toilets and prayer rooms, not all tourist attractions have them but the provision of these two facilities is more excellent than in the period before the Silokek *Geopark* area was designated as a National *Geopark*. Likewise with security posts and warning signs where only a few attractions have

them. Amenity development has not been maximized considering that tourism development is generally carried out on sensitive sites.

The existence of accommodation, food stalls and grocery stores in the Silokek *Geopark* area is now easier to find. Places to stay other than hotels and guesthouses in Nagari Muaro are local community dwellings designated as *homestays*. The Traditional Village of Nagari Sijunjung is a *homestay* center where around 40 units of *gadang houses* have become *homestays*. Other accommodation is a *camping ground* that can be found at the *rest area* and Pasir Putih. The *camping ground* is equipped with adequate facilities, such as toilets and bathrooms as well as electrical installations and even internet networks and is not located far from the center of trade activities. Regarding food stalls and grocery stores, these two types of facilities are more numerous than in the period before the Silokek *Geopark* area was designated as a National *Geopark*.

The acceleration of infrastructure development in the Silokek *Geopark* area is better than before the area was designated as a National *Geopark*. The Sijunjung Regency Government has improved the quality of roads connecting villages. Roads from the central area of Sijunjung Regency to two villages with famous tourist attractions in Silokek *Geopark*, namely Nagari Silokek and Sijunjung, are in adequate condition. The movement of local people and tourists to reach these two locations is smooth whether using motorized vehicles, cycling, or walking. However, the condition of the road to some tourist attractions requires improvement, especially those in Nagari Durian Gadang.

Other crucial components supporting accessibility for tourists and local communities are also present in the development of tourism in Silokek *Geopark*, including: public transportation modes, signposts, and parking areas. The Sijunjung Regency Government presents tourist buses as a mode of public transportation that can be accessed by tourists. The local government also organizes signposts to tourist attractions in the Silokek *Geopark* area, especially those in the Silokek Cluster. However, most of the attractions in Nagari Durian Gadang do not have signposts. Local people utilize the land as a parking area independently to avoid traffic congestion and the possibility of vehicle theft. Some tourist attractions in the Silokek Cluster already have a proper vehicle parking area. However, the vehicle parking area at most of the tourist attractions in Nagari Durian Gadang is in makeshift condition or even non-existent.

Silokek *Geopark* is managed by an institution called the Silokek *Geopark* Management Agency (BP). BP *Geopark Silokek* was formed by the Sijunjung Regency Government with the aim of realizing the management of the development of the Silokek *Geopark* area in a responsible, effective, and capable manner. BP *Geopark Silokek* is composed of the local government as the policy maker; local communities who are members of the Tourism Awareness Group (Pokdarwis) as operational implementers related to maintaining tourist attractions and offering services related to tourist activities available to tourists; and the private sector, academics, and mass media as other stakeholders. 26 Pokdarwis have been formed to manage the entire Silokek *Geopark* area with 12 Pokdarwis for the Silokek Cluster, two Pokdarwis for the Aie Angek-Paru Cluster, and 12 Pokdarwis for the Sumpur Kudus Cluster. The Silokek Cluster itself has six Pokdarwis that are actively working while the other six are inactive.

The institutions that now manage the Silokek *Geopark* play a better role than they did before the area was designated as a National *Geopark*. BP *Geopark Silokek* has tried to increase tourist interest and make tourism an industrial sector that provides permanent employment. BP *Geopark Silokek* organizes crucial things in the development of the Silokek *Geopark* area into a tourism destination, including: tour packages; a list of the latest tourism attractions that can be seen on information boards and brochures; and a calendar of tourist activities throughout the year such as the Geofest Silokek event. However, there are still shortcomings in the performance of the Silokek *Geopark* BP, such as: tour packages are limited to attractions in Nagari Silokek and Sijunjung, the list of tourism attractions is not very accessible, and there is no health insurance.

5. Changes in Tourism Development in Silokek *Geopark* as a National *Geopark*

Tourism development in the Silokek *Geopark* area when compared before and after the area was designated as a National *Geopark* showed better changes. The development of the Silokek *Geopark* area

into a tourism destination focuses its attention on the development of geotourism and the creative economy. Stimulation of economic activity in the tourism sector through the development of geotourism and creative economy has a significant positive impact on local communities, namely increasing income and reducing unemployment.

The geotourism development scheme in Silokek *Geopark* is implemented by utilizing the wealth of geological aspects in the area for adventure tourism, ecotourism, and educational tourism. In addition to being able to meet the demand for the type of tourism that tourists are interested in today, geotourism also provides economic benefits for local communities and a medium for enrichment of insight. However, the development of geotourism in Silokek *Geopark* has not been optimized because aspects of biodiversity and culture should be empowered together with geological aspects in an integral way. Geotourism development in the area is oriented towards the utilization of geological diversity and geological heritage with aesthetic value alone so that the utilization of the wealth of other aspects is not maximized. The absence of biodiversity sites limits the development of tourist attractions so that geotourism cannot embrace aspects of biodiversity. While the cultural aspects that have been utilized for tourism activities in geotourism are still fixated on *tangible* cultural heritage.

The creative economy development scheme in Silokek *Geopark* is implemented mainly through two strategies, namely the use of local products as tourism commodities and *green product* innovation. Both strategies for creative economic development in Silokek *Geopark* encourage local communities to explore ideas from the wealth of existing resources. Local communities are finally able to produce a variety of potential tourism commodities provided as souvenirs typical of Silokek *Geopark*, such as *eco-print* products that are environmentally friendly, woven fabrics with Sijunjung Regency identity motifs, and others. The creative economy as an alternative new business field in the area can meet the demand for the types of tourism that tourists are interested in today and also provide economic income for local communities.

Tourism development in Silokek *Geopark* as a National *Geopark* is not flawless. The Silokek cluster itself, which is the main cluster for the development of the Silokek *Geopark* area into a tourism destination, experiences imbalances in terms of attractions, amenities, accessibility, and institutions. The tourist attractions offered have not utilized cultural aspects and biodiversity integrally; incomplete amenity development such as health units that are important for the safety and security of tourists for their participation in adventure tourism activities; accessibility development has not been maximized such as alternative routes because the Silokek *Geopark* area is prone to disasters; and the performance of the Silokek *Geopark* BP is not optimal as seen from annual events such as Geofest Silokek not being held consistently.

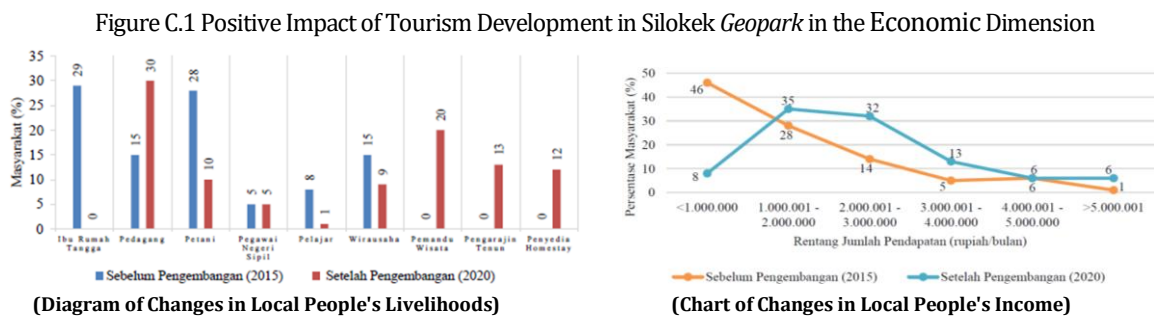
Tourism development in Silokek *Geopark* has not been implemented fairly and equitably. Improving the quality of tourism elements is pursued only towards Nagari Silokek and Nagari Sijunjung. The balance of development distribution has not been present in all villages in the Silokek Cluster. As a result, the tourism sector in Nagari Durian Gadang and Muaro is sluggish; Nagari Kandang Baru experienced stagnation until the tourism governance of the area was dismissed; even Nagari Pematang Panjang has not carried out tourism development at all even though a Pokdarwis has been formed. The four villages are an integral part of Nagari Silokek and Sijunjung so that tourism development should be carried out fairly and evenly to avoid negative impacts that can arise, one of which is the gap between communities.

6. Sustainability of Tourism Development in Silokek *Geopark*

a. Economic Dimension

The development of the Silokek *Geopark* area, which is carried out through development as a tourism destination, has opened up new and more diverse employment opportunities, one of which is a business in the creative economy. Local people innovate to make creative products typical of Silokek *Geopark*. Businesses in the field of tourism services have also experienced development where quite a lot of local people rent out their *homes* as *homestays* for tourists and the stretch of guiding tourism activities has also increased. Local communities obtain sufficient economic income by selling tourist needs, creating souvenirs, providing places to stay, and guiding tourist activities to tourist attractions. Furthermore, the shift of local people's work activities towards the tourism sector reduces unemployment, especially for

women. Quite a number of women who were previously housewives now work as traders, craftsmen, and *homestay* providers.



Source: Processed from Jufri, 2021

Tourism has now become a promising alternative for local communities to fulfill their needs. However, the positive impact of the tourism sector in the economic dimension has not been sustainable. Things that indicate tourism development in Silokek *Geopark* is not based on an understanding of economic sustainability, one of which is related to the empowerment of local communities that focus on geotourism activities. Although the contribution of geotourism is quite significant to the local economy, efforts in order to stimulate economic activity in businesses in the creative economy should receive more careful attention given its great potential. Empowerment of local communities in the business sector is needed so that the viability of business units owned by local communities, especially those that are micro and small scale, is maintained.

Another shortcoming of the development of the Silokek *Geopark* area into a tourism destination that does not demonstrate the principle of sustainability in the economic dimension is related to strategies to achieve solid and fair economic conditions for the long term for local communities. The development plan for the Silokek *Geopark* area to become a tourism destination does not contain governance that is formulated in such a way as to avoid economic leakage from the tourism sector and the seasonal nature of tourist visits to the area. Furthermore, there is no single institution that provides services to assist and supervise local community-owned business units in Silokek *Geopark* in order to ensure the economic sustainability of the tourism sector in the area, such as Village-Owned Enterprises (BUMDes).

b. Socio-cultural dimension

Tourism development in Silokek *Geopark* is implemented on a community-based basis where local communities are the main actors in the development of the area. Local communities establish partnerships with other *stakeholders*, namely: local and central government, private sector, mass media, and academics. Silokek *Geopark* can be said to have a complete tourism governance forum. Cooperation between local communities and other *stakeholders* is actively taking place although until now it has been limited to the development of tourism in Nagari Silokek and Nagari Sijunjung. Community empowerment of the tourism sector in the area focuses on efforts to increase the capacity of local communities who take part in the development of geotourism. The community is empowered to become superior human resources in the

service business through a number of efforts, one of which is training on security and safety issues during adventure tourism activities.

Increasing human resource capacity through community empowerment should not be limited to adventure tourism alone because geotourism also utilizes other aspects, one of which is cultural heritage. For example, Nagari Sijunjung carries cultural-based tourism attractions where the tourism sector is quite advanced even though it still requires comprehensive and continuous community empowerment to optimize the benefits while conserving the existing cultural heritage. Local communities in Nagari Sijunjung have so far only been empowered to be able to maximize their hospitality in entertaining tourists who rent their homes, while community empowerment to explore the value of local wisdom that can be commodified into tourism products is fairly low.

Empowerment of local communities in creative economic development is even more minimal compared to geotourism. Local community-owned business units that produce creative products typical of Silokek *Geopark* have not been optimally empowered so that their viability is not strong and difficult to compete in a wider market. For example, creative economy product innovations such as *eco-printed* clothing do not really show the distinctive characteristics of Silokek *Geopark* that distinguish the work of local people from the same type of products from other places. Meanwhile, creative economy products that have reflected the distinctive identity of Silokek *Geopark* such as Songket Lansek Manih must still be intensified through proper community empowerment in order to build the confidence and perseverance of local communities considering that the unit producing the product is still micro-scale.

The shortcomings of community-based tourism development in Silokek *Geopark* are related to the involvement of local communities in all stages of developing the area into a tourism destination. The Sijunjung Regency Government is authorized in the planning, supervision, and evaluation stages; while the role of local communities is only in carrying out the management and utilization stages. Local communities do not get sufficient opportunities to participate, causing problems. For example, local communities in Nagari Muaro were not included in decision-making to determine the direction of the Silokek Cluster tourism development policy. As a result, local people in the nagari feel that their interests are not represented and have implications for participation in the tourism sector which is partial because local people are reluctant to be active.

The participation of local communities in the tourism sector to date is still oriented towards obtaining maximum economic income. In the development of geotourism, *intangible* cultural heritage such as *Bakaua Adat* is packaged into tourism products and contributes to the development of geotourism in the Silokek *Geopark* area. However, the awareness of local communities to preserve their cultural heritage has not yet emerged as evidenced by the absence of a kind of cultural studio that can be formed independently. Furthermore, local communities also do not realize that a strong and fair long-term economy through creative economic development in the tourism sector rests on their independence. Local communities have not understood the relationship between one dimension and the other as a whole so that the utilization of existing resources does not reflect the development of sustainable community-based tourism.

c. Environmental Dimension

The development of tourism in Silokek *Geopark* after it was designated as a National *Geopark* did not necessarily make the area problem-free. Although the diversification of local people's livelihoods towards the tourism sector is suspected to reduce the rate of exploitation of natural resources, the development of the area into a tourism destination has created new environmental problems. For example, the increasing activities of local communities in the tourism sector have resulted in an escalation of the need for land area for tourism activities. Local communities carry out *land clearing* unsystematically and illegally to meet these needs. Actions such as illegal logging occur to vulnerable areas which ultimately threaten the environmental sustainability of the Silokek *Geopark* area.

One of the vulnerable areas in Silokek *Geopark* that needs careful attention is the protected forest which includes geological protected areas. The increase in tourism activity is directly proportional to the need for land area to meet the needs of tourists for adequate facilities and infrastructure, such as: stalls, photo spots, campgrounds, and others. Local communities conduct *land clearing* to build infrastructure without regard to land suitability. Expansion of land use occurs to touch karst areas, seen in a number of geological sites that are now tourist attractions, such as: Ngalau Basurek, Ngalau Saribu, and Pasir Putih. Deforestation of protected forests due to indiscriminate land conversion has finally caused the condition of the Silokek *Geopark* area to become critical and hazardous.

The shortcomings of tourism development in Silokek *Geopark* so that it does not show sustainable principles in the environmental dimension are mainly related to land use boundaries **which** have not been clearly defined. Mapping land types based on their use to differentiate areas according to their function, such as: Geological Reserve Area (KCAG), Karst Landscape Area (KBAK), areas for tourism activities, and others. The arrangement of the area will then be categorized into three types of zoning, namely: total protection zone, limited protection zone, and cultivation zone. Although Silokek *Geopark* is currently a National *Geopark*, the development of the area into a tourism destination is still not based on an environmentally sound understanding. The Silokek cluster itself as the main cluster in the tourism development of the Silokek *Geopark* area is only divided into core and *hinterland* zones (cultivation zones), and even then without clear boundaries.

Land use boundaries are useful for emphasizing the scope of areas that can be utilized as tourist attractions and areas that should receive protection. The lack of clarity in the spatial layout of the Silokek *Geopark* area has led to confusion over land use. For example, Ngalau Basurek is within the scope of a protected forest area but was later used as a tourist attraction. The geological site should have been protected, but because the land status of the area was not confirmed, development was carried out without regard to the precautionary principle. As a result, Ngalau Basurek suffered significant damage and visual pollution. The unclear boundaries of land use in the Silokek *Geopark* area have led to the utilization of areas that should not be touched and the use of land in accordance with its function is difficult to control.

Figure C.2 Negative Impacts of Tourism Development in Silokek *Geopark* in the Environmental Dimension



(Land Clearing at Rest Area)



(Visual pollution at Ngalau Basurek)

Source: Documentation from observation in July, 2022

D. CONCLUSIONS

Tourism development in the Silokek *Geopark* area when compared before and after the area was designated as a National *Geopark* showed better changes. Attractions, amenities, accessibility, and institutions have improved in quality although there is still room to optimize each of these elements. While

related to the implementation of a sustainable tourism development approach in Silokek *Geopark*, the sustainability of the area's development into a tourism destination gives good and bad impressions. The tourism development carried out has shown sustainable principles in the economic, socio-cultural and environmental dimensions although there is still room to optimize the sustainability of each of these dimensions. However, there is no significant relationship between dimensions such as economic sustainability is quite good but does not have implications for achieving environmental sustainability from tourism development.

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