



Maritime Cosmology as a Framework for Sustainable Economic Governance: A Study of the Masela Island Community, Southwest Maluku

Helmina Kastanya^{1,2} , Sudibyo Sudibyo¹
Sastri Sunarti² Sofwan Noerwidi²

¹ Gadjah Mada University, Yogyakarta, Indonesia

² National Research and Innovation Agency, Jakarta, Indonesia
helm005@brin.go.id

Abstract. This study examines how the worldview of the people of Masila Island in southwest Maluku has led them towards a sustainable economy. TEK's previous research on sustainable economic systems focused on conservation systems in agricultural and forestry communities. Several studies focus on marine cosmology as the ontological basis of sustainable economic systems in small island communities. This study seeks to fill this gap by examining marine cosmology as an important example of social resilience. Qualitative ethnographic methods were used in this research. Operates on Masila Island, southwest of Maluku. From August to December 2023, data was collected through in-depth interviews with 12 main participants, including traditional leaders, fishermen and women who utilize coastal resources. Thematic analysis was used to explore the data by participating in ritual observation and document analysis. Research examining cosmological patterns, environmental laws, and economic significance reveals that the Marcella people used a system of cultural containment by sea and land. Each system performs an ecological function and is based on traditional principles. The isabi system controls the use of natural resources through prohibitions that are valid for a limited period of time. This helps natural regeneration and also ensures the livelihood of local communities. Based on these findings, Kamal and Trang's performance prioritizes environmental ethics and shared responsibility. I propose a Cosmological Policy for Island Stability (CPFIS) that includes a cosmological definition. The management and study of cultural ecosystems is consciously placed within a cosmologically based sustainable development strategy. This concept will be an important input in the process of developing water economic policy in Indonesia. This will help strengthen implementation of Sustainable Development Goals 8, 13 and 14.

Keywords: Sustainable Economy, Local Wisdom, Marine Cosmology, Sasi, Ecological Conservation, Masela Island.

1 Introduction

Worldwide, sustainable economic development has been prioritized by the United Nations under the 17 sustainable development goals (SDGs). Where the 8th goal contains the goal of inclusive and sustainable economic growth as well as increased productivity and decent work for all [1]. Indeed, sustainable development is conceptualized to be based on three dimensions or pillars: economic growth, social development, and environmental protection [2].

Within this framework, the Indonesian government places this program in its Medium-Term Development Plan (RPJMN) and regards it as one of the priority targets in the area of sustainable economic development. The government mainstreams sustainable development goals into cross-sectoral policies through programs targeting poverty alleviation, food security, the quality of education, and ecosystem conservation both on land and at sea [3]. Under the partnership of the Government of Indonesia and the United Nations Development Programme (UNDP), a program on natural resources-based sustainable transformation of the economy with community participation was recently launched in support of Indonesia Emas 2045 [1].

The Japanese government has demonstrated several best practices through the Satoyama Initiative, showcasing harmonious interactions between humans and nature. This talk approach is based on integrating conservation and development activities within the nexus of agriculture, forestry, and fisheries to achieve sustainable socio-ecological landscapes' products [4]. Similarly, other examples come from the Philippines and Nepal, where a community-based forest management program (Community Forestry) has allowed people to prohibit certain forest uses that have contributed to their economic welfare [5]. In Indonesia, a similar model has also been implemented through the social forestry program, where the government grants community management rights to forests as a form of environmentally friendly local economy.

Various studies also show that traditional ecological knowledge (TEK) plays a crucial role in maintaining socio-ecological resilience and supporting a sustainable economy. According to Barkes, Colding, and Floke (2000), TEK functions as an adaptive system that enables local communities to maintain ecological and social balance through customary rules, rituals, and natural resource management practices passed down through generations. Similar studies show that traditional knowledge has high relevance in modern natural resource management, as it provides conservation principles based on long-term ecological experience [6].

In the humanities, the concept of sustainable economics is not only understood within a macroeconomic framework, but also as an expression of the relationship between humans and nature that is regulated through culture, values, and ecological symbolism. Local wisdom or traditional knowledge is an important instrument in maintaining the ecological and economic sustainability of traditional communities. Before the emergence of modern approaches to sustainable development, traditional communities had long developed natural management systems based on local wisdom to maintain food security, social stability, and ecological balance.

Examples of traditional knowledge practices supporting sustainable economies can be found around the world. In Japan, the Satoyama community regulates forest and

agricultural land management based on seasonal rotations and social norms [4]. In West Africa, the Yoruba and Akan communities do customary rules governing the harvesting of forest products based on a spiritual calendar to maintain natural productivity [2]. In Indonesia, the subak practice in Bali serves as a model for agricultural water management that harmoniously integrates religious, social, and ecological dimensions [6]. Furthermore, communities in eastern Indonesia, such as Maluku and Papua, do *sasi*, which serves as a temporary prohibition mechanism on the use of marine and terrestrial resources to maintain natural balance and support local economic resilience [2].

In Southwest Maluku, the traditional knowledge of the Masela Island community serves as a concrete example of how cosmological systems and customs play a role in maintaining economic and environmental sustainability. The Masela Island community has a system of marine and forest zoning regulated by a cosmological view of the sacredness of nature. The *sasi* system is implemented as a prohibition on taking natural resources during a certain period, which aims to maintain resource productivity and support the economic sustainability of the community. In addition, the division of marine and land zones based on cosmological principles confirms that traditional People in these communities cared about the environment long before modern ch This shows that using local knowledge can be a good way to take care of natural resources and help the economy in the long run. Most earlier studies have mostly looked at how farming or forest communities in Indonesia take care of their But not many studies have looked at how sea beliefs and stories passed down by word of mouth affect how small island communities, especially in Eastern Indonesia, run their ecoang es came along. land. no- mies in a way that lasts.

Thus, this study aims to reveal a natural resource management model for a sustainable economy in the Masela Island community, Southwest Maluku, Indonesia. This research is expected to provide a conceptual contribution to the development of a culture-based conservation model that is not only relevant to the local community but also adaptable to sustainable development policies in other regions in Indonesia. Therefore, this study addresses a big research gap by analyzing the *marine cosmological worldview* of the Masela Island community as a foundation for a sustainable economic model. It aims to provide an empirical and conceptual contribution to the integration of local wisdom into Indonesia's sustainable development and blue economy policies.

2 Literature Review

Traditional ecological knowledge (TEK) has long been practiced in many Indonesian communities as a foundation for environmental conservation and sustainable economic development. As'ad et al. (2021) identified the success of a local conservation model in Lubuk Beringin Village, Jambi, where the community integrated Seloko Adat using traditional Islamic values in village rules to help take care of forests and rivers [7]. Taking care of community forests and no-fishing areas shows how local rules and government laws can work together to protect nature and help people in the area make a living.

Norini (Dusun 20 Bandarong, Malang) integrates environmental protection and energy by combining agroforestry technology and biogas from livestock waste [8]. These examples show that conservation efforts in an area are considered fair if community members are involved and the regulations are fair [9]. We also saw Bedouins in Bantan. It is called the "Land of a Thousand Laws" because it has many traditions and stories that teach people to take better care of nature.

Law No. 5/1990 about protecting natural resources in Indonesia says that getting people involved is a key part of taking care of the environment. Local wisdom helps guide people to protect nature and supports the country's efforts to save Daoist ecology in China [10]; sacred forest conservation through ritual prohibitions in India [11]; the Maasai rotational grazing system in East Africa [12]; indigenous wetland protection in Canada [2]; and forest payment schemes linked to traditional verification systems in Mexico [13, 14].

In the Maluku region, Lielyar Papr, Wakra Meke and Yorwoy also carry out environmental and educational functions [15-17]. Transmitting social ethics and environmental values from one generation to another. This oral history often uses regional languages. The language of ancient ancestors reflected ideas about the world and nature. A well-known local way of protecting the environment and other people is discussed. The benefits of sea water on the ecology and local economy of small islands are also examined [18]. Asbi are rules that limit people from using land and sea resources during certain periods of the year [19]. The loss of native languages in the southwestern region of Maluku will threaten people's interest in culture and nature [20].

Liveraceae and starlings play an important role in maintaining ecological balance and social harmony. A study of Tyarka, the traditional songs of the Babar Island, shows how the songs share ideas about the relationship and interconnectedness between humans and nature [21].

Incorporating local history and traditions into existing conservation programs is an opportunity for natural and cultural management on Indonesia's remote islands. Especially Mesilla, where people see the world and nature up close.

3 Methodology

This study uses a qualitative ethnographic approach to explore the cosmological, cultural, and ecological dimensions of environmental management in the Masela Island community, Southwest Maluku, Indonesia. Fieldwork was conducted over five months, from August to December 2023. Twelve key informants were selected through purposive sampling, including traditional leaders, fishers, and women involved in coastal resource utilization. Data collection was conducted through in-depth interviews, participant observation, and document analysis. Interviews explored cosmological beliefs, zoning systems, and resource management practices, while participant observation focused on sasi rituals. Document analysis includes oral history and customary regulations. Data were analyzed using thematic analysis to identify recurring patterns related to cosmology, ecological governance, and economic practices. Validity was ensured through triangulation and verification with community elders.

4 Results

The research data found in the field are as follows:

4.1 Marine Cosmology and Ecological Practices of the Masela Island Community

The Masela Island community divides the sea into four zones: makema, lora, liwya ramne, and pena. Each has its own ecological and spiritual functions, as shown in the following Table 1.

Table 1. Division of marine zones of the Masel Island Community.

Zone	Local Name	Location	Main Function	Characteristics / Signs
1. Makema	Blue Sea	The outermost, far from the beach	Inter-island connecting route	Dark blue water, big waves, no visible seabed
2. Lora	Meti Head	After Makema, approaching the reef boundary	Natural coastal defense fortress	Waves begin to break on the outer reef; strong water movement
3. Liwya Ramne	In Meti	Between the outer reef and the beach, like a lagoon	Fish & shellfish maintenance; Sasi location	Calm and shallow water, lots of biota, there are Sasi signs (coconut leaves/wood)
4. Pen	Wave Feet	Closest to land	Rest area & boat landing	Small waves touching the beach, fine sand, attractive boat location

In carrying out fishing practices at sea, the people of Masela Island use the sasi system, which is a prohibition on taking marine products for a certain period of time. Usually within a month, three months, or six months. In catching marine products such as fish, the people of Masela Island also use traditional technology, namely catching fish using bubu, namely fish traps made of woven bamboo, as seen in the following Fig. 1.



Fig. 1. Harvesting fish from the sasi period.

4.2 Forest Cosmology and Ecological Practice

In addition to the marine zoning system, the Masela Island community also has a well-defined land zoning structure that reflects their cosmological understanding of the human-earth relationship. Land is not seen merely as a physical resource, but as a living space imbued with the presence of ancestors and moral responsibility. The traditional land division in Masela consists of four main zones, each of which serves an ecological and social function in the community's livelihood system as shown in the following Table 2.

In the farming area, the people of Masela Island are familiar with the farming tradition using the *lutur* system. *Ludur* is a farming location determined through a collective meeting of the entire community at the beginning of the year. Traditionally, to begin the new year, the community performs the *Lulya* ritual, a ritual to ask for rain and blessings for farming. This ritual typically includes singing traditional poems called *Tyarka*. This ritual is where agreement is reached on the farming location. Every year the location for shifting cultivation changes. This shifting cultivation tradition is one form of community effort to maintain environmental sustainability and natural resources. The nomadic system is a form of inheritance from our ancestors.

Areas designated for farming will be surrounded by a very sturdy stone fence. This fence is commonly referred to by the locals as *Ludur*, referring to the farming area. The sturdy fence was built using traditional techniques without the use of cement. The stones were arranged with precise calculations to create a structure resembling a concrete fence. Below is a picture of the former field where the *lutur* stone fence is still visible.

Table 2. Division of Masela Island community forest zones.

No	Zone (Local Term)	Ecological Function	Cultural or Spiritual Meaning
1	Lera (Settlement Zone)	Residential area and communal space for daily interaction.	Represents social harmony; the center of kinship and village unity.
2	Wakmyer (Cultivation Zone)	Used for mixed agriculture corn, tubers, and cassava with rotational cropping practices.	Symbolizes balance between human labor and earth's fertility; rituals of soil blessing are performed here.
3	Lerwot (Forest Zone)	Source of timber, medicinal plants, and wildlife. Exploitation is restricted by customary rules.	Regarded as the dwelling of guardian spirits; cutting trees requires ritual permission (<i>mole nyara</i>).
4	Lyeramna (Sacred Zone or <i>taboo land</i>)	Forbidden forest or hill area not used for farming.	Considered the sacred realm of ancestors; entry requires ritual purification.

**Fig. 2.** Location of the lutur community of Masela Island.

5 Discussion

The findings of this study point out a distinctive model of sustainable economic practices rooted in the marine cosmology and traditional ecological ethics of the Masela Island community. Unlike many community-based conservation models that emerge from agricultural or forest-based systems, the Masela model stems from a maritime. A way of seeing the world where the ocean, land, and spirits of ancestors all work. This way of looking at the world doesn't just shape how people use resources it could also

help guide rules and plans for using resources in a way that lasts, especially on Indonesia's as one, shaping what's right and wrong islands.

5.1 Global Foundation for Environmental Management

The zoning system of McKim, Lowrey, Livia Romney, and Pena describes the cosmic order that connects human life with the sea and land worlds. Each natural area has special meanings and norms regarding how society relates to land and nature. People in society are aware and aware of the environment in which they live. So, they treat their environment with respect. This is not just about exploiting marine resources. This worldview allows us to treat nature with respect and moderation. Mutualism a principle consistent with Barks (2012) concept of sacred ecosystems, but in a specific marine context [2].

This way of thinking about the world is very different from the way modern environmental policy works. Because these policies often divide nature, Masella's system shows that maintaining natural balance is not just an external law. But this is about people who have deep beliefs and values. This is very important for policy and program development. We should not dismiss traditional beliefs as a new idea to help small islands become more resilient. But we should see it as an important way for humans to understand and manage the earth, its seasons, and its elements. About how people's lives work together.

5.2 Sustainable Economy Through Traditional Knowledge

Things like SASI and Luther are resource management techniques that help humans adapt natural cycles to their lifestyle. The 3D system controls sea fishing and bycatch by establishing short rest periods to keep fish and other marine life active. This infographic shows how cooperation and resilience can help preserve the power of nature. As stated by Burke, Colding, and Volk (2000), when people join local communities, the combination of traditional and religious orientation shows how people can embrace their traditions. They combine ancient traditions and Christian values that respect and follow all people. Bringing communities together in this way will increase the efficiency of local government and help bring everyone together. This also ensures that you have time with other divers. If necessary, some items can be replaced. This helps protect environmental health.

Local regulations prohibit residents from catching fish or other marine animals during certain hours. This system is used on two types of normal slopes and conventional slopes. According to sushi tradition, if someone breaks the rules, he must pay with cloth or gold. However, instead of paying the fine, the Sassi Church faithful prayed and gave thanks. This change shows how local traditions and Christian religion began to mix after the Dutch came to power. Under the Sachi project, community members come together and decide when they can fish or harvest marine products. They use their knowledge and adjust the rules as needed. These systems don't just control how people use resources. But this also helps the people of Mesila to appreciate nature more and work together better.

Luther's agricultural system also shows how humans adapt to their environment. The people of Mesila maintain the health of their land by observing crop rotation and important traditions and avoiding excessive use. Stone walls and open fields not only protect the land; But it also shows where human activity ends and nature begins. Repeating the mantra during the ceremony helps people remember to be grateful to the world and stay humble. All these views show that traditional knowledge about nature has not lost its validity. This is a way to protect the environment and help maintain people's lives

5.3 Policy Implications

The study proposes an initiative called the Global Policy Framework for Sustainable Development of Islands (CPFIS), which includes regional divisions along religious lines. Caring for the environment through traditions and teaching people about the relationship between culture and nature. This framework provides a bottom-up approach to sustainability. This is different from the traditional model which is top-down.

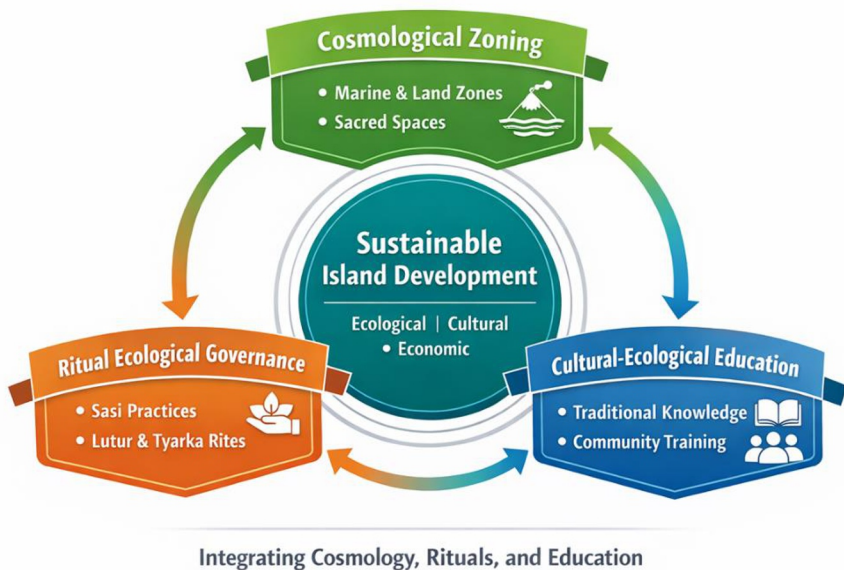


Fig. 3. Cosmological policy framework for island sustainability (CPFIS).

6 Conclusion and Recommendation

This study shows that piopsiae, luthora and tyrka act as adaptive mechanisms that regulate environmental use. Maintaining ecosystem balance and promoting social cohesion The Global Policy on Island Sustainability (CPFIS) states that it is important to

integrate local considerations into island planning. Traditional ways of making decisions and educating people about nature and culture. This model helps local business operations in the long term. This can ensure that small islands are managed and planned well. Masila Island protects its environment by combining traditions, beliefs and respect for nature. Together they use resources to manage and improve their environment.

Acknowledgments. This research was made possible through the generous support and cooperation of the community and the Government of Pulau Masela District, Southwest Maluku, to whom the author expresses sincere gratitude. The author also extends appreciation to the Doctoral Program in Humanities, Faculty of Cultural Sciences, Gadjah Mada University, for the opportunity to pursue doctoral studies. Deepest thanks are further conveyed to the National Research and Innovation Agency (BRIN) for its continuous support and trust, which enabled this study to be carried out as part of the Degree by Research doctoral program.

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