

Kebang Lewa Lolon: Institutionalizing Gemohing Values and Formulating a Community-Based Blue Economy Governance Model in East Flores

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Abstract: The blue economy is criticized for remaining dominated by technocratic-sectoral approaches, while community-based governance (CBG) literature tends to treat collective norms as a designed variable rather than the outcome of a long-institutionalized cultural value system. This gap leaves unanswered how local wisdom can be systematically institutionalized into authority structures, collective rules, and social accountability within community-based blue economy governance. This study analyzes how Kebang Lewa Lolon, a Gemohing-value-based marine zoning practice in Bubuatagamu Village, South Solor District, East Flores Regency, reflects the blue economy and CBG, and formulates an equitable, sustainable local wisdom-based CBG model. Using a qualitative instrumental case study design, data were collected through in-depth interviews, participatory observation, documentation, and focus group discussions involving twenty informants, analyzed thematically and inductively through institutional bricolage and Ostrom's design principles. Findings show that authority, collective rules, and sanctions within Kebang Lewa Lolon were not administratively designed but assembled (bricolé) from the philosophy of the Lamaholot land-based food barn, translated into three marine zones, evidenced by the failure of the initial technocratic approach and its success once reframed culturally. This study contributes to institutional bricolage scholarship by detailing how that land-based philosophy is reassembled into marine governance, and by showing that the resulting model is not a single, uniform template but a tiered one: ecological sustainability and food security follow a direct pathway of cultural institutionalization, while social justice follows a conditional pathway moderated by a facilitating actor. Practically, replicating a local wisdom-based coastal governance model requires mapping the local cultural-institutional repertoire rather than literally copying the zoning structure.

Keywords : institutional bricolage; community-based governance; blue economy; local wisdom; Kebang Lewa Lolon.

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1. INTRODUCTION

The blue economy is a sustainable development paradigm emphasizing the integration of economic growth, ecological sustainability, and social equity (Abid & Abid, 2025; Ahammed et al., 2024; Keen et al., 2018; Louey, 2022; Phelan et al., 2020). In Indonesia, it is affirmed in the 2025–2029 National Medium-Term Development Plan (RPJMN) and aligned

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with SDG 14 (Dahlia, 2024; Rifai et al., 2024), positioned as a response to ecosystem degradation while improving coastal welfare through the optimization of fisheries, ports, marine tourism, and maritime innovation (Elston et al., 2024). Normatively it promises integration of conservation and development, yet empirically its implementation reveals unresolved structural tensions (Bennett & Satterfield, 2018): locally, the blue economy is frequently reduced to a fisheries-production agenda, participatory governance has yet to become a policy foundation (St. Pier et al., 2026; Wulandari et al., 2025), and marine development remains top-down and sectoral, such that coastal communities have not yet become the primary subjects in managing their own resources (Hidayati & de Vries, 2025; Riesnandar & Nuhartonosuro, 2025).

Awareness of the limitations of this technocratic-sectoral approach has driven a shift in attention toward community-based governance (CBG), which positions the community as the center of legitimacy in the management of public resources through the distribution of authority, collective deliberation, and the integration of social norms into institutional structures (Haryanto et al., 2022; Shin, 2022). This shift transforms the way coastal communities are perceived, from policy objects into actors possessing genuine authority to formulate rules, monitor compliance, and enforce social sanctions.

Within the context of the Lamaholot community in East Flores Regency, this shift finds its counterpart in the value of *Gemohing*, a moral system of mutual cooperation that governs shared responsibility, deliberation, social solidarity, and the balance of human-nature relations (Keban et al., 2023). This value is historically rooted in land-based activities, yet prior research indicates its strategic relevance for marine resource management, even though its application in the marine sector remains limited (Bidi et al., 2026).

An institutional manifestation of this value is found in Bubuatagamu Village, South Solor District, through the *Kebang Lewa Lolon* initiative, or “sea barn,” driven by the Tana Ile Boleng Foundation. *Kebang* adapts the traditional Lamaholot storage-barn system into coastal resource management as a collective mechanism for regulating the utilization, storage, and distribution of marine products to strengthen community food security, while simultaneously revitalizing the role of customary institutions, women's participation, and ecological education. This village was selected because its customary institutional structure remains active in collective decision-making, meaning that *Kebang Lewa Lolon* is embedded within an ongoing village governance process rather than standing as an isolated initiative.

Recent literature shows blue economy discourse remains dominated by technocratic and sectoral approaches, emphasizing marine environmental sustainability (Kismartini et al., 2026), port infrastructure (Martínez-Vázquez et al., 2023), and maritime technology integration (Vaca-Cabrero et al., 2025), while traditional fisher marginalization persists across archipelagic regions (Hampton & Jeyacheya, 2020), and Indonesian studies remain confined within macro-policy frameworks (Airawati et al., 2023). Even where attention shifts toward community-based governance, which itself answered an older assumption that shared resources could only be protected through state control or privatization (Hardin, 1968), the CBG and common pool resources literature underscores the importance of social control and collective ownership only in general terms (Adhikari, 2021; Nogueira et al., 2021), and has not been used explicitly to explain how the blue economy is operationalized within contexts rooted in coastal cultural values. These strands have therefore developed separately: the blue economy remains fixated on sectoral optimization without a community governance foundation, while CBG has yet to explain how local wisdom such as *Gemohing* can be institutionalized into authority, rules, and accountability mechanisms within community-based blue economy governance, as potentially reflected in *Kebang Lewa Lolon*. Left unaddressed, this gap leaves blue economy policy vulnerable to repeating the same top-down failures that community-based governance

was meant to correct, designing structures that bypass the cultural-institutional capital communities already possess.

Based on this gap, the present study is designed to answer two research questions. First, how does the implementation of *Kebang Lewa Lolon* reflect the principles of the blue economy and community-based governance, and how is the value of *Gemohing* institutionalized within the collective governance of coastal resources in Bubuatagamu Village. Second, how can a local wisdom-based community-based governance model be formulated to strengthen the implementation of the blue economy in an equitable and sustainable manner.

This study's specific contribution lies in analyzing how cultural values are operationalized into institutional mechanisms within *Kebang Lewa Lolon*: the formation of authority between customary institutions and the village government, the regulation of marine-space utilization based on collective rules, and the strengthening of social control through the legitimacy of cultural norms, offering an empirically grounded account of this process rather than a claim to be the first study of its kind.

Theoretically, this study contributes in three respects: extending the blue economy literature with a culture-based governance perspective as an alternative institutional foundation; enriching the community-based governance literature by demonstrating the transformation of local moral values into structures of authority, collective rules, and mechanisms of social accountability; and bridging two strands of literature that have hitherto developed separately. Empirically, this study is expected to produce a field-validated conceptual model of local wisdom-based coastal governance, along with policy recommendations for village governments and local stakeholders in strengthening equitable, participatory, and sustainable coastal governance. The remainder of this article is organized as follows: the second section presents the literature review and analytical framework; the third section explains the research method; the fourth section presents the findings; the fifth section discusses the findings within the theoretical framework; and the article concludes with the conclusion and study limitations.

2. LITERATURE REVIEW

The blue economy, as a marine development policy framework, has developed rapidly in response to the crisis of marine ecosystem degradation and the need for maritime economic diversification (Elston et al., 2024; Keen et al., 2018). Recent literature reveals three dominant tendencies: an emphasis on the ecological sustainability of the marine environment (Kismartini et al., 2026), the optimization of port infrastructure as a growth node (Martínez-Vázquez et al., 2023), and the integration of technology for maritime efficiency (Vaca-Cabrero et al., 2025). All three tendencies rest on a technocratic-sectoral logic, in which success is measured through indicators of production, investment, and efficiency, rather than through the quality of power relations among the state, the market, and coastal communities.

Criticism of this orientation has long been voiced. Several studies show that the expansion of the marine industry frequently proceeds alongside the marginalization of traditional fishers, particularly in archipelagic regions (Hampton & Jeyacheya, 2020), while studies in Indonesia show that the integration of the blue economy with coastal welfare remains trapped within a macro-policy framework far removed from the realities of local communities (Airawati et al., 2023). The fundamental problem lies not in the absence of good policy intentions, but in a governance architecture that has yet to position the community as the basis of legitimacy and authority, such that local socio-cultural dimensions tend to be positioned as a complement rather than as the institutional foundation of the blue economy itself. This pattern is part of a broader “blue justice” critique connecting blue economy implementation to uneven

distributions of benefit and harm across coastal communities (Blythe et al., 2023; Silver et al., 2015).

Community-Based Governance: Distribution of Authority and Its Operational Limitations

In response to these limitations, the community-based governance (CBG) literature offers a framework that positions the community as the center of legitimacy and the primary actor in the management of public resources, through the distribution of authority, collective deliberation, and the integration of social norms into institutional structures (Haryanto et al., 2022). Within the tradition of common pool resources management, Ostrom's eight design principles (Ostrom, 1990) have long served as a reference for explaining why a number of communities have succeeded in managing shared resources sustainably without privatization or full state control, through clearly defined membership boundaries, mutually agreed collective rules, monitoring mechanisms, and graduated sanctions (Adhikari, 2021; Nogueira et al., 2021; Shin, 2022).

Another critique developing within the CBG literature highlights the limits of gender inclusivity: a number of studies show that community-based participatory approaches frequently and systematically marginalize women's voices in decision-making, even when women hold formal leadership positions (Chambon et al., 2025; Rice et al., 2024), while effective women's participation has been shown to require specific supporting structural conditions, rather than formal representation alone (Ferguson Irlanda et al., 2025).

Nevertheless, CBG literature faces operational limitations: it excels at explaining the formal structure of collective governance, yet rarely explains where the normative legitimacy of such rules originates when the context involves resources bound to a particular cultural value system rather than purely natural resources. CBG tends to treat social norms as a designable structural variable, rather than as the outcome of a moral system long institutionalized within society, and has therefore not adequately explained how established local cultural values are institutionalized into authority, rules, and accountability mechanisms rather than designed from scratch through formal agreement.

Local Wisdom as Governance Capital: From Symbol to Mechanism

Within the context of the Lamaholot community, this gap finds a response in the value of *Gemohing*, a moral system of mutual cooperation that governs shared responsibility, deliberation, and the balance of human-nature relations (Keban et al., 2023). Prior studies show that *Gemohing* holds strategic relevance for marine resource management, even though its application to the marine sector remains limited and has not yet been systematically institutionalized (Bidi et al., 2026). Another study of the same Lamaholot community shows that a customary rite, in the case of Bau Lolon, can function as a social control mechanism that genuinely binds the behavior of public actors, extending beyond a merely symbolic cultural-heritage value (Lamawuran et al., 2026). Recent studies further show that similar institutions, such as Sasi Laut in Maluku and Papua, hold potential for direct integration into Indonesia's national blue economy policy framework (Ananta & Cabral, 2026), even though this practice has persisted across generations, in contrast to *Kebang Lewa Lolon*, which is a new construction.

Nevertheless, the local wisdom literature in public administration generally faces a similar critique: a normative-romantic tendency that positions local practices as a “better alternative” without critical evaluation of their effectiveness, along with limitations in explaining how local values are translated into concrete and empirically testable governance mechanisms. The central challenge is not merely acknowledging the existence of local wisdom,

but explaining how and under what conditions such practices genuinely function as institutions that generate collective compliance.

These three strands of literature, the blue economy, community-based governance, and local wisdom, thus leave an unbridged point of convergence: no framework yet explicitly explains how cultural values already institutionalized in social life can serve as a foundation for the distribution of authority, collective rules, and social accountability within community-based blue economy governance.

This gap has in fact long been anticipated within critiques of Ostrom's design principles themselves. Cleaver (2002, 2017) advances institutional bricolage as a critique of the view that common-pool resource governance institutions can be “designed” rationally through a universal set of principles. Instead, she shows that institutions functioning effectively in the field are more accurately understood as the outcome of bricolage, reassembling existing norms, habits, and prior authority into new institutional arrangements, rather than being built from scratch through formal agreement. This critical institutionalism perspective (Hall et al., 2014) asserts that the legitimacy and effectiveness of collective institutions derive not solely from formal-rule clarity, but from the extent to which rules align with socio-cultural structures and power relations already alive within society, a framework shown to extend across common-resource domains, including community forest management (Charmakar et al., 2024).

This study employs community-based governance as its primary theory, with Ostrom's design principles (Adhikari, 2021; Haryanto et al., 2022; Ostrom, 1990) as an initial analytical instrument for reading the distribution of authority, collective rules, monitoring mechanisms, and social sanctions within *Kebang Lewa Lolon*. Following the critique posed by institutional bricolage (Cleaver, 2002, 2017), however, this study treats *Kebang Lewa Lolon* not as an institution designed by linearly following Ostrom's principles, but as the outcome of bricolage between the long-institutionalized moral value of *Gemohing* and contemporary blue economy governance demands. Accordingly, this study applies institutional bricolage, previously tested largely in water and forest management (Charmakar et al., 2024; Cleaver, 2017) and only recently extended toward marine and blue economy governance elsewhere (Ramadhan et al., 2025; Saunders et al., 2025), to read *Kebang Lewa Lolon* as a case within that still-narrow but growing body of coastal applications, while bridging that perspective with formal CBG literature oriented toward authority and accountability.

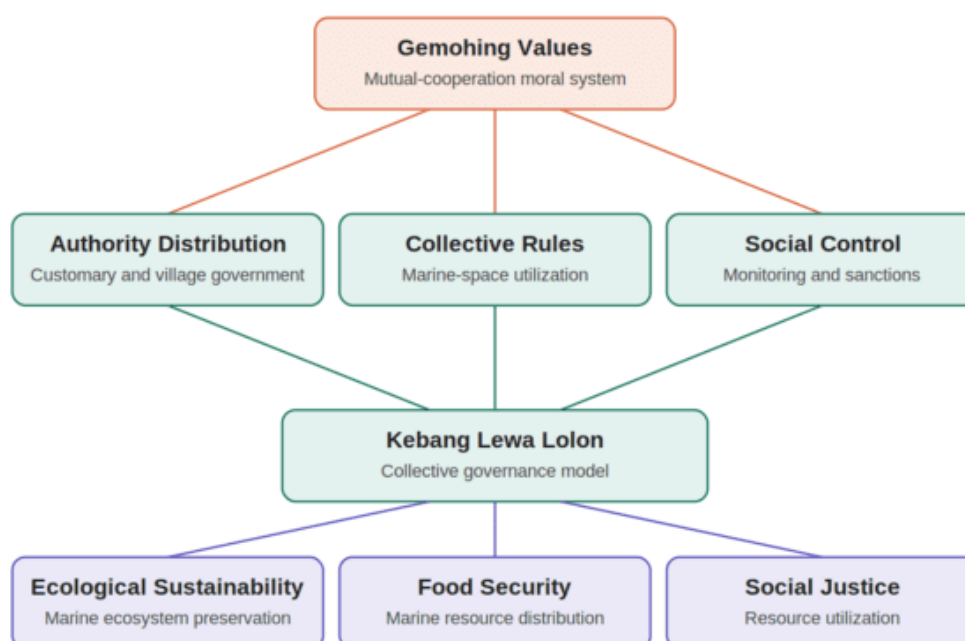


Figure 1. Institutional Bricolage Model of *Kebang Lewa Lolon*

The relationship among these concepts is illustrated in Figure 1, which maps how the value of *Gemohing* is “reassembled” (bricolage) through three institutionalization mechanisms (distribution of authority, collective rules, and social control) into the governance structure of *Kebang Lewa Lolon*, which in turn contributes to three dimensions of the blue economy: ecological sustainability, food security, and social justice in the utilization of coastal resources.

Based on this framework, the study advances an analytical proposition: the practice of *Kebang Lewa Lolon* functions as the outcome of institutional bricolage, in which collective compliance with coastal resource-use rules is shaped through the bricolage of the institutionalized moral value of *Gemohing*, the distribution of authority between customary institutions and the village government, and mechanisms of social control, such that its binding force extends beyond mere procedural agreement and is potentially more resilient to short-term interest pressures than a governance model designed purely according to an administrative blueprint.

Operationalizing Bricolage: From Framework to Analytical Indicator

Operationally, each of the three mechanisms in Figure 1 is read against a specific reference point drawn from Ostrom's design principles, without assuming that *Kebang Lewa Lolon* must conform to their classical administrative form. Authority is examined against the principle of clearly defined boundaries, asking who holds legitimate power to establish, interpret, and enforce marine-zoning rules, and whether that boundary of authority is drawn along customary lines, governmental lines, or both. Collective rules are examined against the principle of collective-choice arrangements, asking how zoning boundaries and resource-use norms were agreed upon, and whether those rules persist as documented regulation, as collectively remembered convention, or as some combination of the two. Social control is examined against the principles of monitoring and graduated sanctions, asking who observes compliance, what triggers a response to a violation, and whether that response takes an administrative or a customary form. Institutional bricolage (Cleaver, 2017) supplies the interpretive move that runs across all three: a departure from Ostrom's classical form, such as a sanction that is ritual rather than itemized, is read not as a deficiency against the model but as evidence of reassembly, in which the *Gemohing* value system supplies the normative material from which authority, rules, and social control are bricoled into their present shape.

3. METHODOLOGY

Research Design

This study employs a qualitative approach with an instrumental case study design (Stake, 1995) to gain an in-depth understanding of the construction and practice of culture-based community-based governance within blue economy implementation. *Kebang Lewa Lolon* is bounded here as an institution, namely the recurring pattern of authority, collective rules, and sanctions that governs marine-zone use in Bubuatagamu Village, rather than as the individual enforcement events that occur within it or the wider set of activities the Tana Ile Boleng Foundation facilitates in the area. This approach was chosen because it focuses on exploring meaning, process, and institutional dynamics that cannot be reduced to measurable variables (Creswell & Poth, 2018), with the case serving instrumentally, in Stake's (1995) sense, as a vehicle for understanding the broader theoretical question of how cultural values become institutionalized within community-based governance, rather than being studied for its own particularities alone. The study is grounded in a constructivist paradigm, which views governance as a social construction that institutionalizes cultural values into collective rules, the distribution of authority, and accountability mechanisms.

Case Selection

This study was conducted in Bubuatagamu Village, South Solor District, East Flores Regency, purposively selected as an instrumental case: *Kebang Lewa Lolon* was chosen not merely for its uniqueness, but because it functions as a representative case for revealing how cultural values are institutionalized into collective governance within a blue economy context, a phenomenon not yet extensively explained in the literature. The case also qualifies as a critical one for the theoretical debate this study engages: because its customary institutional structure remains actively functioning in collective decision-making rather than having been formalized away, it tests the assumption, implicit in much CBG literature, that legitimate collective rules must be designed rather than inherited, and thus provides an adequate empirical context for reconstructing the governance model. The involvement of the Tana Ile Boleng Foundation as a partner, experienced in facilitating local wisdom-based and gender-equitable development in the region, further strengthens the suitability of this case, though it is also acknowledged as a limitation: informants accessed through the foundation's network may have been more favorably disposed toward *Kebang Lewa Lolon* than actors outside that network, a possibility this study could not fully rule out and treats as a direction for future verification.

Data Collection

Data were collected through four techniques, in-depth interviews, participatory observation, documentation, and focus group discussions (FGDs), across two field visits between March and May 2026, focusing on decision-making processes and cultural-value institutionalization. Primary data derived from interviews and field observation; secondary data came from official documents, customary archives, and village policies. A single focus group discussion was held, bringing together key informants and other informants to elaborate and cross-check individual perceptions and perspectives that had emerged from the interviews. Informants were selected purposively based on their roles and direct involvement in coastal governance and their understanding of cultural-value institutionalization, representing customary, village-governmental, and economic actors, as well as underrepresented groups. Details are presented in Table 1.

Table 1. Distribution of Research Informants by Category

No	Informant Category	Role and Relevance to the Study	Number
1	Customary Leaders	Holders of customary authority directly involved in collective decision-making and marine-space regulation; the primary source of understanding of the normative-cultural legitimacy of <i>Gemohing</i>	3 people
2	Village Government	Village Head and officials involved in formulating policy and formal coastal governance, including the authority relationship between the village government and customary institutions	3 people
3	<i>Kebang Lewa Lolon</i> Managers	Actors directly involved in the daily management and operation of the <i>Kebang</i> practice, including the enforcement of collective rules and everyday monitoring mechanisms	3 people
4	Fishers	Primary users of marine resources and the party most directly affected by the collective rules and social sanctions of <i>Kebang Lewa Lolon</i>	6 people
5	Coastal Women	Involved in marine-based economic and social activities; representing the gender-participation dimension of collective governance that is often underrepresented in formal structures	3 people

No	Informant Category	Role and Relevance to the Study	Number
6	Community/Religious Leaders	Influential figures holding socio-moral community legitimacy, playing an important role in reinforcing collective compliance with the norms of <i>Kebang Lewa Lolon</i>	2 people
Total			20 people

Prior to data collection, the researchers obtained informed consent from each informant, explaining the purpose of the research, the right to decline or withdraw, and guaranteeing identity confidentiality for informants requesting anonymity, given the sensitivity of some data relating to customary authority and local power relations. The researchers positioned themselves in a participatory-reflective manner: engaging in social interaction with the community to obtain authentic contextual understanding, while consciously reflecting critically on the potential interpretive bias arising from such closeness, particularly because the principal researcher originates from the same Lamaholot cultural lineage as the research subjects.

Data Analysis

Data were analyzed using thematic-inductive analysis, following Braun & Clarke's (2006) six-phase framework, to reconstruct a conceptual model of community-based governance. Familiarization proceeded through transcription of interviews and field notes; initial coding followed through manual review of the entire corpus to identify initial categories (e.g., authority distribution, collective rules, social sanction mechanisms); these codes were then iteratively searched, reviewed, and defined into the major themes reported in the Findings, through repeated reading and cross-transcript comparison, before being interpreted through the frameworks of community-based governance and institutional bricolage. Coding was performed manually, without qualitative data-analysis software, to preserve the researchers' interpretive proximity to the informants' cultural context and local language. No informant, across any of the six categories in Table 1, questioned or rejected the legitimacy of *Kebang Lewa Lolon*; the analysis therefore did not encounter a negative case within the categories reached. This absence is treated with appropriate caution in the Discussion, since an absence of dissent in the data collected does not by itself establish an absence of dissent in the community more broadly. Because the principal researcher's own Lamaholot cultural lineage, noted above, shaped aspects of coding, familiar customary terms and practices, such as ritual sanction or communal deliberation, risked being coded descriptively rather than interrogated for what made them binding; the analysis addressed this by treating each such term as a category to be explained rather than assumed self-evident, though the risk of taking shared cultural knowledge for granted cannot be fully eliminated by that procedural safeguard alone.

Validity and Reliability

Credibility was strengthened through source triangulation, comparing information across the six informant categories in Table 1 to identify similarities and differences, and method triangulation, testing data consistency across interviews, observation, and documentation. Findings were also validated jointly with partners through a deliberative forum at the study's final stage, in which the reconstructed conceptual model was discussed again with customary leaders, the village government, and the Tana Ile Boleng Foundation, functioning as member checking (Lincoln & Guba, 1985) to ensure the researchers' interpretation aligned with community understanding; the forum confirmed the researchers' existing interpretation rather than prompting a revision. The authors read this as modest support for, rather than proof of,

the model's validity, since a confirming forum convened by the same partners who supplied much of the original data carries some of the same limitation as the case-selection process discussed above. No formal audit trail of methodological decisions was maintained during the research process. The analysis was, however, discussed with colleagues outside the immediate research team prior to finalization, functioning as peer debriefing (Lincoln & Guba, 1985).

Ethical Considerations

This study did not undergo review by a formal institutional ethics committee. Ethical safeguards were instead procedural, following the informed-consent process described above, together with the neutrality the researchers maintained in representing the perspectives of various actors, including underrepresented groups such as coastal women, to ensure findings were not used to any party's detriment.

Methodological Limitations

As a single-case qualitative study, these findings are contextual and cannot be directly generalized to other locations without adaptation. Reliance on purposive informants also carries potential interpretive bias, minimized through triangulation and joint validation with partners. The researchers' cultural proximity to the subjects, while enriching contextual understanding, required continuous reflection throughout the process to keep that same bias in check. This study is, in addition, temporally bounded: data were gathered at a single point in time (March-May 2026), yet institutional bricolage is fundamentally a processual concept, describing institutions as continuously assembled and adapted rather than fixed. The findings presented here should therefore be read as a snapshot of *Kebang Lewa Lolon's* current configuration rather than as a trajectory of how that configuration has changed, or will continue to change, over time. The fieldwork itself was also relatively brief, two visits within this window rather than extended or repeated immersion, which somewhat limits the depth of contextual familiarity that longer engagement typically affords, though this was partly offset by the researchers' prior cultural proximity to the Lamaholot context. Further research employing a multi-site comparative design, or a longitudinal return to this same site, could strengthen the model's generalizability and its account of change over time.

4. RESULTS

Cultural Reframing: From MPA to *Kebang Lewa Lolon*

According to accounts from Customary Leaders and *Kebang Lewa Lolon* Managers, the idea originated in 2018 under the initial name "Village Fish Barn," conceived to protect the Walasea marine waters of Lebao Village (East Solor) and Bubuatagamu Village (South Solor). The initiator reported experiencing a "deadlock" in translating the technical concept of a Marine Protected Area (MPA) so that it could be understood by traditional fishers, and the term was therefore replaced with a more familiar local name. Initial implementation in Lebao Village (2016–2018) received insufficient response from local government, prompting the initiative to shift to Bubuatagamu Village, where it was formally launched under the name *Kebang Lewa Lolon* in 2021, coinciding with the issuance of a 2021 Ministry of Marine Affairs and Fisheries Decree on the management of marine areas based on local wisdom.

According to informants, this concept adapts the philosophy of the *kebang*, or land-based food barn, of the Lamaholot community, which consists of three parts: *Kebang Keniki* (provisions that may not be taken before the following year's planting season), *Mele Neki* (produce that may be taken but not daily), and *Mele Wana* (produce that may be consumed daily or sold). This philosophical value is reflected even in its naming: "*Kebang Lewa Lolon*" means *kebang* (food barn) above (*lolon*) the sea (*lewa*). These three parts are translated directly

into three marine zones: *Kebang Keniki* becomes the Core Zone (prohibited from any fishing activity, serving as a center for biota reproduction and coral preservation; according to informants, covering 5 hectares and located 50 meters from the highest tide line), *Mele Neki* becomes the Buffer Zone, and *Mele Wana* becomes the Utilization Zone (freely accessible using environmentally friendly, customarily sanctioned methods). The boundaries of these zones were established through a customary ritual using *nawing*, *neak*, and *tuak/arak* (palm wine), beginning at the house of the Land Lord, with legitimacy conferred by local customary leaders known as *Koten*, *Kelen Hurit*, and *Maran*.

Figure 3 presents the Map of the *Kebang Lewa Lolon* Local Wisdom Area in South Solor District (scale 1:10,000, Map Sheet Number 2307-41), approved by the Head of the Branch Office of the East Nusa Tenggara Provincial Marine and Fisheries Service and signed by the respective Village Heads and Land Lords.

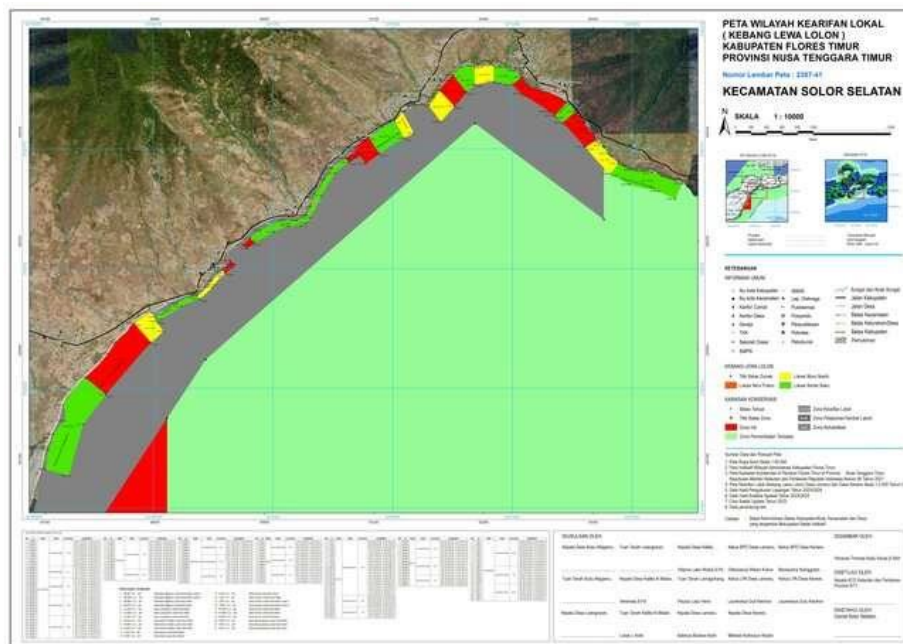


Figure 2. Map of the *Kebang Lewa Lolon* Area, South Solor

This map shows that zoning extent varies across locations along the South Solor coastline, with Core Zones (red) distributed across several separate points rather than forming a single contiguous area, surrounded by far larger Rehabilitation Zones (grey) and Limited Utilization Zones (light green).

Data note: the map legend lists the local terms *Muro Nadin*, *Ne'a Puken*, and *Keniki Baku*, as well as the zoning term Rehabilitation Zone, which differ from the terms *Mele Neki/Mele Wana* conveyed by informants and from the terms *mele wana/mele neki* reported by Tatu Sius et al. (2024). The convergence of two independent sources, this study's informants and Tatu Sius et al.'s (2024) fieldwork, on *Mele Neki/Mele Wana*, against the map legend's distinct terminology, suggests the legend reflects a more technical or administrative naming layer introduced during the official mapping and approval process, rather than the vocabulary the community actually uses and remembers day to day. This discrepancy is not, therefore, a minor labeling issue: it is itself evidence of how the rules' documentary form remains provisional relative to their oral, collectively held form, a pattern examined further below.

Institutionalizing *Gemohing*: Authority, Rules, and Sanctions

Institutionally, *Gemohing*, the Lamaholot value of mutual cooperation, shared responsibility, and balance between human activity and nature introduced in the Introduction, does not appear in the data as a named doctrine that informants invoke directly. It appears instead as the value actually enacted through the *kebang*: through the collective, ritual establishment of zone boundaries; through rule-making conducted jointly by customary leaders, fishers, and women rather than by any single authority; and through a system of social control that binds by shared conviction rather than by written sanction. The three findings that follow, on authority, on collective rules, and on social control, are read in this light: as the empirical shape *Gemohing* takes once translated from a land-based moral repertoire into a marine governance context.

Distribution of Authority between Customary Institutions and the Village Government

According to a Customary Leader, *Kebang Lewa Lolon* managers are “chosen and appointed by customary leaders and the village government to manage and oversee the *kebang*.” In Bubuatagamu, this group is known as Laskar Bahari “Hari Botan” (“Maritime Guard”), whose membership was formally established through Village Head Decree No. 8 of 2022 (Tatu Sius et al., 2024); a similar structure is found in Lewogaran Village under the fisher group name Geroda Hoda Watan Peni, established through Village Head Decree No. 13 of 2022 (Tatu Sius et al., 2024).

Regarding the division of authority, informants stated that “decision-making specifically concerning sanctions for violators rests entirely with the customary leaders.” The village government's role is to facilitate this through budgeting for the drafting of Village Regulation No. 1 of 2025 on the Management of the *Kebang Lewa Lolon* Area. When asked further about the ideal division of authority going forward, informants noted that “there is no sharply defined role distinction,” as the division of tasks has occurred organically: “the village drafts the regulation on governance, while the customary institution focuses on violations.” Both Customary Leaders and the Village Government consistently stated that “so far there has been no difference of opinion, because both parties are equally committed to preserving the fisheries and marine area.”

Collective Rules on Marine-Space Utilization

According to managers and fishers, the applicable rules include a prohibition on the use of tuba (fish poison), a prohibition on breaking coral rock while fishing, and a prohibition on collecting beach materials outside designated locations. These rules were formulated in 2021 through a “semi-workshop” forum involving customary leaders, fishers, and women. Regarding the status of the rules, informants explained that “initially the zoning map was printed on a banner and placed along the shore, but due to weather conditions, the banner did not last and was eventually damaged”, since then, zoning boundaries have been maintained through collective community understanding without a permanent written medium.

Compliance among local fishers is reported to be high: “there was once a fisher who violated the rules, but after being given proper guidance, that fisher became compliant.” Informants' concerns are instead directed toward “fishers from outside the area who might violate the agreed zoning rules.” The rules are considered to remain relevant, “and indeed need to be strengthened to prevent fish-bombing practices,” with the Foundation reportedly “working to acquire drones and planning to train young managers” to monitor the area more closely.

Data note: informants stated that the Buffer Zone is opened every February for catching Nale fish, whereas Tatu Sius et al. (2024) reported that the equivalent zone (their *mele wana*) is closed for approximately three years for habitat recovery. Read together with the cultural

significance of the annual Nale harvest in the Lamaholot calendar, the more plausible reading is that these describe two different things rather than a contradiction: a narrow, ritually specific opening for Nale fishing each February, nested within a longer multi-year closure that governs broader access and habitat recovery. This distinction, between a bounded ritual exception and the general access rule, should be stated explicitly rather than left as an open discrepancy.

Social Control and Sanction Mechanisms

When asked about the form of sanctions for violators, informants did not provide an administrative list, but instead explained that the process of establishing the zones uses customary ritual, so that anyone who violates it may be subject to customary sanction or curse. Authority to reprimand violations rests with customary leaders and the village government; however, at the time of the interviews, informants confirmed no cases of violation had occurred within the Core Zone. Compared with formal sanctions, informants judged that “customary sanctions are more binding, on the direct grounds that the process of zone establishment employed customary ritual.” Within a group forum, informants even described the rules as very strict and no one dares to defy them.

Read as a mechanism of social accountability, this arrangement is best described as robust in practice but structurally fragile. It is robust in the sense that the one documented violation was resolved informally, through guidance from customary leaders, and did not recur; informants report no violations at all within the Core Zone. It is fragile in the sense that its binding force depends entirely on the rules being commonly remembered rather than consultable in a fixed document, so a dispute over what the rule actually says, rather than whether it was broken, has no independent record to settle it. The system has so far been tested only by ordinary, resolvable infractions; it has not been tested by a contested case, one where two parties disagree about what the rule requires, which is precisely the situation a written record is designed to withstand.

Mapping Blue Economy Principles and Community-Based Governance

Table 3 makes explicit what the findings above establish implicitly: how each empirical practice within *Kebang Lewa Lolon* reflects a specific principle from Ostrom's community-based governance framework and a specific dimension of the blue economy, read through the bricolage lens established in the Literature Review.

Table 2. Mapping of Blue Economy and Community-Based Governance Principles

Principle	Domain	How <i>Kebang Lewa Lolon</i> Reflects It
Clearly defined boundaries	CBG (Ostrom)	Core, Buffer, and Utilization Zones physically mapped and ritually established (Figure 3)
Collective-choice arrangements	CBG (Ostrom)	Rules formulated through a 2021 “semi-workshop” forum involving customary leaders, fishers, and women
Monitoring	CBG (Ostrom)	Laskar Bahari “Hari Botan” holds formal monitoring responsibility (Village Head Decree No. 8/2022); drone monitoring planned
Graduated sanctions	CBG (Ostrom), reflected partially	Sanctions are customary/ritual rather than itemized; the one documented violation was resolved through guidance rather than escalating penalty
Ecological sustainability	Blue economy	Informant-reported coral and seagrass recovery in previously damaged areas

Principle	Domain	How <i>Kebang Lewa Lolon</i> Reflects It
Food security	Blue economy	Core Zone functions as a marine equivalent of the <i>kebang keniki</i> , restricting use to sustain future supply
Economic benefit	Blue economy	Daily income reported rising from IDR 10,000–30,000 (2016) to IDR 200,000–250,000 (2025), corroborated by Tatu Sius et al. (2024)
Social justice / equity	Blue economy, reflected conditionally	Women involved from zone design through post-harvest economic activity, but conditional on external facilitation rather than customary structure alone (see 2.2)

4.4 Direct Pathway: Cultural Institutionalization-Sustainability and Food Security

Ecological sustainability and food security in *Kebang Lewa Lolon* follow directly from cultural institutionalization, without requiring an additional facilitating condition. Food security here is achieved not through increased production, but through the re-institutionalization of the *kebang*'s original function as a land-based food-security instrument transposed into the marine domain: the Core Zone, functioning as an untouched biota reserve, is structurally equivalent to the *kebang keniki*, which stores forbidden provisions until the next harvest season. Ecological sustainability follows the same direct pathway: informants reported coral and seagrass recovery in areas previously described as “like an asphalt mound” from prior bombing, alongside a daily income trend rising as shown in Table 2, independently corroborated by (Tatu Sius et al., 2024). Both outcomes track directly from the same act of cultural translation described in 1.2, without an identifiable intervening actor or condition.

Table 3. Changes in Daily Community Income, 2016–2025

Year	Interview Data (IDR/day)	Sius et al. 2024 (IDR/day)
2016	10,000 – 30,000	–
2018	40,000 – 50,000	–
2019	60,000 – 75,000	50,000 – 75,000
2020–2021	–	75,000 – 150,000
2023	–	200,000 – 250,000
2025	200,000 – 250,000	–

Both sources, although independently collected, show a converging upward trend around IDR 200,000–250,000 per day, mutually reinforcing the validity of the data through source triangulation.

4.5 Conditional Pathway: The Moderating Role of Facilitating Actors-Social Justice

Social justice, by contrast, does not follow the same direct pathway. A female informant explained that “if the husband is involved as a fisher, then the wife will certainly be involved as a manager as well,” citing concrete examples of women's involvement “up to the stage of drafting the *kebang* location sketch,” as well as involvement in drafting the SOP and in the formulation of the Village *Kebang* Regulation from an early stage. Informants attributed the attention given to women's voices in part to a factor external to the customary structure itself: the fact that “the NGO driving this program is also headed by a woman, Ibu Vero Lamahoda, so women's roles are indeed given considerable attention.” Economically, women are involved in processing and are typically “the ones who sell the marine catch at market,” although

informants acknowledged “there is no modern marketing system” supporting this activity (Kleiber et al., 2015; Harper et al., 2020). Read together, these findings indicate that social justice outcomes in this case were moderated by the presence of a facilitating actor positioned to advance women's interests within the governance process, rather than arising from the customary institution on its own, a conditional pattern developed further in 2.3 and 2.4.

4.6 Multilevel Model

Findings of rising daily income together with the recovery of the coral reef ecosystem provide preliminary indications consistent with two sides of the conceptual model in Figure 1, yet the third side, social justice, requires a minor revision of that model. The women's participation identified was not purely rooted in the customary structure of the Kebang itself, but was also supported by an external factor: women's leadership within the facilitating institution. Accordingly, the model that can be formulated is not a single, uniform model across all three dimensions of the blue economy, but rather a tiered model, as depicted in Figure 2:

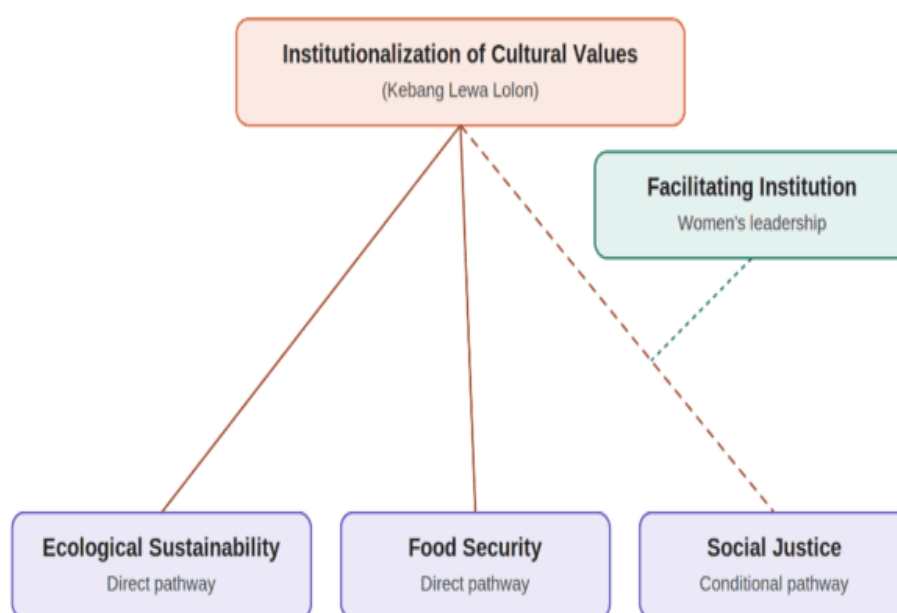


Figure 3. Revised Model: The Moderating Variable on the Pathway to Social Justice

Ecological sustainability and food security are achieved through a direct pathway of cultural institutionalization, whereas social justice is achieved through a conditional pathway moderated by the presence of a facilitating actor. The implication is that replicating this model in other villages cannot assume that social-justice outcomes will automatically follow ecological and food-related success, unless an equivalent facilitation condition is also replicated.

4.7 Model Components and Propositions

Formally, the model comprises three components: (1) cultural institutionalization, operationalized as the presence of a pre-existing, trusted local value system into which resource governance can be assembled; (2) a facilitating actor, operationalized as an external or semi-external institution capable of advancing underrepresented interests, in this case women's participation, within the governance process; and (3) three outcome dimensions, ecological sustainability, food security, and social justice, each following a distinct pathway from the first two components. From this structure, the study advances two testable propositions for future replication. Proposition 1: where a trusted local cultural repertoire exists and is deliberately mapped onto a new governance domain, ecological sustainability and food security outcomes

will follow directly, without requiring a dedicated facilitating actor. Proposition 2: social justice outcomes, by contrast, will not follow from cultural institutionalization alone, and require an identifiable facilitating actor with the standing to advance underrepresented interests within the governance process. A site that replicates the first component without the second would, on this model, be expected to show ecological and food-security gains without a matching gain in social justice, a comparison future multi-site research could test directly.

5. DISCUSSION

Reading *Kebang Lewa Lolon* through Institutional Bricolage

The Results answered both research questions directly. This section instead asks why *Kebang Lewa Lolon* takes the institutional shape it does, reading the findings through institutional bricolage (Cleaver, 2017).

On the dimension of authority, the distribution of power between customary institutions and the village government within *Kebang Lewa Lolon* did not emerge from a single administrative design process, but rather from the bricolage between the land-based food-barn structure long known to the Lamaholot community and the entirely new requirements of marine-space governance. The mapping of the three components of the land-based *kebang* onto three marine zones is empirical evidence of this process, and also explains why the project's initial effort failed while still framed in technocratic terminology, succeeding only once reframed through the vocabulary of the *kebang*, a pattern that confirms Cleaver (2017) core argument that the effectiveness of common-resource governance institutions is determined by the depth of their embeddedness in a trusted socio-cultural repertoire, rather than by the clarity of their technical design alone.

On the dimension of collective rules, the formulation process proved dynamic and unfinished, rather than a final product formulated once and settled. The 2021 “semi-workshop” forum produced rules that were substantively simple, yet their storage medium ultimately failed to endure: the physical banner was damaged by weather, so the rules now rest entirely on collective memory without a written backup. This vulnerability has not been captured by conventional CBG literature, which generally assumes formal rules are stably documented (Adhikari, 2021; Nogueira et al., 2021), yet it is coherent within the lens of institutional bricolage: because the rules are assembled from the community's living memory rather than from documents, their durability depends on oral transmission across generations rather than on archives.

On the dimension of social control, Ostrom's graduated-sanctions principle, which assumes a measurable administrative mechanism (DeCaro et al., 2024; Shin, 2022), does not fully apply here: compliance instead rests on customary consequences that are not administratively itemized, yet are believed binding because zone boundaries were established through ritual. Institutional bricolage explains this anomaly as part of the same pattern observed in authority and rules: sanctions are assembled from the available ritual repertoire rather than designed as a new instrument, consistent with prior findings on *Bau Lolon* within the same cultural lineage (Lamawuran et al., 2026) and indicating a broader Lamaholot pattern of responding to formal-sanction limitations.

The food-security pathway identified in the Results also carries a distinct theoretical logic: that food security here is achieved through deliberate restriction rather than expanded production stands in direct tension with the technocratic blue economy critiqued in the Introduction, which tends to pursue short-term catch increases. The pattern is best described as a productive paradox, security through restraint, that can only be understood once the core zone is read as a cultural institution rather than merely a technical conservation instrument.

This reading should not be taken uncritically. Institutional bricolage is not inherently benign: it has also been shown to entrench existing hierarchies, converting a community's own customary authority into a vehicle for elite or institutional capture rather than genuine collective governance, in Bersaglio & Cleaver's (2018) account of a “green grab by bricolage” among Kenyan community conservancies. Read through the power typology Saunders et al. (2025) apply to marine bricolage cases elsewhere, distinguishing visible power (contests fought openly), hidden power (whose interests never reach the table), and invisible power (norms so internalized that disagreement is not even considered), the present findings sit uneasily with an unexamined assumption of harmony. No excluded outside fishers were interviewed, and no informant reported feeling silenced, but an absence of visible conflict in the interview data is not evidence against hidden or invisible power: it is equally consistent with genuine consensus and with a setting in which questioning customary authority was simply not an available thing to say to researchers introduced through the customary and foundation networks described in the Methodology. This study's design, access mediated by customary leaders and the facilitating foundation, was not built to distinguish between these possibilities, and that is acknowledged here as a limit on what the findings can claim about power rather than a gap the data happen to leave open. Positioned against this literature, and against Ramadhan et al.'s (2025) parallel effort to extend institutional bricolage into blue economy governance in Indonesia specifically, this study's own contribution is more modest than “extending institutional bricolage into a new domain”: it is closer to an additional, culturally specific account within a domain other studies have already begun to open.

Scope, Contribution, and Practical Implications

This apparent Lamaholot pattern, however, must be qualified at two levels: it remains untested across cultures, since communities lacking a comparable ritual repertoire may not replicate an equivalent binding force, as cautioned by blue economy studies elsewhere showing fisher marginalization from the absence of an equivalent local legitimacy mechanism (Hampton & Jeyacheya, 2020), and it remains untested by an actual violation within the Core Zone specifically, so its effectiveness stays preventive-potential rather than demonstrated.

The three contributions proposed in the Introduction find their evidentiary basis in the findings above. The culture-based governance perspective is not merely a normative proposition but a mechanism empirically identifiable through the Lebao-Bubuatagamu failure-and-success trajectory; the transformation of local moral values into authority, rules, and accountability mechanisms is documented in 1.2 and 2.1–2.2; and the bridging of blue economy and CBG literatures runs through the analysis as a whole, tempered by the more modest positioning relative to Saunders et al. (2025) and Ramadhan et al. (2025) noted above.

Practically, the East Flores Regency Government and future researchers seeking to replicate this model in other coastal villages in South Solor or East Solor District are advised not to copy the Kebang zoning structure literally, but to first map the local cultural-institutional repertoire as a basis for design, while ensuring equivalent facilitation is available where social-justice outcomes are an explicit target. For the Tana Ile Boleng Foundation and the Bubuatagamu village government, the vulnerability of rules that rest solely on collective memory without a durable written backup constitutes a sustainability risk that requires immediate attention. Beyond East Flores, the same logic speaks to a broader Global South condition: blue economy programs across small island and archipelagic states often arrive with standardized technocratic templates, MPA zoning among them, that assume communities have no pre-existing governance capacity to build on. Where a trusted cultural-institutional repertoire already exists, as it evidently does across the Lamaholot region, treating it as a design resource rather than an obstacle is likely to cost less and legitimate more than introducing an

external framework, though this claim, like the model itself, awaits testing beyond a single village.

6. CONCLUSION

This study demonstrates that *Kebang Lewa Lolon* in Bubuatagamu Village is not merely a local wisdom-based marine zoning practice, but the outcome of a deliberate bricolage translating the philosophy of the Lamaholot land-based food barn into three equivalent marine zones. The project's initial failure under technocratic Marine Protected Area terminology, and its success once reframed through the community-familiar vocabulary of the *kebang*, is empirical evidence that coastal governance legitimacy derives not from administrative design clarity, but from embeddedness in an already-trusted cultural repertoire. Authority is divided between customary leaders (holding full sanctioning authority) and the village government (facilitating regulation through Village Regulation No. 1 of 2025); collective rules were formulated participatorily yet remain vulnerable, resting on collective memory without a permanent documentary backup; and compliance rests on customary consequences believed binding, rather than itemized administrative sanctions. Both research questions are thus answered: *Kebang Lewa Lolon's* implementation reflects the blue economy and CBG through a bricolage-based institutionalization of *Gemohing* values rather than technocratic design; and the resulting CBG model is not uniform but tiered, ecological sustainability and food security follow a direct pathway of cultural institutionalization, while social justice follows a conditional pathway moderated by a facilitating actor.

Theoretically, this study fulfills the three contributions proposed in the Introduction: extending blue economy literature with a culture-based governance perspective; enriching CBG literature by showing how local moral values transform into authority, rules, and accountability mechanisms; and bridging these previously separate literatures through institutional bricolage. Empirically, it produces a field-revised conceptual model of local wisdom-based coastal governance.

This study carries several limitations. First, as a single qualitative case, findings are contextual and not directly generalizable without an equivalent bricolage process elsewhere. Second, income data derive from informant estimates rather than systematic records, so economic-contribution claims remain indicative rather than rigorously causal. Third, the customary sanction mechanism has never been tested by an actual violation, so its effectiveness remains preventive-potential. Fourth, the differing local terminological and zoning variants identified across interview data, prior literature, and official map documentation are interpreted here as reflecting different registers and a nested ritual-versus-general-access distinction respectively, a reading consistent with the evidence available but not confirmed through direct field verification of either discrepancy. Fifth, institutional bricolage as an analytical lens has its own blind spot: it is well suited to explaining how local authority and rules are assembled, but it can overlook broader power structures, the state, the market, and global economic forces, that also shape what is possible within a seemingly self-contained customary institution; this study has not systematically examined how national blue economy policy, provincial fisheries administration, or market prices for marine products bear on *Kebang Lewa Lolon's* own trajectory.

Further research should pursue three directions: multi-site comparison testing whether similar bricolage can occur in communities lacking an equally strong ritual repertoire; longitudinal monitoring of the sanction mechanism once genuinely tested by a violation; and field verification of local terminology and zoning boundaries with customary leaders and sub-district authorities.

This case suggests that Indonesia's national blue economy agenda has something to gain from engaging the cultural repertoires that have long sustained the balance between people and the sea across its islands, rather than relying on top-down technocratic design alone. *Kembang Lewa Lolon* itself offers only one village's evidence for that claim, but within that scope, the pattern was clear: the most resilient rule was not the most administratively sophisticated one, but the one most recognized by the people who had to carry it out every day.

Author Contribution

Conceptualization and research design, Y.D.L.; data collection, Y.D.L.; institutional and Conceptualization and research design, Y.D.L.; data collection, Y.D.L.; institutional and economic analysis, M.A.L.A.; legal and regulatory analysis, F.N.L.; ecological and technical validation, A.S.T.; writing-original draft preparation and editing, Y.D.L.; policy recommendation formulation, M.A.L.A., F.N.L.; supervision, Y.D.L.; project administration, Y.D.L. All authors have read and approved the published version of this manuscript.

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Data Availability Statement

All data supporting the findings of this study were obtained through in-depth interviews, field observations, and documentation conducted in Bubuatagamu Village, South Solor District, East Flores Regency, between March and May 2026. Given that this data contains sensitive personal and cultural information, access to interview transcripts and field notes is restricted in order to protect the confidentiality of informants and the values of the local community. Nevertheless, the authors can provide data summaries, anonymized interview excerpts, and research instrument guidelines to other researchers upon reasonable request. Data access requests may be submitted to the corresponding author via official institutional email.

Declaration of Generative AI and AI-Assisted Technologies

The authors also disclose the use of an AI language assistant (Claude, Anthropic) to support the revision of this manuscript in response to reviewer feedback; the AI was not used to generate, analyze, or interpret research data, and all analytical claims and conclusions remain the authors' own.

Conflict of Interest Declaration

The authors declare that there is no conflict of interest with any party in this study. Some of the research data was obtained through collaboration with the Tana Ile Boleng Foundation and the Bubuatagamu Village Government as partners and sources of field data. However, these parties were not involved in the process of analysis, interpretation, or the formulation of this study's conclusions. The authors affirm that all analyses were conducted independently in order to preserve academic objectivity and scientific integrity.

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