NAKHODA
JURNAL ILMU PEMERINTAHAN

Nakhoda: Jurnal Ilmu Pemerintahan
Vol. 23 No. 2 (2024): 211-220
p-ISSN: 1829-5827
e-ISSN: 2656-5277

Keban Lewa Lolon: Food Barn Inspiration for Coastal Area Management Policy in Indonesia

Keban Lewa Lolon: Inspirasi Lumbung Pangan untuk Kebijakan Pengelolaan Wilayah Pesisir di Indonesia

Karolus Tatu Sius [1], Yasinta Y. Palan Peten [2], Inosensia Nogo Niron [3], Hendrikus L. Kaha [4], Paulus Adrianus K. L. Ratumakin [5]

[1, 2, 3, 4, 5]Department of Public Administration, Universitas Katolik Widya Mandira, Kupang, Indonesia

Corresponding Author: karolsius@gmail.com

Abstract

This study starts from the paradox of coastal and marine management. On the one hand, marine resources provide various potentials that bring various benefits from their ecosystem services. However, on the other hand, coastal and marine utilization often causes conflict due to mismanagement, ignoring community participation and excessive economic orientation without considering social and environmental aspects. This study uses qualitative methods to explore the meaning of *keban* in general and its functions. Coastal and marine management models in the form of conservation/protection, utilization, and ecosystem improvement can be carried out through two approaches. The first is to give full responsibility and authority to the government or local community. Second, integrate management between the government and the community. *Keban lewa lolon* on Solor Island offers an integrative model of sustainable coastal and marine management based on local wisdom that is known and accepted by the local community. *Keban lewa lolon* is a new practice on Solor Island for the protection, utilization of the coast and sea inspired by the food barn on land. The *keban* model integrates local wisdom with government zoning policies. From a public policy perspective, this study contributes to the design of participatory policies for the management of coastal and marine spaces based on local wisdom.

Keywords

Keban; Food Storage; Policy; Zoning; Coastal Management.

Abstrak

Penelitian ini berangkat dari paradoks pengelolaan pesisir dan laut. Pada satu sisi, sumber daya laut menyediakan berbagai potensi yang mendatangkan berbagai manfaat dari jasa ekosistemnya. Namun pada sisi lain, pemanfaatan pesisir dan laut sering menimbulkan konflik akibat salah kelola, mengabaikan partisipasi masyarakat dan orientasi ekonomi yang berlebihan tanpa memperhitungkan aspek sosial dan lingkungan. Penelitian ini menggunakan metode kualitatif untuk menggali makna keban secara umum dan fungsi-fungsinya. Model pengelolaan pesisir dan laut dalam bentuk konservasi/perlindungan, pemanfaatan, dan perbaikan ekosistem dapat dilakukan melalui dua pendekatan. Pertama memberikan tanggung jawab dan kewenangan sepenuhnya pada pemerintah atau masyarakat lokal. Kedua, mengintegrasikan pengelolaan antara pemerintah dengan masyarakat. Keban lewa lolon di Pulau Solor menawarkan model integratif pengelolaan pesisir dan laut berkelanjutan berbasis kearifan lokal yang dikenal dan diterima komunitas lokal. Keban lewa lolon merupakan praktik baru di Pulau Solor untuk perlindungan, pemanfaatan pesisir dan laut terinspirasi dari lumbung pangan di darat. Model keban mengintegrasikan kearifan lokal dengan kebijakan zonasi pemerintah. Dari sudut kebijakan publik, penelitian ini berkontribusi pada desain kebijakan partisipatif pengelolaan ruang-ruang pesisir dan laut berbasis kearifan lokal.

Kata Kunci

Keban; Lumbung Pangan; Kebijakan; Zonasi; Pengelolaan Pesisir.

DOI: 10.35967/njip.v23i2.737

Submitted: 15 April 2024
Accepted: 5 July 2024
Published: 31 December 2024

1. Introduction

Coastal and marine spaces are a combination of very complex interactions of ecological, social and economic elements due to the activities and interests of various parties (Conacher, 2001). In addition, the logical consequences of the nature of the coast and sea as open access areas and common pool resources open up opportunities for contestation and competition of different interests (Annisa et al., 2009; Royandi & Keiya, 2019). Therefore, sustainable management of coastal spaces must consider resource sustainability, regional security, and land and water space utilization activities (Campbell et al., 2016; Carothers, 2015; Ducrotoy & Furukawa, 2016).

Various issues of coastal and marine space utilization around the world gave birth to the United Nations Convention on the Law of the Sea (UNCLOS) agreement in 1982. Since then, coastal and marine spaces have received increasing attention from both the government, practitioners and academics with the aim of sustainable and equitable management (Zou et al., 2023). Government attention is expressed in various regulations, including zoning policies in development planning. The aim is to protect ecosystems, manage coastal and marine resources, minimize conflicts in the use of resources and environmental services (Douvere, 2008; Tuda et al., 2014).

As a maritime country, sustainable management and utilization of the coast and sea is an urgent policy of the Indonesian government. First, Indonesia has a sea area of 5.8 million square kilometers with 17,480 islands surrounded by a coastline of 95,181 kilometers (Haryanto, 2015). Indonesia also has coastal and marine biodiversity, such as mangrove ecosystems with an area of around 3,668,345.60 Ha, seagrass covering an area of 474,920.93 Ha and coral reefs reaching 2,424,721.23 Ha (Wahyudin, 2016). Second, although the potential for biodiversity is so great, it is not directly proportional to the welfare of coastal communities. The Central Statistics Agency in 2022 released data on the poverty of the population living on the coast reaching 17.74 million people with extreme poverty of up to 3.9 million people. Third, the potential of Indonesia's coast and sea as a source of future food. This potential can answer the increase in global consumption as the population grows approaching 10.9 billion by 2100 (Farmery et al., 2021; Sardan et al., 2023). Coastal and marine areas can provide nutritious and sustainable food sources for life. Fourth, the impact of climate change affects marine ecosystems and the potential for environmental damage that reduces people's food security (Leandro et al., 2020).

Indonesia manages coastal areas with a zoning policy in Law Number 27 of 2007 which was amended to Law Number 1 of 2014 concerning Management of Coastal Areas and Small Islands. This policy regulates management planning, ecosystem utilization, coastal water rights, conservation, protection of indigenous peoples' rights, and coastal disaster mitigation. The aim is to ensure the sustainability of coastal ecosystems and small islands, while at the same time improving community welfare and maintaining the integrity of the Republic of Indonesia (Indrayati, 2017). However, the rapid economic development in Coastal Areas and Small Islands (WP3K) has also had an impact on damage and alteration of coastal ecosystems, coastal erosion/abrasion, coastal water pollution, decline in fish resources and conflicts over resource utilization (Siregar et al., 2021). Zoning that does not take into account the management of local wisdom of residents and the sustainability of ecosystems is often rejected because it is an environmental threat and a source of conflict (Maulida, 2021).

The zoning policy by the government also leaves room for community/resident management based on local wisdom. Coastal area management provides access to local communities to realize prosperity while improving the standard of living of coastal villages (Fabianto & Berhitu, 2014). Fadli and Nurlukman (2018) explains two forms of fisheries and marine resource management, namely Community-Based

Fisheries Resource Management (CBFM) or management of fisheries resources by the government, and joint management (integration of CBFM and management of fisheries resources by the government).

The practice of managing and utilizing coastal and marine resources based on local wisdom is found in various regions of the archipelago, such as *sasi* in Negeri Haruku and *muro* in Lembata (Samun & Kaler, 2023). However, not many coastal areas have traditions of protecting and utilizing coastal and marine spaces like in Central Maluku and Lembata. Therefore, it is necessary to explore local wisdom models for resource protection that can be applied to integrated coastal and marine management.

There have been many studies conducted on local wisdom-based food barns, but they are generally carried out for agricultural food barn models (Hulu & Thamrin, 2022; Marina et al., 2022; Sari et al., 2022). Research related to coastal and marine resource management using local wisdom has also been conducted in the Haruku and Lembata Island areas. Local wisdom (*sasi*) is knowledge of coastal natural resource management based on customary systems that have been used for generations by the people of Negeri Haruku. The application of *sasi* as a coastal and marine resource management system has the function of monitoring, supervision and law enforcement Meanwhile, the practice of *muro* is manifested in rituals and customary rules to guard an area on land or at sea for a certain period of time by the Lembata indigenous people. Research on *muro* focuses on its meaning and impact on the community (Samun & Kaler, 2023; Tuda et al., 2014). Unlike *sasi* and *muro* which are local knowledge of the community that has been practiced for a long time, *keban lewa lolon* (food barn in the sea) is a new practice. The protection and utilization of the coast and sea are inspired by the food barn on land. This study aims to explore the meaning and function of *keban* as local wisdom that can be integrated into the governance of coastal and marine areas that have been determined by the government. Integrating the two forms of management, namely community management and government zoning in coastal area governance will provide a more holistic understanding of sustainable coastal and marine management. Sustainable coastal and marine management has an impact on the resilience and food sovereignty of residents, especially those living in the surrounding areas. The coast and sea provide various sources of protein such as fish and other seafood. Mangrove ecosystems that grow on the coast protect agricultural land from saltwater intrusion. In addition, coastal and marine resources are a source of livelihood that allows economic access to food. This study contributes to the design of zoning policies and community participation in policy-making related to local wisdom-based livelihood spaces that support coastal residents' food security.

2. Methods

This study uses a qualitative approach to explore the functions and values of land food barns adopted by *keban lewa lolon*. This study was conducted in Bubu Atagamu Village and Lewograran Village, West Solor District, East Flores Regency. The informants of this study include: the Heads of Bubu Atagamu and Lewograran Villages, traditional leaders, community leaders, Village Deliberative Body, fishermen, residents of both villages, the Director of the YTIB NGO and the East Flores Regency Government. In collecting and analyzing the data, the researcher refers to several stages described (Miles et al., 2014).

The research team began this research by conducting various preparations including determining the location, informants, making interview guides, preparing activity schedules, making contact with contact persons and informants. The next stage is for the research team to go to the field to collect data and explore information through interviews. The team will also conduct observations of land and seafood

barns to be documented. The research team also conducted a literature study from YTIB activity reports, journals, books, national regulations, the NTT Provincial RZWP3K Regulation, Village Regulations and Village Revenue and Expenditure Budget (APBDes), and other relevant data. Furthermore, the data and information collected are sorted according to the needs and objectives of the research by coding. The results of data and information collection are then interpreted to find broader meaning and implications.

3. Results and Discussion

The concept of *keban* places local communities as the main actors in decision-making, planning, implementation and supervision of coastal and marine resource management. *Keban* directly supports food sovereignty because it gives control and rights to local communities to define their own food systems. They decide which areas will be conserved and utilized, and what resources will be harvested to meet nutritional needs. The part that is the core zone will be closed, and other parts will be opened for use by mutual agreement. This wisdom is the key to food sovereignty because the community itself has the right to produce ecologically and sustainably.

3.1. The Urgency of *Keban Lewa Lolon* on Solor Island

Law Number 27 of 2007 defines a small island as an island with an area of less than or equal to 2000 km² with various biological, non-biological, artificial resources and environmental services. This definition makes Solor Island in East Nusa Tenggara Province fall into the criteria of a small island because its area only reaches 226.3 km². With this area, the existence of land and coastal/marine ecosystems becomes a unit that influences each other.

The existence of the coast and small islands in Indonesia shows vulnerability to the impacts of climate change (Khakim et al., 2014). The impacts of climate change are also felt in coastal and marine areas which include rising sea levels, changes in storm surges and rainfall, water temperatures, and ocean acidification. In fact, the people on Solor Island, like the people of other small islands in Indonesia, depend on the agricultural and marine sectors as farmers and fishermen for their livelihoods. The geographical conditions of Solor Island, which is dominated by rocky hills with minimal water sources, make it vulnerable to various food crop production. Meanwhile, from the marine sector, extreme weather and activities in the use of coastal and marine space that are not environmentally friendly exacerbate the vulnerability of local residents.

The vulnerability of coastal areas and small islands has encouraged the government to regulate planning, utilization, supervision, and control activities for human interaction and utilization of coastal resources. One operational form of this policy is stated in the Regulation of the Minister of Marine Affairs and Fisheries Number 23/ 2016 concerning Planning for Management of Coastal Areas and Small Islands and Regulation of the Minister of Marine Affairs and Fisheries Number 12 of 2024 concerning Community Participation and Empowerment in the Management of Coastal Areas and Small Islands. At the provincial level, coastal and marine management is stipulated through the Regional Regulation of the Province of East Nusa Tenggara Number 4 of 2017 concerning the Zoning Plan for Coastal Areas and Small Islands. However, the management efforts carried out by the provincial government have not been fully apparent in governance at the lowest level, especially in villages in coastal areas. These zoning efforts have not been properly socialized to residents in the villages. Residents do not understand the forms of zoning carried out by the government so that the management policy by the government is not implemented properly. Added to this, the lack of monitoring and

supervision makes coastal and marine areas an open access area that causes various conflicts between communities.

Conflicts over the use of coastal and marine space that cause socio-ecological vulnerability are a fact on Solor Island. The coastal and marine wealth of the southern part of Solor Bay, which is rich in biodiversity, such as fish, sea cucumbers, and octopus, is targeted by fishermen from other districts and islands. Exploitation of marine products using environmentally unfriendly fishing methods, especially the use of bombs, has been carried out by outside fishermen since the 1970s. Even bomb-assembling skills are taught to local fishermen. As a result, marine ecosystem damage occurs due to the destruction of coral and seagrass as fish spawning grounds. Several types of endemic biota such as turtles, napoleon fish, parrot fish, *baronang*, and several other types of fish are threatened with extinction. This condition affects the amount of catch and income of fishermen. Coastal damage is also exacerbated by abrasion due to the taking of rocks and sea sand for development activities.

Climate change that has an impact on crop failure and crop failure as well as decreasing food production on land is the reason for the Solor community to switch to marine resources. However, the condition of the sea, which is a source of food for residents, has been damaged from 1970 until around 2016 due to access to marine resources by human activities with fishing equipment and materials that are not environmentally friendly. Therefore, the idea of *keban lewa lolon* (marine food barn) is an alternative for rehabilitation as well as sustainable utilization and protection of the coast and sea. In addition to meeting food needs sustainably, *keban lewa lolon* initiated by the Tanah Ile Boleng Foundation together with local residents is also part of climate literacy for the residents of Solor Island.

3.2. Identification of Space and Function of the *Keban*

In the past, there were many food barns (*keban* in the local language) throughout the villages/villages of East Flores Regency. Every family, tribe and village have a *keban*. The construction of family *kebans* was carried out independently or with the help of labor and materials from relatives. Meanwhile, tribal or village *kebans* were generally built through mutual cooperation. The *kebans* that were built were shaped like stilt houses and were used to store corn, rice and beans. Food barns would be the mainstay of residents during the lean season. Even from the *keban*, quality seeds were stored and taken out every planting season. In addition to storing food, *kebans* were also used as a place to rest with family and hold discussions.

Keban is a measure of community food security and sovereignty. From *keban*, people can help each other when family, neighbors and even other residents experience a shortage of food supplies. *Keban* owners can lend corn or rice to families/residents to be consumed or used as seeds. The return mechanism will be carried out when the borrower has harvested or filled his *keban*.

Keban has areas that are arranged for certain functions so that the food supply in the *keban* can meet daily needs and other urgent needs. The areas in the *keban* are arranged according to their respective functions. *Keban keniki/temude*, is an area in the right corner of a large room called *lewat*. This area is the main room of a *keban*. Its function is as a place to store food for long-term consumption. Corn/paddy/beans placed in the *keban keniki/temude* area can only be taken if a farmer wants to enter a new harvest in the following year. *Keban keniki/temude* for a farmer becomes the spirit, enthusiasm, spirit or strength of food for the farmer's family.

The next part of the *keban* is *mele wana/keniki baku*. This area is a space for storing corn/paddy/beans harvests for the short term. This section is located in the right corner of the entrance to the *keban* which is used to store corn, paddy, and bean seeds. At the left entrance there is an area called *mele neki/muro nadin*. Its function

is as a distribution space and a place to store agricultural products specifically for sale.

3.3. Adoption of *Keban* Functions and Values for Coastal and Marine Management

Coastal space management carried out on Solor Island is based on the functions of food barns on land. *Keban keniki/temude* is identified with the core zone. The core zone is a protected area because it is a spawning location for marine biota. This core zone is closed from various activities that damage the underwater area and are prohibited from being used. This area is a place where coral reefs are maintained and restored from damage due to environmentally unfriendly fishing activities. The determination of the core zone is carried out through traditional rituals so that it binds all residents.

Mele wana/keniki baku is identified with the buffer zone. The buffer zone is closed for approximately 3 years to ensure the recovery or improvement of marine biota habitat. The process of closing this area is carried out by traditional leaders through rituals involving the village government and residents. This zone will be opened in 3 years so that the community can access the existing resources.

Mele neki/muro nadin is identified with the utilization zone. This area is designed using boundaries of ropes and buoys and is made of fish houses or fish aggregating devices (FADs). The community is allowed to access this area for consumption and marketing. The distance from the location of the FAD to the core zone and buffer zone is approximately 500 meters.

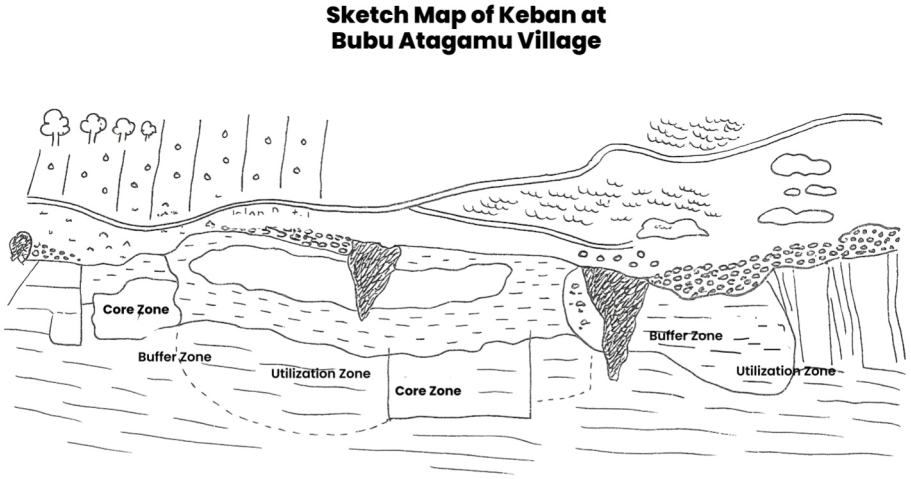

Figure 1. Sketch Map of *Keban*

Source: YTIB Document

3.4. Stages and Process of Coastal and Marine Local Wisdom Zoning

The Ile Boleng Land Foundation (YTIB) initiated and implemented the concept of conservation based on local wisdom of *keban lewa lolon*. YTIB's initial initiative was funded through the Critical Ecosystem Partnership Fund (CEPF) program since 2016. Through the support of the NTT Provincial Marine and Fisheries Service, Branch Office (KCD); YTIB identified 61.97 Ha of local wisdom areas in the South Solor Bay area. The mapped area is included in the Flores Timur Regency marine conservation area. This local wisdom area is divided into a core zone/*keban keniki/temude* covering an area of 20.74 Ha, a buffer zone/*mele wanan/keniki baku/belebak* 1 covering an area of 13.05 Ha and a utilization zone/*mele nekin muro nadin/belebak* 2 covering an area of 26.70 Ha.

The process of developing *keban lewa lolon* initiated by YTIB and implemented together with villagers includes several important stages. First, YTIB conducts social and ecosystem studies. This study process includes socialization of activities, live-in with residents, preparation of instruments, conducting FGDs and interviews with stakeholders, and initial observations of coastal and marine conditions. Second, socialization of the study results in village meetings. This socialization involving stakeholders also becomes a momentum to build an agreement on the location of *keban lewa lolon*. Third, location mapping to measure the area that will become the *keban* zone. YTIB together with residents sketches a map of important locations according to fishermen and takes measurements and makes maps. Fourth, the formation of a *keban* management group through a Village Head Decree to strengthen the legality of the group. Fifth, building a joint agreement for *keban* management. YTIB together with the village government facilitates a *keban* governance workshop involving stakeholders from both residents and village, sub-district, district and provincial governments. Through joint meetings, residents also agree on customary sanctions. Sixth, the construction of the *keban* through mutual cooperation through making anchors, installing ropes and buoys as boundaries that are strengthened through rituals by traditional leaders. Seventh, the ratification of the *keban* followed by notification to all residents about customary sanctions and the signing of a joint agreement and minutes of the meeting become documents in the village. This event ends with a meal together as a form of togetherness in managing the *keban* and a sign of approval of the agreement that has been made.

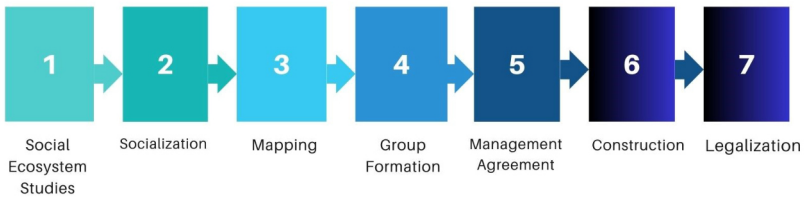

Figure 2. Stages of the *Keban* Making Process

Source: YTIB Document

3.5. Positive Impacts of *Keban* and Future Challenges

The local wisdom-based conservation program of *Keban Lewa Lolon* has contributed to reducing the frequency of fish bombing since 2017. In addition, there has been a change in community behavior in terms of coastal and marine resource management and waste control. In terms of ecosystem contribution, within a span of six years it has changed the underwater ecological conditions in Bubu Atagamu Village and Lewograran Village. The results of monitoring by traditional divers in the village show that coral reefs have begun to sprout again. There are more and more fish in the core zone, including small fish that take shelter on each buoy that acts as a barn fence. Signs that fish are starting to increase in number in this location are that in March 2023, small fish filled the entire coastline. According to the community, this situation is the same as decades ago when there were no bombs.

The increase in fish population is marked by the increasing number of traditional fishermen's catches at the *keban lewa lolon* utilization location and around other bays. Fishermen's income has increased from initially ranging from IDR50,000-IDR75,000 per day in 2019 to IDR75,000-IDR100,000 to IDR150,000 in 2020-2021. Even for traditional fishermen who are diligent and work harder, they can reach IDR200,000-IDR250,000 per day in 2023.

The existence of this project motivated the community and the Village Government to hold a discussion on limiting the taking of beach materials and

providing village funds for conservation through artificial reef/coral engineering. In addition, a Village Regulation was made to protect the *keban lewa lolon*. The community also participated in training on octopus catching and seaweed cultivation in the *keban lewa lolon* utilization area. The existence of the *keban* was further strengthened by the legitimacy given by the traditional figure of Koten, Kelen Hurit, Maran.

The positive impact of *keban* from the economic and ecological side cannot be separated from the various challenges of its sustainability. The results of the YTIB evaluation with residents found that threats to *keban* can occur because there are no joint regulations between villages. The limited area of *keban* zoning in the village can be less effective if it does not involve a wider landscape that is a single unit of marine biota habitat. Not to mention the disturbance of fishermen from outside the village who access the coast and sea around the *keban* with fishing equipment that is not environmentally friendly. In addition, the southern coast of Solor Bay which is often hit by large waves can damage the buoys and ropes installed as *keban* barriers.

These various challenges encourage the village government to work together with fishermen groups as supervisors who have been appointed through Village Head Decree Number 13 of 2022 concerning the Confirmation of the Management and Members of the Geroda Hoda Watan Peni Fishermen Group, Lewograran Village and Village Head Decree Number 8 of 2022 concerning the Establishment of the Laskar Bahari "Hari Botan" Supervisory Group, Bubu Atagamu Village. The supervisory group has standard operating procedures for supervision. The village government also allocates a budget for supervision and maintenance of the *keban*.

3.6. *Keban* and Its Contribution to the Integrative Model of Coastal and Marine Management

Keban lewa lolon becomes an integrative model of community and government-based coastal management. *Keban* coastal zoning based on local wisdom supports zoning policies that integrate coastal ecosystem protection with the role of local communities discussed in the concept of integrated coastal management (ICM) (Annisa et al., 2009; Cicin-Sain & Knecht, 1998; Fabianto & Berhitu, 2014). *Keban lewa lolon* which uses local wisdom values as a model for coastal and marine zoning enriches the discourse on contextual and sustainable resource management. *Keban* has become a useful lesson for conservation discourse and ecosystem-based zoning policies. The ICM concept not only focuses on sectoral and spatial integration, but also social integration (community involvement), knowledge integration (science and local wisdom), and temporal integration (long-term and adaptive to change) (Stojanovic & Ballinger, 2009).

Keban lewa lolon applied to the zoning of South Solor Bay provides practical evidence of the effectiveness of a participatory approach in natural resource management. These findings support the theory of the importance of zoning and ecosystem-based management that has been discussed by Tuda et al. (2014) and Douvere (2008). These experts advocate the involvement of local communities to avoid conflicts over resource use. The role of customary structures and local leadership, both administrative leaders and customary leaders, also determines citizen participation from planning to management of natural resources in the village (Adlin & Yusri, 2019; Darmansyah & Amin, 2019; Rafi et al., 2020).

The findings in this study also show the threat of climate change impacts on food security and the sustainability of coastal ecosystems. Coastal and marine management efforts through *keban* answer one of the problems of climate change which worsens ecosystem degradation by humans and the vulnerability of coastal communities (Leandro et al., 2020). Local-scale institutions built from local initiatives and wisdom are important factors in environmental sustainability

(Afriyanni et al., 2023). ICM creates a more equitable, effective, and resilient management system in facing the complexity of challenges in coastal areas.

4. Conclusion

The integration of local wisdom and government zoning policies in managing coastal and marine areas on Solor Island has resulted in a sustainable community-based conservation model. The local wisdom-based zoning model has been able to repair damaged ecosystems and provide economic value for the welfare of coastal residents. The marine food barn model was adopted from the *keban* concept on land. The function and meaning of the division of *keban* areas became the inspiration for determining zoning at sea which includes core zones, buffer zones, and utilization zones.

The success of the *keban lewa lolon* model can be encouraged to be replicated in other vulnerable coastal areas with various modifications according to the local context. In addition, the village government must also work together with community groups to strengthen customary sanctions and local regulations with the support of village regulations and budgets. It is also necessary to increase the capacity of local residents to carry out transparent monitoring and supervision. Although relevant and replicable, this study has limitations because the scope of the research location is narrow, making it difficult to generalize to a wider area.

Acknowledgment

Thanks are extended to the Ministry of Education, Culture, Research and Technology, LPPM Widya Mandira Catholic University, and the Ile Boleng Land Foundation and the residents of Solor Island who provided support and capacity building for the research team.

References

Adlin, & Yusri, A. (2019). Lembaga Adat di Daerah Aliran Sungai Singingi. *Nakhoda: Jurnal Ilmu Pemerintahan, 18*(1), 1–10. https://doi.org/10.35967/jipn.v18i31.7801

Afriyanni, Gevisioner, Rifai, A., Hayati, K., Agusyani, Purwati, & Kusumaningrum, N. R. (2023). Strategi Peningkatan Ketahanan Pangan Rumah Tangga di Kota Pekanbaru. *Nakhoda: Jurnal Ilmu Pemerintahan, 22*(2), 249–260. https://doi.org/10.35967/njip.v22i2.616

Annisa, L., Satria, A., & Kinseng, R. A. (2009). Konflik Nelayan di Jawa Timur: Studi Kasus Perubahan Struktur Agraria dan Diferensiasi Kesejahteraan Komunitas Pekebun di Lebak, Banten. *Sodality: Jurnal Sosiologi Pedesaan, 3*(1), 113–124. https://doi.org/10.22500/sodality.v3i1.5870

Campbell, L. M., Gray, N. J., Fairbanks, L., Silver, J. J., Gruby, R. L., Dubik, B. A., & Basurto, X. (2016). Global Oceans Governance: New and Emerging Issues. *Annual Review of Environment and Resources, 41*(1), 517–543. https://doi.org/10.1146/annurev-environ-102014-021121

Carothers, C. (2015). Fisheries Privatization, Social Transitions, and Well-Being in Kodiak, Alaska. *Marine Policy, 61*, 313–322. https://doi.org/10.1016/j.marpol.2014.11.019

Cicin-Sain, B., & Knecht, R. (1998). *Integrated Coastal and Ocean Management: Concepts and Practices*. Island Press.

Conacher, A. J. (Ed.). (2001). *Land Degradation* (Vol. 58). Springer Netherlands. https://doi.org/10.1007/978-94-017-2033-5

Darmansyah, R., & Amin, R. M. (2019). Kearifan Lokal Desa Buluh Cina (Studi Kasus Koordinasi Lembaga Adat, Pemerintahan Desa dan BBKSDA Riau dalam Melindungi Taman Wisata Alam Desa Buluh Cina). *Nakhoda: Jurnal Ilmu Pemerintahan, 18*(31), 35–46. https://doi.org/10.35967/jipn.v18i31.7804

Douvere, F. (2008). The Importance of Marine Spatial Planning in Advancing Ecosystem-Based Sea Use Management. *Marine Policy, 32*(5), 762–771. https://doi.org/10.1016/j.marpol.2008.03.021

Ducrotoy, J.-P., & Furukawa, K. (2016). Integrated Coastal Management: Lessons Learned to Address New Challenges. *Marine Pollution Bulletin, 102*(2), 241–242. https://doi.org/10.1016/j.marpolbul.2016.02.059

Fabianto, M. D., & Berhitu, P. T. (2014). Konsep Pengelolaan Wilayah Pesisir Secara Terpadu dan Berkelanjutan yang Berbasis Masyarakat. *Jurnal Teknologi, 11*(2), 2054–2058.

Fadli, Y., & Nurlukman, A. D. (2018). Government Collaboration in Empowerment? A Collaborative Framework for the Government in Empowering Coastal Communities. *Journal of Government and Civil Society, 2*(2), 145–161. https://doi.org/10.31000/jgcs.v2i2.1022

Farmery, A. K., Allison, E. H., Andrew, N. L., Troell, M., Voyer, M., Campbell, B., Eriksson, H., Fabinyi, M., Song, A. M., & Steenbergen, D. (2021). Blind Spots in Visions of a "Blue Economy" Could Undermine the Ocean's Contribution to Eliminating Hunger and Malnutrition. *One Earth, 4*(1), 28–38. https://doi.org/10.1016/j.oneear.2020.12.002

Haryanto, A. (2015). Faktor Geografis dan Konsepsi Peran Nasional sebagai Sumber Politik Luar Negeri Indonesia. *Jurnal Hubungan Internasional, 4*(2), 136–147. https://doi.org/10.18196/hi.2015.0074.136-147

Hulu, L., & Thamrin, M. H. (2022). Pengelolaan Cadangan Pangan Masyarakat Melalui Lumbung Pangan di Kabupaten Deli Serdang. *Jurnal Kajian Agraria dan Kedaulatan Pangan, 1*(2), 1–7. https://doi.org/10.32734/jkakp.v1i2.9143

Indrayati, N. (2017). Evaluating Policy Implementation on the Coastal Area and Small Islands Management - A Case Study of Gili Matra Park in West Nusa Tenggara, Indonesia. *Proceedings of the International Conference on Administrative Science (ICAS 2017)*. https://doi.org/10.2991/icas-17.2017.43

Khakim, N., Jatmiko, R. H., Nurjani, E., & Daryono, B. S. (2014). *Perubahan Iklim dan Pemanfaatan SIG di Kawasan Pesisir*. UGM Press.

Leandro, A., Pacheco, D., Cotas, J., Marques, J. C., Pereira, L., & Gonçalves, A. M. M. (2020). Seaweed's Bioactive Candidate Compounds to Food Industry and Global Food Security. *Life, 10*(8), 140. https://doi.org/10.3390/life10080140

Marina, I., Dinar, & Izzah, L. H. (2022). Penguatan Lumbung Pangan Masyarakat Melalui Program Kemitraan. *Journal of Sustainable Agribusiness, 1*(2), 53–60. https://doi.org/10.31949/jsa.v1i2.3950

Maulida, K. (2021). Forum Wahana Lingkungan Hidup Indonesia (Walhi) Lampung dalam Kasus Revisi Perda RZWP3K Berdasarkan Perspektif Advocacy Coalition Framework. *Nakhoda: Jurnal Ilmu Pemerintahan, 20*(2), 197–206. https://doi.org/10.35967/njip.v20i2.157

Miles, M. B., Huberman, A. M., & Saldana, J. (2014). *Qualitative Data Analysis: A Methods Sourcebook*. SAGE.

Rafi, M., Pribadi, U., & Rahmanto, F. (2020). Factors That Affect Deliberation of Maguwoharjo Village Development Planning Sub-district Depok Regency Sleman Yogyakarta. *Nakhoda: Jurnal Ilmu Pemerintahan, 19*(1), 91–101. https://doi.org/10.35967/jipn.v19i1.7843

Royandi, E., & Keiya, R. (2019). Kontestasi Aktor dalam Pengelolaan Sumber Daya Pesisir di Wilayah Pembangunan Reklamasi Teluk Jakarta. *Temali: Jurnal Pembangunan Sosial, 2*(1), 77–98. https://doi.org/10.15575/jt.v2i1.3619

Samun, L. K. C., & Kaler, I. K. (2023). Konservasi Sumber Daya Laut Berbasis Kearifan Lokal (Studi Antropologi tentang Fungsi Muro di Desa Kolontobo Kabupaten Lembata Nusa Tenggara Timur). *Jurnal Socia Logica, 3*(2), 154–164.

Sardan, M. A., Ali, N. M., Ali, A., Samsudin, A., Harun, N. F. A., Tan, Y.-L., & Kadir, J. M. A. (2023). Blue Economy and Food Security the Way Forward: A Systematic Literature Review Analysis. *International Journal of Asian Social Science, 13*(9), 271–281. https://doi.org/10.55493/5007.v13i9.4886

Sari, N. M. W., Sjah, T., Maryati, S., Supartiningsih, N. L. S., Ayu, C., & Yanuartati, B. Y. E. (2022). Analysis of the Effectiveness of the Community Food Barn Program on Food Security for Farmer Families During the COVID-19 Pandemic in West Lombok Regency, West Nusa Tenggara. *IOP Conference Series: Earth and Environmental Science, 1107*(1), 012106. https://doi.org/10.1088/1755-1315/1107/1/012106

Siregar, M. R., Daulat, A., & Sudirman, N. (2021). Rencana Kebijakan Zonasi Wilayah Pesisir dan Pulau-Pulau Kecil di Provinsi Bali. *Risalah Kebijakan Pertanian dan Lingkungan: Rumusan Kajian Strategis Bidang Pertanian dan Lingkungan, 8*(1), 11–22. https://doi.org/10.29244/jkebijakan.v8i1.28992

Stojanovic, T. A., & Ballinger, R. C. (2009). Integrated Coastal Management: A Comparative Analysis of Four UK Initiatives. *Applied Geography, 29*(1), 49–62. https://doi.org/10.1016/j.apgeog.2008.07.005

Tuda, A. O., Stevens, T. F., & Rodwell, L. D. (2014). Resolving Coastal Conflicts Using Marine Spatial Planning. *Journal of Environmental Management, 133*, 59–68. https://doi.org/10.1016/j.jenvman.2013.10.029

Wahyudin, Y. (2016, June 22). Potensi Bisnis Kelautan di Negara Maritim Poros Dunia untuk Kesejahteraan Rakyat Indonesia. *Agrimedia, 21*(1), 17–23. https://papers.ssrn.com/abstract=3457587

Zou, Z., Zhang, Y.-Y., Lee, S.-H., & Tsai, S.-C. (2023). The Transformation of Coastal Governance, from Human Ecology to Local State, in the Jimei Peninsula, Xiamen, China. *Water, 15*(14), 2659. https://doi.org/10.3390/w15142659