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Conservation of Gili Iyang, the Island with the Best Oxygen: An Ecophilosophical Perspective

Zulfah[1,4*], Margareta Rahayuningsih[2], Aditya Marianti[3], Muhammad Alfan Sidik[4]

[1] Science Education Doctoral Program, Faculty of Mathematics and Natural Sciences Universitas Negeri Semarang, Indonesia 50229

[2]Biology Program, Faculty of Mathematics and Natural Sciences, Universitas Negeri Semarang, Indonesia 50229

[3]Biology Education Program, Faculty of Mathematics and Natural Sciences, Universitas Negeri Semarang, Indonesia 50229

[4]STAIN Sultan Abdurrahman, Indonesia 29151

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*Corresponding author:
Zulfah
Universitas Negeri Semarang
E-mail: zulfahzuu@gmail.com

Abstract

Gili Iyang Island is located in Sumenep Regency, Madura, Indonesia, and is renowned for having some of the best oxygen quality, with an average oxygen level of 20.9%. However, a study conducted in 2022 indicated a slight decline in oxygen levels, which were found to be 20.3%. As a tourist destination within Sumenep Regency, the island attracts visitors interested in oxygen tourism. The aim of this study is to see the conservation efforts on Gili Iyang Island from an ecophilosophical perspective. A qualitative approach was employed, utilizing data triangulation methods that included interviews, observations, and documentation, supported by a review of relevant literature. The findings revealed that the Gili Iyang community has effectively preserved the island's natural environment. There have been no reported incidents of illegal logging or pollution that could significantly reduce oxygen levels. The island's outskirts are home to many flourishing trees, and the use of motorized vehicles by the local residents remains within reasonable limits. Additionally, the overall cleanliness of the island is well maintained. Despite these positive outcomes, it is essential to continue promoting an ecophilosophical approach to nature conservation and to educate the surrounding community about responsible environmental behavior.

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INTRODUCTION

Sumenep Regency, East Java is a district that has many islands. There are around 126 islands in the district, with 48 islands being inhabited. One of the islands in Sumenep has the best oxygen capacity. The island is Gili Iyang, a small island among a group of islands to the east of Madura Island. Quoting from the page Indonesia.go.id (Setiawan, 2021), Gili Iyang is the best place to feel the fresh air in Indonesia. This is because the oxygen level in this area reaches 20.9 percent, which exceeds the average oxygen level in other areas. It is not surprising that this island, which is located in the eastern part of Sumenep, is also nicknamed Oxygen Island. The decision to make Gili Iyang a tourist attraction with the best oxygen level is not without reason. This started with a study conducted by the Lembaga Penerbangan dan Antariksa Nasional (LAPAN) in 2006 regarding the air quality on the island. Lapan noted that of the 17 points tested, the average oxygen level of Gili Iyang was 20.9 percent.

In short, 1 liter of free air contains 0.209 liters of oxygen. This percentage is considered better than the air conditions in other areas in Indonesia. The normal oxygen levels tolerated to meet respiratory needs are within the range of 19.5-22.0 percent. Oxygen levels of less than 19.5 percent can cause oxygen deficiency, which is called hypoxia. From these figures, it can be said that the air quality at the Gili Iyang tourist attraction means it is very clean. The clean air in Gili Iyang is also based on the minimal content of air pollutants such as carbon monoxide, nitrogen oxide, or sulfur dioxide.

Striving for healthy air is supported by at least four principles (Cragg et al., 2016):

1. Actions to improve lung health.
2. Promotes and protects children's lung health
3. Healthcare workers can implement an intervention, they must see it as clinically important and have confidence in using it.
4. Primary healthcare involvement is critical in addressing the current and future burden of non-communicable diseases, including chronic respiratory diseases.

The current ecological crisis cannot be successfully addressed simply by stating that we must change how we value nature. The success of African eco-philosophy depends on the political will of countries and the incorporation of the approach into development plans. The importance of the African eco-philosophy of 'connectedness to nature' in guiding policymakers' perceptions is an important consideration. Policymakers must consider forestry implications in designing and implementing policies for related sectors so that the policies and actions of these sectors do not hurt forests (Okpoko, 2022). Reuniting with nature is the most important thing for eco-style, for bionics, for the comfortable life of a modern man living in a high-speed world in the era of the dawn of nanotechnology, therefore he repeatedly turns to nature for advice (Karamova et al., 2019). Through this approach, it is important to emphasize the involvement of practitioners and philosophers in bringing concepts from ecology and environmental science into applied fields, namely counseling and consultation, which can also become a practice for society (Hategan, 2021).

Becoming a 'leader for creative coexistence between nature and humanity' is not an easy task, it requires not only the right type and level of education or commitment 'both in school and non-school settings to build a healthy environment. a more just, peaceful, and sustainable world (Heffron, 2022). Exposure to a clearly ecocentric environmental philosophy—which we have come to regard as a true ecophilosophy—has allowed us to derive some special aspects, categories, and features for the transition to a truly ecological and ecocentric concept of Environmental Education (EE) (Molina-Motos, 2019).

Criticism of the belief in the Balance of Nature is often overlooked in analyzes of environmental education (Haydock & Srivastava, 2019). Humans have changed global ecological patterns so much that their impacts will be visible in environmental records for generations to come (Shanmugapriya & Christopher, 2023). The concept of community hygiene in Kampung Naga revolves around the empirical human aspect and concerns the spiritual side of life. All forms of activities, technology, and even beliefs (through norms

and prohibitions) continue to be echoed today to strengthen belief in the concept of cleanliness (Swaradesy, 2020). Nasr put forward religious spirituality through which humans can feel their problems and be convinced by themselves to respond to nature very simply. Nasr tries to show a traditional understanding of nature as a supporter of environmental sustainability. He emphasized how traditional science and religious spirituality, combined with sacred sciences, have in the past worked towards environmental sustainability; and using these examples, for the sake of long-term solutions to ecological problems, Nasr has suggested a paradigm shift from a modern scientific worldview to a worldview based on spirituality towards nature (Sayem, 2019).

The carbon dioxide content of Gili Iyang is no more than 26.5 percent with a noise level of only 36.5 decibels. According to the 'Study of the Potential of Oxygen Health Tourism on Gili Iyang' by Sumaryati (2006) , it is stated that another factor that causes the air quality of Gili Iyang to be very good is the air that comes from the sea. The air may contain a lot of salt aerosols, especially magnesium sulfate known as Epsom salt. Epsom salt is beneficial for skin health and freshness. Apart from that, it is also useful for treating pre-eclampsia and eclampsia experienced by pregnant women. There is a recent study (Megantoro et al., 2024) regarding the analysis of the distribution of oxygen concentrations in Gili Iyang, the results of the research state that oxygen levels in Gili Iyang range from 19.2% to 20.9% with an average of 20.3%. This average value is different from the LAPAN research which was conducted 15 years previously. What happened over the last 15 years? In Gili Iyang Island itself, a diesel power plant was installed in 2017 and there has been an increase in the use of motorized vehicles. How do the people of Gili Iyang and the local government care for nature as a form of conservation for Gili Iyang Island, which is famous for its oxygen island? The research wants to study in depth through an ecophilosophical perspective.

METHOD

This research was conducted using a qualitative approach using data collection techniques through interviews, observation (field surveys) and documentation and supported by literature studies. Interviews were conducted with Gili Iyang residents, tourists, tourism actors, village leaders, and environmental services. Field survey activities were conducted to discover the real conditions at the research location, photographing the oxygen points tested by LAPAN and how residents' conservation of Gili I Island are carried out from an eco-philosophical perspective. Analysis of various factors that support oxygen conservation from an ecophilosophical perspective on Gili Iyang is described using exploratory descriptive analysis.

RESULT AND DISCUSSION

Gili Iyang is one of the small islands belonging to Sumenep district. Gili Iyang Island consists of two villages, namely Banraas and Bancamara villages. Outside Banraas village is around 4.0 Ha while Bancama is 5.15 Ha. Administratively, Gili Iyang Island is in the Dungkek sub-district. Among other villages, Banraas and Bancamara villages are islands in Dungkek District. The height of the area above sea level for Bancamara is 32.75 m and 37.0 m for Banraas. The majority of Gili Iyang people work as farmers and fishermen (Badan Pusat Statistik, 2023).

Table 1. Number of Population and Households by Village

No	Village	Pollution	Family
1	Bancamara	4.393	1.542
2	Banraas	3.332	1.448
	Amount	**7.725**	**2990**

To get to Gili Iyang Island, two modes of transportation that must be used, namely land and sea transportation. Land transportation is used when we go to Dungkek Harbor. The distance from Sumenep city sub-district to Dungkek Harbor is around 41 km or takes 1 hour 15 minutes. Meanwhile, sea transportation in the form of a ship with a capacity of 30 people with around 7 motorbikes will sail from Dungkek Harbor to Gili Iyang Harbor with a travel time of 45 minutes. The ship will dock at the Bancamara village pier. When visiting Gili Iyang Island,

the air temperature in Sumenep district was around 320C, but walking along Gili Iyang Island felt cool, because Gili Iyang itself was filled with various trees.

Figure 1. Gili Iyang, oxygen island

At Gili Iyang Harbor itself, there is no public transportation. If tourists want to go around enjoying Gili Iyang, they can order in advance from the community which provides transportation such as VIAR motorbikes and 20 ontel bicycles. Providing 20-minute ontel bicycles is a form of community concern for maintaining the air in Gili Iyang. If there are too many motorized vehicles, it is feared that it will cause air pollution in Gili Iyang. So far there has been assistance in the form of golf carts and electric bicycles. It is hoped that this golf car can reduce the use of petrol vehicles in Gili Iyang, thereby creating an always beautiful environment. Likewise, the procurement of electric motorbikes is also to reduce air pollution and create a more comfortable and calm Gili Iyang environment. However, because this assistance has only been given to one village, the wider community has not yet used it. Tourists certainly need the presence of a vehicle. Still, the form of the vehicle must be considered in a vehicle that does not cause air pollution and can be given to both villages at the same time which can ultimately be managed jointly by residents. Based on BPS of Sumenep district (2021) there are several Motorized Land Transport in the two villages of Gili Iyang, Bancamara, and Banraas. Complete motor vehicle data can be seen in the following table.

Table 2. Number of Motorized Land Transport Facilities by Village and Type 2018-2020

No	Village	2018			2019			2020		
		Pick up	Three-wheeled motorbike	motorcycle	Pick up	Three-wheeled motorbike	motorcycle	Pick up	Three-wheeled motorbike	motorcycle
1	Bancamara	3	7	152	3	5	145	3	9	148
2	Banraas	7	6	78	7	4	65	7	6	69
	Amount	10	13	230	10	9	210	10	15	217
	Amount		**253**			**229**			**242**	

Table 2 above shows the use of land transportation used by the community on Gili Iyang. From the Table it can be seen that the number of motor vehicle uses is fluctuating. If we look at Table 1 and Table 2 for 2020, we will find that there are 242 motorized vehicles in the two villages and the number of households is 2990. According to interviews, the current number of motorized vehicles is not much different from 2020. If we make a ratio between the two tables, namely 1:12, this means that every 12 households in Gili Iyang have 1 motor vehicle. This number is quite small compared to the number of households or residents present. The small number of motorized vehicles proves that the people of Gili Iyang care about the environment. Motorized vehicles, especially those that use fossil fuels, contribute to air pollution, noise pollution, and the use of non-renewable natural resources. Reducing the number of motorized vehicles by using public transportation, cycling or walking can help reduce this negative environmental impact. Switching to environmentally friendly vehicles such as electric bicycles or electric bicycles is also a positive step to protect nature.

According to tourism actors, the Gili Iyang tourist destination's sustainability must be conceptualized carefully to become an island with healthy tourism. For example, there is a special hospital in Gili Iyang where doctors are present on a rotating basis who can help with health tourism. So far there have been auxiliary health centers but there has not been much involvement with tourists or floating hospitals carried out by student service but their presence can only be expected once a year. One of the programs that are hoped for is

the existence of a therapy villa that provides oxygen meditation, and seawater therapy which has a high salt content. This direction of thinking leads to making Gili Iyang a health tourism destination, not just enjoying natural beauty such as beaches or caves.

Why is Gili Iyang Island called the Island of Youth, according to records with an age classification of 80-100 years there are 120 people and 52 people aged 100-130 people. These elderly residents still have normal hearing and vision like young people. So this island is also known as the island of youth. Local people believe that their health is influenced by good oxygen in their village.

Figure 2. One resident who is 130 years old

Many trees growing on Gili Iyang, one of the attention is the Lontar Trees which grow a lot on this island. The tree then produces brown sugar and becomes a culinary specialty of the Gili Iyang people, such as the Pokak drink. Regarding culinary delights made from the island's natural raw materials, there needs to be a party that can facilitate the production and promotion of culinary delights by the Gili Iyang community. So far, if tourists want to buy typical Gili Iyang souvenirs, they must order them first from the local people who make them. Souvenirs are an element that is no less important in attracting tourists to visit Gili Iyang.

Figure 3. Lontar trees that grow a lot on Gili Iyang

Gili Iyang Island is filled with various trees so the atmosphere feels very cool even when the sun is hot during the day. The community itself is quite good at protecting the trees in Gili Iyang nature. According to the environmental service, so far there have been no complaints from residents regarding the illegal cutting of trees, the people of Gili Iyang are quite good at preserving trees. As an oxygen producer, it is not surprising that almost the entire Gili Iyang area feels cool because trees grow almost throughout the Gili Iyang island area. Apart from that, the island is surrounded by beaches which also enable good oxygen production. The sea air that surrounds this island may carry aerosolized salt to the two villages. Aerosol salts can play a role in the oxygen cycle process in the atmosphere. This process occurs through photosynthesis carried out by phytoplankton in the sea. Phytoplankton are microscopic organisms that live in sea waters and carry out photosynthesis, converting carbon dioxide (CO_2) and water into oxygen and carbohydrates. One thing that needs to be conveyed to visitors in particular is that research conducted by LAPAN in 2006 was that 17 oxygen points were tested for oxygen levels, not the perception widely circulated in the community that these 17 points were sources of oxygen on Gili Iyang.

At various tourist attractions, Gili Iyang looks clean from rubbish, a sign that visitors are keeping it clean. Likewise on village roads.

Some communities manage waste to make fertilizer. Some destroy waste by burning it. So far, burning rubbish has become a threat to the oxygen levels in Gili Iyang's air. Gili Iyang needs good and comprehensive waste management, especially in dealing with natural waste such as fallen leaves, so that it is not done by burning. One thing that can be presented is a waste shredding machine which is owned by several places on this island. Meanwhile, the Environmental Service facilitates waste containers that are separated by type so that waste such as plastic bottles can be recycled or taken to mainland Sumenep to be sold or recycled. However, there is no monitoring and evaluation in this program so it cannot be ascertained whether the community has recycled waste. Gili Iyang's waste consists of natural waste and human activity waste. Until now, the waste problem has not found a solution.

Figure 4. Trash bins provided by the environmental service

Nature Conservation in Gili Iyang Island from the Perspective of Ecophilosophical Education.

Nature Conservation on Gili Iyang Island is very well managed by the local community, so that from the explanation above it can be seen, cosmological elements such as soil, water, air, and fire which can be interpreted as climate show a harmonious relationship between humans and nature (Lazuardi et al., 2022). This condition cannot be separated from the existence of community views on ecophilosophy originating from community leaders, which are obtained through the process of education and community understanding (Rizal & Alting, 2023).

Community leaders on Gili Island have a strong enough contribution regarding the importance of protecting the environment. This is a relevant and urgent discourse in the context of current global environmental challenges. Figures such as religious leaders, environmental scientists, or activists have an important platform to convey this message to the community. On the island of Gili Iyang itself, there are village leaders who are also religious leaders in the village and play a major role in Gili Iyang's natural tourism. In several recitation and lecture opportunities, these religious leaders also insert spiritual values and nature conservation on Gili Iyang Island. Fachruddin M. Mangunjaya views religion and the institutions within it have an important role in ecological conservation efforts. This role can be in the form of exploring the relationship between spirituality and religious wisdom by linking it to human existence and function in the world (Siburian et al., 2021).

The value of spirituality and religious wisdom in the Gili Iyang Island community in managing nature conservation also arises from religious values taught by religious leaders there and plays a role in shaping the community's value system for nature conservation on Gili Iyang Island. The value system then crystallized into the community's ecophilosophy. This view comes from the values of spirituality in religion, which views that nature is part of God's creation (*tajalli*) which is entrusted to humans to be guarded and preserved. Seyyed Hossein Nasr's view of Scientia Sacra is that science is something sacred, as is the sacredness of religion, science in the sense of natural science, it is both a manifestation of God that is inseparable from the values of spirituality. Nasr views it as kauniah verses, which are equivalent to verses from the Qur'an. In contrast to science developed in the West, which since the modern era has been separated from the values of religious spirituality, resulting in over exploitation of nature. This is the importance of the ecophilosophical view that can be taken from the Scientia sacra thought of Seyyed Hossein Nasr (Nasr, 2003).

The people of Gili Iyang Island in maintaining nature conservation are also inseparable from their local culture and lifestyle. Local communities on Gili Iyang Island are starting to realize the importance of maintaining the use of fuel for cooking, and generators for lighting, and land transportation, so as not to cause emissions (Musleh et al., 2023). Their local cultural wisdom holds the view that nature is part of their lives that also needs to be preserved together, just as the Scienta sacra view that nature also has sacredness (Masykur et al., 2023).

In addition to religious leaders, the involvement of universities and academics in the knowledge diffusion process such as research from Yuliati (Yuliaty et al., 2021) shows that the interaction between stakeholders can be realized through government collaboration, and other stakeholders and the role of academics. Other environmental figures such as scientists, or environmental activists (POKDARWIS 'Andang Taruna' and GENPI 'Sumenep Regency') are also key in shaping the ecophilosophical views of the Gili Iyan Island community as an 'oxygen island'. As Ian Barbour's view explains there is an interrelationship between science and religion in a relationship pattern that can be united, independent means that religion and science are not interrelated or the third is a dichotomy or opposite between science and religion (Barbour, 2003). Looking at the phenomenon in the community on Gili Iyan Island, the pattern of the relationship between science and religion is integrated into nature conservation management. Education from both scientists and religionists is integrated in the management of nature conservation.

CONCLUSION

The eco-philosophy of preserving nature by the people of Gili Iyang can be said to be quite good. In general, people are aware of the cleanliness of the island. Even so, waste management needs to be considered to continue to maintain this beautiful and oxygen-rich island. Apart from that, the preservation of trees and the use of motorized vehicles by the Gili Iyang community is also quite good with relatively few users. Gili Iyang nature conservation requires the role of every party, including local communities, tourists, tourism managers, local government, and academics. Looking at the community on Gili Iyan Island, the pattern of religion and science is integrated into nature conservation management.

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