

**The Sustainable Development of Natural Tourism Area Based on Ecological-Humanism:
A Case Study of Ngabatata Waterfall, Nagekeo Regency, East Nusa Tenggara, Indonesia.**

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Abstract

Ngabatata Waterfall is a natural waterfall with a beautiful environment located in East Nusa Tenggara (NTT), Indonesia which has attracted the attention of some local and several foreign tourists. This has made the local government, local leaders, and local youth organizations design and optimizes the waterfall as one of the tourism destinations in NTT. Some problems were, however, observed in the development process and the most urgent ones are related to the topography and difficulty in accessing the area with several tourists travelling for almost 2 hours in very extreme topography conditions to reach the location. Therefore, the local government initiated some development and management strategies to make the trip easier and more comfortable for tourists and this was discovered in the design of a waterfall-based on sustainable development using the ecology-humanity concept by researchers and experts. The study was conducted using qualitative method and this involved obtaining in-depth insights into the location's problems to propose the appropriate planning strategy to develop Ngabatata as one of the favourite tourist destinations in the country. It also focused on understanding the beliefs, experiences, attitudes, behaviours, and interactions of the people and tourists as well as the collection and analysis of non-numerical data such as texts, videos, and audios to understand their real condition, opinions, and proposed design strategy. The findings are expected to be useful in the formulation of some strategic plans and designs for the Ngabatata waterfall.

Keywords: *Ngabatata waterfall, Ecology-humanity concept, Development strategy*

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Introduction

Tourism development is one of the most important factors required to improve the economic condition of local people (Mihalic, 2014). Local people can improve their welfare by preserving their local wisdom (Wijaya, Zulkarnain, & Sopingi, 2016), because each region must have a place that has the potential to be a tourist spot if people are aware of the areas they live in (Sari, Hilmy, Hendro, & Iswanto, 2020). Not only the local community, local government support is also needed (Sari, Kurniati, & Hilmy, 2019) so that tourist attractions in the area can be formed optimally. However, local governments in some provinces have not been able to utilize these tourist attraction centres (Widaningrum & Damanik, 2018). This is observed in Nagekeo Regency located in Mbay of East Nusa Tenggara (NTT), Indonesia covering an area of 1,416.96 square km with several tourist destinations such as the Ngabatata waterfall (see figure 1).



Figure 1. View from and to Ngabatata waterfall
Source: field survey, 2020

It is a natural waterfall with scenic beauty, a beautiful lake, and an uncultivated environment with several plantations growing in the hilly area. Moreover, some villages with traditional architecture and local traditions are close to this waterfall and these also provide the area with tourism potentials to attract both local and foreign tourists. These potentials are suitable to be developed into ecotourism (Aja & Arido, 2020). The developer has not touched the area because not many people know the existence of the waterfall. Now the area is under development with the concept of ecological-humanism. With this concept, researchers want to see the resulting design will meet the principles of sustainable development in the area or not because sustainable development is the development that meets current needs without sacrificing the needs of future generations (Brundtland, 1987).

In developing tourism at Ngabatata Waterfall, the problems currently being faced include extreme topography condition and poor access due to its far location from the settlements and hilly terrain, thereby, causing difficulty in getting transportation to the waterfall location (see figure 2). This consequently influences the tourists' motivation to visit because people's behavior can influence various motivations and run in a complex manner (Pitana & Gayatri, 2005). Therefore, most of them, especially the elderly and children, tend to be unsatisfied with the road situation. Meanwhile, the millennial group frequently visits the waterfall due to their preference for challenging situations. The millennial generation tends to travel in unique, new, authentic, and personal ways in their search for the meaning of tourism (Parhusip & Arida, 2018). Seeing the community's motivation, tourism development in Ngabatata waterfall certainly needs to be considered more seriously so that its development can accommodate all generations but cannot be separated from the principle of sustainable development.



Figure 2. Extreme topography and poor access
Source: field survey, 2020

Some of the required factors needed to improve its attractiveness for more comprehensive tourists include the comfort, safety, and easy access to the waterfall location. The local government has already assisted in terms of access while some other developmental efforts have also been implemented by the

local people but mostly the planning is improper and observed to be very limited. It is also experienced by several other tourist destinations, making these tourist destinations unsustainable. One of these tourist destinations is Sulamandaha Beach in North Sulawesi (Fabanyo & Sastrawan, 2020). The beach has experienced a decrease in tourist visits due to cleanliness, safety, and orderliness in the coastal environment. As for the Sipiso-piso Waterfall in North Sumatra (Sitanggang & Sugiarti, 2020) where stakeholders do not work well with the local community, so the management of these tourist destinations does not run optimally. Besides, the Dream Island in Bali (Hutagalung & Sugiarti, 2020) has never decreased tourist visits. However, its managers are still making efforts to keep tourist visits high by strengthening tourism management (planning, organizing, actuating, and controlling) as well as the 4A concept (attraction, amenities, accessibility, and ancillary).

Some of these case studies show that each area has one natural potential that can be used as a tourist spot. However, to make it crowded with visitors, the efforts must also be maximized, including environmental management, management, stakeholder support, and community participation. By optimizing these efforts, of course, it can maintain high levels of tourist visits. That way, the sustainability of these tourist destinations can last for generations to come. Looking at the case studies in Nagekeo Regency, the researcher wants to know what efforts can be made to increase tourist visits in the area, especially at Ngabatata Waterfall. Therefore, this research was conducted to propose some waterfall design concepts such as tourism support facilities based on ecology-humanity for the local government to use in the design process.

Materials and Methods

A qualitative method was used in this study to obtain in-depth insights into the problems and potency associated with the location of Nagekeo Regency. This method is considered appropriate to explore and understand an individual's or groups' meaning ascribed to a social or human problem (Creswell, 2013). This area was chosen as a case study because there are tourism development plans in the area by several developers and supported by the local government. Previously, Nagekeo Regency was an unorganized area, had no roads/access, and was covered by wild plants. However, the locals explore the area and discover the beauty of the Ngabatata waterfall. As technology develops, people find this place through social media. Likewise, tourism developers see this as an opportunity. It makes researchers want to analyze whether the area has the potential for what makes developers interested in the area. Knowing the problems and potentials that exist there, researchers want to know the sustainability efforts that can be implemented in the area even though the area has been built in a tourist area.

The urgency of selecting the case study reflects several tourism developments in Indonesia that have not experienced sustainability or have stalled in the middle of the road. It occurs due to several factors. One of which is that the tourism manager cannot find optimal efforts so that their tourist destinations can survive. Besides, the community's readiness in tourism development is often not taken into account (Aja & Arido, 2020), so that it has an impact on the tourist destinations that it manages. Several tourist destinations in Indonesia that experience this include Sulamandaha Beach in North Maluku (Fabanyo & Sastrawan, 2020), Sipiso-piso Waterfall in North Sumatra (Sitanggang & Sugiarti, 2020), and Dream Island in Bali (Hutagalung & Sugiarti, 2020). Several attempts have been made to maintain these tourist destinations, one of which is innovating attractive tourist areas for tourists. Based on these phenomena, the researcher wants to see the sustainability and sustainability of the Ngabatata Waterfall tourist destination, implementing the Ecological-Humanism design concept.

The research process is carried out by observing physical conditions in the field to find out the problems and potentials that exist there, as well as interviews and discussions with residents and stakeholders who will carry out tourism development there. Besides, literature studies are also conducted to find design concepts that do not interfere with an area's sustainability. The concept that is the focus of researchers is ecology humanism. Ecology humanism is two different fields of science but has continuity to be applied to a design because the two fields of science aim to humanize humans in an environment but not detrimental to the surrounding environment. Based on the data that has been collected, the researcher will analyze the potential that can be used as a tourist area by applying the concept of ecology humanism design. This research result is a design of the Ngabatata waterfall tourism area based on ecology humanism that does not disturb the environment and sustainability of Nagekeo Regency. The following is the structure of study in carrying out this research.

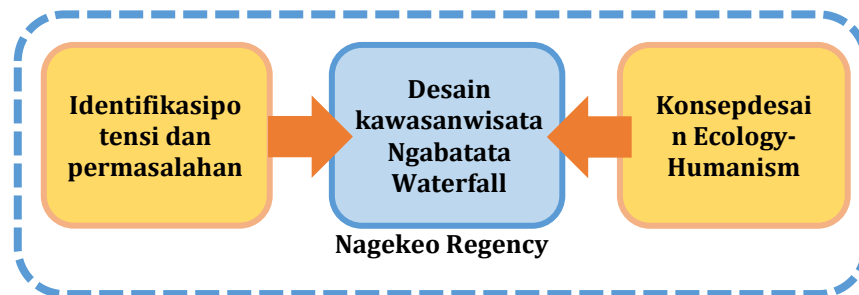


Figure 3.structure of study
Source: developed by author, 2020

Results and Discussion

Ngabatata Waterfall is one of the areas with tourism potentials in Nagekeo Regency and deserves to be a leading natural tourist destination in the country due to the presence of several beauties attracting intending tourists. It is located in RenduButowe Village, South Aesesa District, Nagekeo Regency and the natural beauty of the environment makes visitors feel at home and comfortable because the atmosphere is very relaxed, quiet, and calm. Moreover, visitors can swim, enjoy the fresh air from the native mountain forest apart from the satisfaction from the environment, and also take pictures with the clear waterfall and surrounding green and beautiful nature as the background. The waterfall is currently proposed by the local government to become one of the favourite tourism destinations and this means it needs to be developed to become more beautiful and attractive. Several efforts have been made by the local government to visualize this program and one of these is to design a virgin waterfall area since there no development has been implemented in the area except the limited access in some part even though some domestic and foreign tourists currently visit the waterfall. The beautiful and amazing charm possesses by the waterfall always make the local tourists prefer it as a recreation place on weekends. They are also attracted to see its scenic beauty and enjoy the surrounding environment but an extra struggle is required to reach the area due to the relatively far distance as observed in the approximately 20 km required by vehicle from Mbay, the capital of Nagekeo Regency, to Rendu, the capital of South Aesesa District after which the visitors have to trek through the savanna and cliffs along the 4 km on the way to RenduButowe Village where the waterfall is located.

The findings of this study are expected to be used in planning concept design strategies for the Ngabatata waterfall to humanize all the tourists, preserve the sustainability of the environment, and local people's locality. Meanwhile, the ecological-humanism concept was found to be appropriate for the development of the Ngabatata Waterfall area due to its location in a forest close to a traditional village. Ecology is the study of interactions of organisms and their environments (Plutynski, 2009) while humanity is a phrase from the word humanism which means the principle of unconditional equality of concern for all people's dignity and well-being without depending on their natural characteristics as well as social, cultural, and religious backgrounds (Ellis, 2011)(Hall, 1991). This, therefore, means ecology-humanity is the relationship between humans and their environments(Knapp, 2017) which has been observed to be fundamentally an ethical contradiction because humans place themselves as superior to nature and consider it an object of exploitation(Fios & Arivia, 2018). This ecological crisis caused by human limbs in thinking, behaving, and acting shows the need for a new humanism called ecological humanism which seeks to define humanity and its involvement in the crisis (Skolimowski, 1981). Therefore, the most suitable method to plan and design the Ngabatata waterfall is the ecological-humanism concept due to its ability to conserve energy and preserve the ecological balance of the area and its surroundings and also to make a better life founded on humanity.

The nine ecopolis-humanism parameters presented in Figure 4 were recommended as a tool to analyse the conservation strategy which focuses on two concepts of ecopolis and humanis. The term 'ecopolis' means the conservation of energy and natural resources by preserving ecological balance which is a significant consideration in urban development (Downton, 2009). The parameters are, however, usually used as a tool to analyse the quality of the environment but were used in this study as supporting information to design the waterfall area.

- 1) **Equality** parameter means the methods of creating a tourism destination to ensure a facility provides equality for all and this is usually in the form of the supporting building shape, architectural design, and other facilities which are designed to accommodate the needs of all users in the waterfall area without any discrimination.
- 2) **Enforcement** means designing the waterfall area with special concern for the rules guiding all users to make sure everything is running as expected
- 3) **Enjoyment** focuses on creating facilities with the ability to provide entertainment for all tourists
- 4) **Environment** involves ensuring the design considers the preservation of the natural landscape of the area with the supporting facilities constructed using the eco-friendly concept to minimize environmental exploitation.
- 5) **Employment** aspect shows concern for the accommodation of community's participation in tourism activities to make them beneficiaries in terms of economic welfare
- 6) **Energy-saving** focuses on conserving limited natural resources in the area which should have been used to energize the power plants due to the fact that less demand for energy in the supporting facilities creates less need for fossil fuels. Therefore, most of the buildings in the tourism destinations are required to be designed to use lesser electricity or going off the power grid to use solar energy which provides benefits to the environment, conserves resources, and saves lives.
- 7) **Aesthetic** aspect is the core design principle which defines the attractive qualities such as the balance, colour, movement, pattern, scale, shape, and visual weight. In Ngabatata waterfall, all the supporting tourism buildings are required to use aesthetics to complement the designs' usability and enhance functionality with attractive layouts.
- 8) **Engagement** is a good concept which involves including communities in the tourism activities and this means the expertise and unique tradition of Ngabatata people in terms of developing traditional housing can be required in the design to ensure the use of local materials and exhibit local tradition work in the building development.
- 9) **Ethical** aspect requires the architect designing the tourism destination to always apply professionalism, integrity, and excellence towards presenting the best work to the service users and society and also enriching the environment and cultural treasures.

This means the concern of the researchers should be on the ethical code in every design of the waterfall area. **Ecological Principals** used to design the waterfall are recommended to be based on the following factors (Syarapuddin, Santosa, & Haripradiano, 2016).

- 1) Locality which involves using local elements in architectural design,
- 2) Designing with nature by using natural elements in architecture,
- 3) Minimizing energy use to preserve energy in creating tourism supporting buildings,
- 4) Harmonizing the relationship between culture and nature
- 5) Preserving the environment

The mixing concepts implemented in designing the development strategies for Ngabatata Waterfall as a tourism destination are, however, presented in Figure 4.

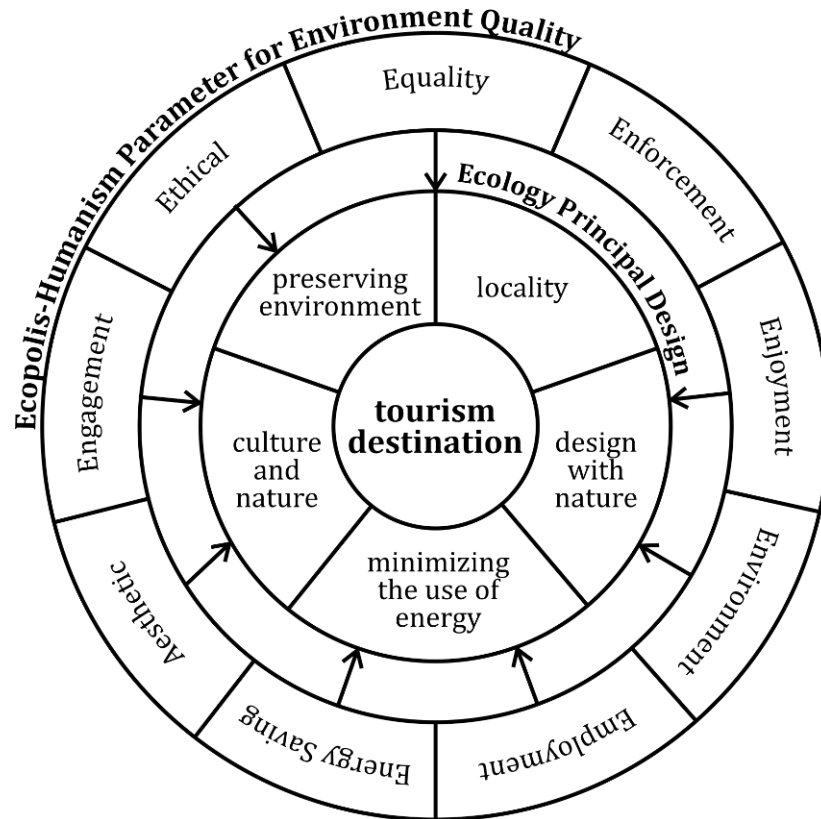


Figure 4. Developing tourism destination with nine ecopolis-humanism parameters
Source: developed by the author, 2020

The proposed design concepts and strategies based on the ecological principle which humanizes all users in the waterfall area are presented in the following figures.



Figure 5. The design of the facilities for the Ngabatata Waterfall area with the humanizing ecological principle
Source: Designed by author, 2020

Efforts were made in this design concept to preserve the natural resources as a tourist attraction by involving the local people in the process. This is due to the fact that there is a need to consider the users of tourism areas, mainly the tourists and local people, to ensure the development of a good plan. Meanwhile, the tourism activity to be designed for the waterfall area is expected to be adventurous tourism with consideration for the topographical conditions and distance to be covered to reach the place due to the rugged terrain. In terms of locality, the architecture of the supporting buildings was designed with the concept of vernacular architecture which is in harmony with the local nature and

culture as required by the ecological-humanism principles. The building design using this concept focuses on the respects for nature in the building form, structure, use of local materials, natural building utility system, and suitability to the local climate. This means the vernacular architecture indirectly uses an ecological approach and also emphasizes on society's traditions and socio-cultures in the measurement of comfort (Anselm, 2006).

The architecture of the traditional housing in Kampung Kawa also has the ability to inspire the supporting buildings to be designed for the waterfall area as shown in Figure 6. Kampung Kawa is a very traditional village with the residents upholding the local customs and geographically located in the western part of Labolewa Village which is approximately 10 Km from Labolewa Village and 15 Km from Mbay City, the capital of Nagekeo Regency. Furthermore, it is necessary to develop more attractions and supporting facilities such as a restaurant, souvenir shop, public toilet, communal building, homestay, and viewing post to increase the number of tourist visits. There is also the need to rearrange the parking space to become more appropriate as observed in the fact that most of the tourists usually park their vehicles in areas around the residents' homes and this shows a particular parking area with rest facilities such as restaurants, resting outlets before going to the waterfall, and an art shop is necessary for the waterfall area.



Figure 6. The design inspired by traditional housing architecture in Kampung Kawa
Source: analyzed by author, 2020

In terms of accessibility, the Ngabatata waterfall area needs more adequate access and the local government of RenduButowe has currently assembled ropes to make it easier for tourists to descend the cliffs to the waterfall. One resident, however, reported that the government has not paid attention to providing the appropriate access to the tourist destination with the riders usually required to be extra careful while on the badly damaged road. Moreover, the access to the waterfall is complicated with the visitors required to pass through ravines and steep roads and a nylon rope prepared by local residents is usually used to descend to the waterfall location. The road is always also very slippery during the rainy season. Several ravines observed in the terrain led to the circulation design concept which follows the topography of the area and has one main road which functions as the entrance. The site is also surrounded by dense and lush forest and this is the reason the road circulation is designed in one direction to make sure the tourists are focused and safe to follow the area's path. Moreover, the pathways are arranged with vegetation and guard posts to ensure more comfortability of the tourists.



Figure 7. Existing road access to Ngabatata Waterfall
Source: analyzed by author, 2020

In addition to the design concept that is good for humans and the environment, several other aspects also need to be considered so that the tourist area's sustainability can be maintained. Some of these aspects include.

- 1) Management of tourist areas (Terry & Rue, 2014) is carried out by carrying out four management functions, namely planning (planning a budget, vision and mission, and regional development), organizing (forming an organizational structure), actuating (leadership, mobilizing and implementing, and controlling (supervise the implementation of tourism area development).
- 2) Environmental preservation (Sari, Kurniati, & Hilmy, 2019) is carried out by practicing the seven principles of *saptapesona* (seven charms): safe, orderly, clean, cool, beautiful, friendly, and memorable (Rahim, 2012). These seven principles have profound meanings. By applying these seven principles, it will certainly make tourists feel comfortable traveling in a tourist area.
- 3) Support from stakeholders (Widaningrum & Damanik, 2018) is essential for smooth tourism development. Stakeholders must build a high commitment, cooperate with managers, create a clear framework, and comply with existing regulations cooperatively to achieve the same sustainable development goal.
- 4) Community participation (Sitanggang & Sugiarti, 2020) is also needed because local people are the closest parties and occupy the tourist area. By taking part in making decisions and managing tourist areas, the community will also get results and improve the quality of their areas.

If these four aspects are appropriately implemented, the sustainability of the Ngabatata Waterfall Area will be maintained. At least it will maintain the existence of Ngabatata Waterfall. It is conducted to decrease more tourist areas being stopped in the middle of the time due to poor tourism management, dirty environment, and no support from stakeholders and the community. Therefore, these four aspects must be strengthened in order to minimize the negative impacts that may occur.

Conclusions

This research shows the ecological-humanism concept is the most suitable concept to plan and design the Ngabatata waterfall, Nagekeo, East Nusa Tenggara in order to design support tourism buildings and facilities with the ability to sustain and conserve energy and also preserve the ecological balance of the waterfall with the surrounding area. Moreover, the nine parameters used include equality, enforcement, enjoyment, environment, employment, energy, aesthetic, engagement, and ethics and the development of the area was found to be concerned with making the lives of the tourists and local people better based on the concept of humanity. However, this concept is not necessarily applicable to other tourist destinations. It all depends on the problems and potential of the region. Besides, efforts to maintain sustainability are also significant, so even though a tourist destination has an attractive design concept for tourists, if management, environmental preservation, stakeholder support, and community participation do not go well, the tourist destination will not last long. Therefore, a tourist destination needs to pay attention to many aspects other than just dwelling on the design concept.

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Conflicts of Interest

The authors declare this article is original and there is no conflict of interest regarding the publication of this paper.

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