

# *Revitalisation of Panglima Laot Local Wisdom in Acehese Coastal Communities as a Cultural and Historical System*

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**Abstract**– Panglima Laot is a traditional institution that has long regulated the life of coastal communities in Aceh. This study aims to analyse Panglima Laot as a historical and cultural system and its relevance in contemporary coastal society. This research uses a qualitative approach with case studies in three lhok areas through interviews, observation, and documentation. The results show that Panglima Laot is not merely a fisheries management institution but also a cultural system that regulates human relations with the sea, social order, and ecological balance. Historically, this institution has undergone transformation from a traditional system to formal recognition without losing its social legitimacy. In cultural perspective, practices such as fishing taboos, rituals, and conflict resolution reflect local knowledge systems that support sustainability. This study concludes that revitalising Panglima Laot strengthens cultural identity and supports sustainable coastal life.

**Keywords:** local wisdom, Panglima Laot, social-ecological system, coastal governance, cultural sustainability.

## 1. Introduction

Local wisdom represents a system of knowledge developed through long-term interactions between human communities and their natural and social environments. It is transmitted across generations through values, norms, and cultural practices. In coastal communities, local wisdom functions not only as an adaptive mechanism for responding to the dynamic nature of marine environments but also as a social system that regulates relationships among individuals and communities (Berkes, 2018; UNESCO, 2017). The accumulation of local knowledge embedded in coastal practices has been shown to foster adaptive, context-specific, and sustainable resource management systems (Partelow et al., 2020; Bennett et al., 2019).

Over the past several decades, global fisheries management has faced increasingly complex challenges, including overfishing, marine ecosystem degradation, and the impacts of climate change on fishery productivity. Recent reports indicate that a substantial proportion of the world's fish stocks are under significant pressure due to unsustainable harvesting practices (FAO, 2020). These conditions have contributed not only to resource depletion but also to growing conflicts over resource use in coastal regions. At the same time, top-down fisheries management approaches often struggle to address local social-ecological complexities because they frequently overlook the social, cultural, and institutional contexts of local communities (Jentoft, 2005; d'Armengol et al., 2018).

With the growing prominence of social-ecological systems research, increasing attention has been directed toward the role of local wisdom in natural resource management. This perspective emphasizes that resource sustainability is determined not only by ecological factors but also by the interactions among people, institutions, and the environment within a dynamic system (Berkes, 2018; Partelow, 2018). Recent studies suggest that community-based management approaches that incorporate local

knowledge tend to be more adaptive and effective in maintaining resource sustainability than conventional technocratic approaches (Gutiérrez et al., 2011; Bennett et al., 2019). Furthermore, integrating local and scientific knowledge can contribute to the development of more inclusive and sustainable management frameworks (d'Armengol et al., 2018; Partelow et al., 2020).

In Indonesia, local wisdom has long constituted an integral component of natural resource management, particularly in coastal areas. Numerous studies have demonstrated that customary institutions such as *sasi* in Maluku, *awig-awig* in Bali, and *Panglima Laot* in Aceh play significant roles in regulating resource utilization while maintaining ecological and social balance (Satria & Matsuda, 2021; Ruddle & Hickey, 2020). These institutions function not only as technical management mechanisms but also as expressions of cultural values that shape community behavior in relation to the environment.

*Panglima Laot* is one of the most enduring forms of local wisdom in Aceh and continues to function effectively today. This institution holds authority over fisheries-related activities, mediates conflicts among fishers, and maintains social order within coastal communities. Its continued existence demonstrates that Acehnese coastal communities have developed a historically rooted community-based management system with strong social legitimacy. Nevertheless, most academic studies have examined *Panglima Laot* primarily from a fisheries management perspective, leaving its historical and cultural dimensions relatively underexplored.

From a socio-cultural perspective, *Panglima Laot* serves not only as a resource management institution but also as a value system that regulates relationships among humans, nature, and spiritual beliefs. Practices such as fishing prohibitions on specific days, customary rituals, and traditional conflict-resolution mechanisms reflect a local knowledge system deeply integrated with cultural values and community beliefs. From the perspective of cultural anthropology, these practices can be understood as symbolic systems that reinforce social cohesion and the collective identity of coastal communities (Geertz, 1973; Clifton et al., 2019).

At the same time, modernization, globalization, and shifting economic orientations within coastal societies pose challenges to the continuity of local wisdom. Advances in fishing technology, increasing economic demands, and the implementation of formal policies that may not align with local values have the potential to weaken the functions of customary institutions. Recent research indicates that although local wisdom possesses considerable potential for resource management, its implementation often faces challenges related to integration with formal governance structures and rapid social change (Berkes, 2018; Partelow et al., 2020).

These circumstances reveal a gap between formal, technocratic management approaches and culturally grounded, community-based local wisdom systems. This gap underscores the importance of adopting a more integrative approach to understanding coastal resource governance—one that considers not only ecological dimensions but also social, cultural, and historical factors.

Drawing upon contemporary coastal governance literature, the success of coastal resource management is increasingly associated with the capacity of local communities to develop adaptive responses to environmental and economic pressures. Recent studies indicate that community-based customary institutions often demonstrate greater capacity to foster social-ecological resilience than highly centralized governance systems (Armitage et al., 2020; Bennett et al., 2021). Moreover, local ecological knowledge is increasingly recognized as a critical component in supporting more inclusive and participatory marine conservation policies (IPBES, 2022; McMillen et al., 2020).

Based on these considerations, this article aims to examine *Panglima Laot* from historical and cultural perspectives and to analyze its role as a social-ecological system within Acehnese coastal communities. This study is expected to contribute to the growing body of literature on local wisdom and provide insights for developing more contextual, adaptive, and sustainable resource management models.

## 2. Research Methode

This study employed a qualitative approach with an ethnographic orientation to explore the cultural meanings embedded within the Panglima Laot institution. A qualitative approach was selected because the study seeks to examine social phenomena, values, and cultural practices that cannot be adequately measured through quantitative methods but must instead be understood within their social and cultural contexts (Miles & Huberman, 2014).

The research was conducted in three lhok (traditional fishing territories) in Aceh, which were purposively selected based on differences in ecological conditions, fisheries activities, and the institutional dynamics of Panglima Laot. These variations were considered important for capturing the diversity of local practices and institutional arrangements found across coastal communities.

Data were collected through in-depth interviews, participant observation, and document analysis. Interviews were conducted with Panglima Laot leaders, fishers, and community leaders to explore their perspectives on customary regulations, cultural practices, and the institutional roles of Panglima Laot. Participant observation enabled direct observation of adat laot (customary marine practices), including fishing activities, traditional rituals, and conflict-resolution mechanisms. Document analysis was used to complement field data through the examination of written documents, customary regulations, and relevant scholarly literature.

Data were analyzed using a thematic analysis approach following the stages of data reduction, data display, and conclusion drawing as proposed by Miles and Huberman (2014). The analysis focused on identifying patterns related to the historical development, cultural values, and institutional functions of Panglima Laot. To ensure data validity and trustworthiness, source and methodological triangulation were employed by comparing information obtained from multiple informants and different data collection techniques. This methodological approach facilitated a comprehensive understanding of Panglima Laot not merely as a fisheries management institution but as a living socio-cultural system embedded in the everyday lives of Acehese coastal communities.

## 3. Result and Discussions

### Characteristics of the Research Sites

To understand the cultural and institutional diversity of Panglima Laot, data were collected from three lhok (traditional fishing territories) in Aceh, namely Lhok Pulo Nasi, Lhok Langsa, and Lhok Krueng Aceh. These sites were purposively selected to represent different ecological conditions, fisheries activities, and institutional dynamics within Acehese coastal communities.

#### 1. Lhok Pulo Nasi

Lhok Pulo Nasi is inhabited by approximately 1,500 fishers living within the administrative area of Aceh Besar Regency. The area constitutes one of the region's important fishing centers, supporting the livelihoods of around 548 fishing households. Most fishing vessels operating in this area are small-scale boats with capacities below 5 GT, managed by traditional fishers. The fishing grounds of Lhok Pulo Nasi are predominantly characterized by coral reef ecosystems and rocky coastal habitats, which influence local fishing practices and resource utilization patterns.

#### 2. Lhok Langsa

Lhok Langsa is home to approximately 5,052 fishers engaged in both marine and inland fisheries activities. The fishing fleet in this area consists of around 706 fishing vessels distributed across several coastal villages, including Langsa Timur, Langsa Barat, Langsa Kota, and Langsa Baro. Ecologically, Lhok Langsa is characterized by extensive mangrove ecosystems that provide important nursery and feeding grounds for aquatic species. These environmental conditions make the area particularly suitable for harvesting shrimp, crabs, and other mangrove-associated fisheries resources.

#### 3. Lhok Krueng Aceh

Located within Banda Aceh and the estuarine area of the Krueng Aceh River, Lhok Krueng Aceh supports

approximately 4,375 fishers. The fishing fleet consists of several hundred vessels, predominantly small-scale boats operating within the WPP-RI 571 fisheries management area. In contrast to the other study sites, Lhok Krueng Aceh serves as a base for relatively larger and more modern fishing vessels, ranging from 10 to 60 GT. Fishers operating from this area frequently conduct offshore fishing activities targeting pelagic species, including tuna, mackerel, and tongkol (frigate tuna).

**Tabel 1. Data Nelayan, Kapal, Zona, dan Alat Tangkap**

Wilayah / Lokasi	Jumlah Nelayan (Jiwa)	Jumlah Kapal (Unit)	Zona Penangkapan & Wilayah WPP	Alat Tangkap Dominan
Lhok Pulau Nasi (Kab. Aceh Besar)	± 1.500	548	WPP-RI 572 (Samudera Hindia) • Zona Tradisional: 0 – 3 mil laut dari pantai.	<ul style="list-style-type: none"> <li>• Pancing Ulur (<i>hand line</i>)</li> <li>• Jaring insang (<i>gill net</i>)</li> <li>• Casting/Popping (karang)</li> </ul>
Kota Langsa (Pesisir Timur)	5.052	706	WPP-RI 571 (Selat Malaka) • Zona Pantai & Mangrove: 0 – 12 mil laut.	<ul style="list-style-type: none"> <li>• Jaring insang (<i>gill net</i>)</li> <li>• Bubu (perangkap kepiting/rawa)</li> <li>• Pancing rawai (<i>long line</i>)</li> </ul>
Krueng Aceh / Lampulo (Kota Banda Aceh)	4.375	563	WPP-RI 571 & 572 (Selat Malaka & Selat Benggala) • Zona Lepas Pantai: > 12 mil laut (hingga Samudera Hindia).	<ul style="list-style-type: none"> <li>• Pukat cincin (<i>purse seine</i>)</li> <li>• Bagan apung</li> <li>• Pancing ulur tuna (<i>deep sea</i>)</li> </ul>

Sumber : dioalah dari berbagai sumber

### Fishing Prohibitions and Traditional Maritime Taboos

Fishing prohibitions and maritime taboos in Aceh are governed through Hukum Adat Laot (Customary Maritime Law) under the authority of the Panglima Laot institution at the lhok level. Customary sanctions for violations are relatively uniform throughout Aceh and are strictly enforced. Offenders may face the temporary detention of their fishing vessels for three to seven days, while all catches obtained through prohibited activities may be confiscated and transferred to the customary institution.

Although a general framework of customary maritime law applies across Aceh, each lhok demonstrates distinctive characteristics in the implementation of regulations, environmental protection measures, and locally specific maritime taboos.

#### 1. Lhok Pulo Nasi

As an island community characterized by sensitive coral reef ecosystems and predominantly small-scale traditional fisheries, customary regulations in Lhok Pulo Nasi place strong emphasis on coastal and marine conservation. Fishing activities are prohibited every Friday, beginning at sunset on Thursday and ending at sunset on Friday, allowing community members to focus on religious observance. Similar prohibitions apply for three consecutive days during the Islamic festivals of Eid al-Fitr and Eid al-Adha, as well as during the annual Kenduri Laot ceremony, a traditional maritime thanksgiving ritual. Fishing is also prohibited on 26 December each year in remembrance of the 2004 Indian Ocean tsunami.

Environmental restrictions focus primarily on coral reef protection. Fishers are strictly prohibited from dropping anchors on living coral reefs and from using destructive fishing methods such as explosives or poisonous substances to capture reef-associated fish species. In addition, traditional fishing territories are recognized and protected to prevent larger motorized vessels

from outside the island from encroaching upon the fishing grounds of local small-scale fishers.

## 2. Lhok Langsa

Located along the eastern coast of Aceh and characterized by muddy coastal waters and extensive mangrove forests, Lhok Langsa places particular emphasis on estuarine and mangrove conservation. Fishing prohibitions follow the general provisions of Acehnese maritime customary law, including restrictions on Fridays, major Islamic holidays, the annual tsunami commemoration on 26 December, and Indonesian Independence Day on 17 August.

Environmental regulations specifically prohibit the cutting of coastal vegetation and the destruction of mangrove forests. These ecosystems are widely recognized as essential nursery grounds for commercially important species such as shrimp and mud crabs. In addition, the Panglima Laot institution strictly limits the use of destructive fishing gear, particularly trawl nets and fine-mesh nets that may deplete juvenile fish populations and damage benthic habitats within nearshore waters of the Malacca Strait.

## 3. Lhok Krueng Aceh (Lampulo)

As one of Aceh's largest fishing ports, accommodating vessels ranging from 10 to 60 GT, Lhok Krueng Aceh demonstrates a stronger focus on conflict management and the regulation of large-scale fishing operations. The customary prohibition on fishing during Fridays, Islamic holidays, and the annual tsunami commemoration is strictly enforced. Compliance is monitored directly at the Lampulo Fish Landing and Auction Center (Tempat Pelelangan Ikan), where official notices are displayed prominently. During prohibited periods, hundreds of fishing vessels remain moored along the Krueng Aceh harbor without conducting fishing activities.

One of the most significant principles within the customary law system is the humanitarian obligation at sea. Fishers operating in offshore waters are required to assist any individual, vessel, or living being in distress. Deliberately ignoring emergency calls from other vessels constitutes a serious violation of customary law and is subject to social and institutional sanctions.

To prevent conflicts between industrial and small-scale fisheries, large purse-seine vessels operating from Lampulo are prohibited from fishing within traditional fishing zones located less than three nautical miles from the shoreline. This regulation aims to protect the livelihoods of small-scale fishers and prevent damage to stationary fishing gear.

The findings indicate that customary maritime regulations are not solely mechanisms for controlling fishing activities but also function as instruments for environmental conservation, conflict resolution, social solidarity, and cultural continuity. These regulations illustrate how local ecological knowledge has been institutionalized into a community-based governance system capable of balancing resource utilization with long-term sustainability.

### Customary Institutions and the Social System of Panglima Laot

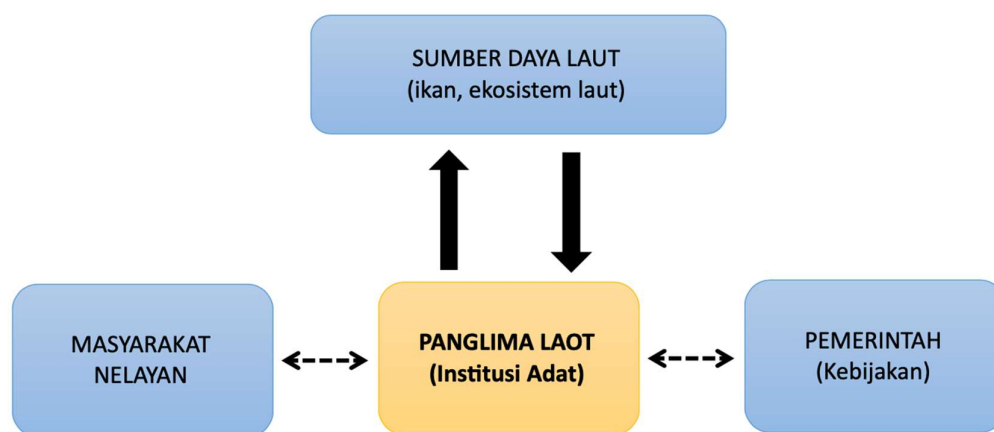
The Panglima Laot institution represents a form of local wisdom that functions not only as a fisheries management system but also as a complex and adaptive socio-cultural institution within Acehnese coastal communities. The findings reveal that Panglima Laot embodies the integration of historical, cultural, social, and ecological dimensions that operate simultaneously within the daily lives of fishing communities.

Historically, Panglima Laot has existed since the era of the Aceh Sultanate and continues to function in contemporary society. Its persistence demonstrates a remarkable degree of institutional resilience derived not only from its organizational structure but also from the strong social legitimacy it enjoys among local communities. From the perspective of legal pluralism, this continuity illustrates that customary law has not been displaced by formal state law; rather, the two systems coexist and complement one another in regulating social practices (Griffiths, 1986; Merry, 1988).

This classical perspective remains highly relevant and is reinforced by contemporary scholarship demonstrating that locally embedded institutions with strong social legitimacy often possess greater effectiveness in regulating collective behavior than externally imposed governance mechanisms (Bennett et al., 2019; Partelow, 2018). In the case of Panglima Laot, compliance

with customary regulations is largely maintained through social recognition, collective values, and community trust rather than through formal coercive enforcement. This condition contributes significantly to the institution's long-term durability and adaptive capacity in responding to changing environmental and socio-economic conditions.

Furthermore, from a social-ecological perspective, Panglima Laot can be understood as part of an integrated system that links human communities, marine ecosystems, and institutional arrangements within a dynamic framework (Berkes, 2018). Practices such as the regulation of fishing schedules, the allocation of fishing territories, and restrictions on specific fishing gear reflect the existence of local ecological knowledge that has evolved through long-term interactions between fishing communities and the marine environment. These findings are consistent with previous studies demonstrating that local knowledge plays a crucial role in enhancing the adaptability and sustainability of fisheries resource management (Gutiérrez et al., 2011; Partelow et al., 2020). Moreover, recent research highlights that the integration of local and scientific knowledge can improve the effectiveness of community-based resource management policies (d'Armengol et al., 2018; Bennett et al., 2019).



**Gambar 1. Model Sistem Sosial-Ekologis Panglima Laot**

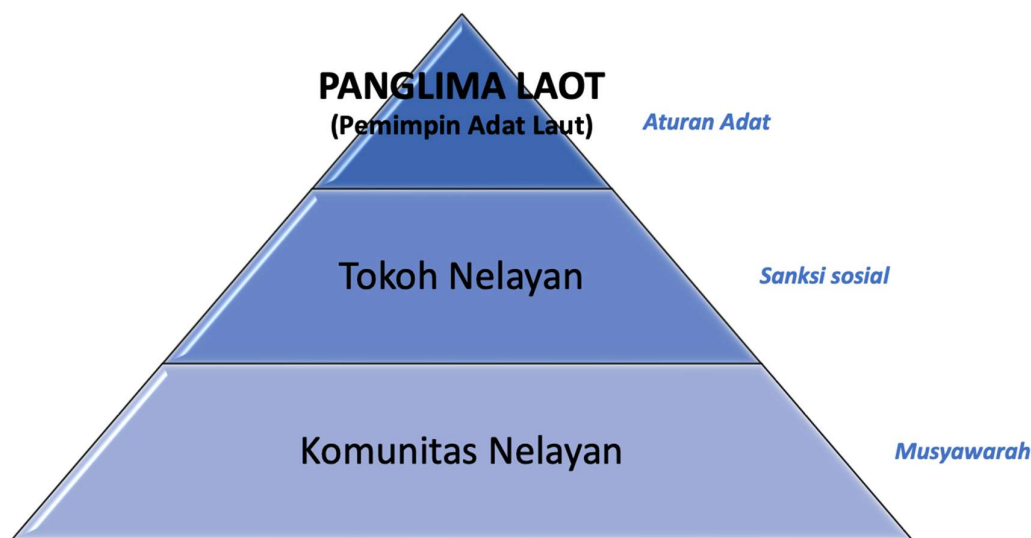
Sumber: Konstruksi peneliti (2025)

Figure 1 illustrates the central role of Panglima Laot as a connecting institution linking marine resources, fishing communities, and governance systems. The interaction among these three components forms a dynamic social-ecological system in which sustainability is shaped not only by ecological factors but also by the social norms and cultural values embedded within local communities (Berkes, 2018; Partelow et al., 2020). From the perspective of sustainability science, local institutions such as Panglima Laot can be viewed as manifestations of institutional resilience that contribute to maintaining a balance between resource exploitation and ecological sustainability. Recent studies suggest that the success of community-based management systems is strongly influenced by social legitimacy, community participation, and the capacity of local institutions to adapt to policy changes and global market pressures (Cinner et al., 2021; Kittinger et al., 2021).

Beyond its ecological functions, Panglima Laot also embodies a strong cultural dimension. Maritime culture within Acehese coastal communities serves not only as a source of collective identity but also as a social mechanism that fosters compliance with environmental norms. Across many coastal societies worldwide, customary rituals and traditional prohibitions have been shown to strengthen informal marine conservation practices and support the sustainable use of natural resources (Nayak et al., 2021; Fabinyi et al., 2022). In this regard, the practice of designated non-fishing days within the Panglima Laot system may be interpreted as a form of cultural ecosystem service that fulfills both ecological and symbolic functions.

Practices such as fishing taboos and customary rituals reflect a symbolic relationship between humans and the sea. From the perspective of cultural anthropology, these practices can be understood as symbolic systems that reinforce social cohesion and collective identity within coastal communities (Geertz, 1973). This classical interpretation remains relevant today and is supported by recent studies demonstrating that cultural practices and ritual traditions play an important role in sustaining the resilience and continuity of coastal social-ecological systems (Clifton et al., 2019).

The findings therefore suggest that Panglima Laot should not be viewed solely as a customary fisheries management institution. Rather, it represents a multidimensional governance system that integrates ecological knowledge, cultural values, social norms, and community-based institutions into a coherent framework for managing coastal resources. This integration contributes to the long-term resilience of both coastal communities and marine ecosystems, while simultaneously preserving the cultural heritage and collective identity of Acehnese society. As such, Panglima Laot offers an important example of how indigenous and local governance systems can complement formal management approaches in addressing contemporary challenges of coastal sustainability.



**Gambar 2. Struktur Kelembagaan Panglima Laot dalam Sistem Adat**

Sumber: Konstruksi peneliti (2025)

Figure 2 illustrates the institutional structure of Panglima Laot, which is hierarchical in organization yet fundamentally community-based in nature. Within this structure, the Panglima Laot serves not only as a customary leader but also as a social mediator, conflict resolver, and guardian of community norms. The institutional arrangement reflects a community-based governance system characterized by a high degree of social legitimacy and strong local participation.

From a social perspective, Panglima Laot plays a crucial role in resolving conflicts among fishers through mechanisms based on deliberation, consensus-building, and customary mediation. Such mechanisms are often perceived by local communities as more effective than formal legal approaches because they are grounded in shared cultural values, collective trust, and long-established social norms. This finding is consistent with the theory of common-pool resource management, which emphasizes the importance of locally embedded institutions in ensuring sustainable resource governance (Ostrom, 1990).

Contemporary studies further support this argument by demonstrating that community-based governance mechanisms can enhance compliance, reduce resource-use conflicts, and strengthen social stability in fisheries management systems (Cinner et

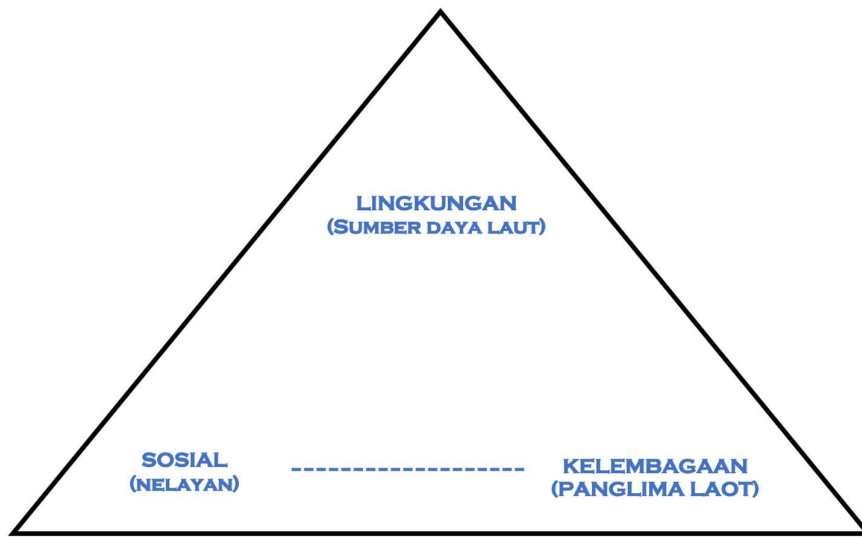
al., 2012; Bennett et al., 2019). The effectiveness of these institutions is closely associated with their ability to foster collective action, build trust among resource users, and establish locally accepted rules that regulate access to and utilization of marine resources.

The findings suggest that the effectiveness of Panglima Laot extends beyond its regulatory authority. Its strength lies in its capacity to integrate customary law, social norms, ecological knowledge, and collective decision-making processes into a governance framework that is both adaptive and culturally legitimate. As a result, Panglima Laot contributes not only to the sustainability of fisheries resources but also to the maintenance of social cohesion and institutional resilience within Acehese coastal communities. To provide a clearer overview of the research findings, the multidimensional functions of Panglima Laot can be summarized as follows:

**Tabel 2. Fungsi Panglima Laot dalam Perspektif Sosial, Budaya, dan Ekologis**

Dimensi	Bentuk Praktik	Makna/Interpretasi	Implikasi
Ekologis	Pengaturan waktu melaut, larangan alat tangkap	Pengetahuan ekologis lokal	Menjaga keberlanjutan sumber daya
Sosial	Penyelesaian konflik melalui musyawarah	Norma kolektif dan solidaritas sosial	Meningkatkan stabilitas sosial
Budaya	Hari pantang melaut, ritual adat	Nilai simbolik dan spiritual	Memperkuat identitas budaya
Kelembagaan	Peran Panglima Laot sebagai pemimpin adat	Legitimasi sosial berbasis komunitas	Efektivitas tata kelola lokal

On the other hand, this study also identified several challenges affecting the long-term sustainability of the Panglima Laot institution. Modernization, increasing economic pressures, and changing values among younger generations have emerged as factors that may gradually weaken the practice and transmission of local wisdom. These findings suggest that the sustainability of customary institutions depends not only on the strength of tradition but also on their capacity to adapt to evolving social, economic, and political conditions. Recent studies similarly emphasize that local wisdom systems frequently face challenges associated with integration into formal governance frameworks and the pressures of global economic dynamics (Berkes, 2018; Partelow et al., 2020).



**Gambar 3. Model Keberlanjutan Panglima Laot dalam Sistem Sosial-Ekologis**

Sumber: Konstruksi peneliti (2025)

Figure 3 illustrates that the sustainability of Panglima Laot is shaped by the interaction of environmental, social, and institutional dimensions. These interconnected elements collectively contribute to maintaining the balance of the coastal social-ecological system. Environmental dimensions relate to the conservation of marine resources and the maintenance of ecosystem functions, while social dimensions encompass community participation, collective values, and social cohesion. Institutional dimensions, meanwhile, involve the capacity of customary governance structures to formulate, enforce, and adapt rules in response to changing circumstances.

Within this context, a co-management approach becomes particularly relevant as a mechanism for integrating local wisdom with formal governance systems. The interaction between Panglima Laot and government agencies reflects an emerging form of collaborative resource management that combines local ecological knowledge with modern regulatory approaches (Jentoft, 2005). Such collaboration demonstrates that customary institutions and state governance need not operate in opposition but can function as complementary components of a broader governance framework.

Recent research further indicates that the integration of local and formal governance systems can enhance the effectiveness, legitimacy, and adaptability of resource management policies, although significant implementation challenges remain (d'Armengol et al., 2018; Bennett et al., 2019). These challenges include differences in institutional priorities, limited recognition of customary authority within formal policy frameworks, and the need to accommodate local cultural values within contemporary management practices.

Overall, the findings of this study demonstrate that Panglima Laot constitutes a dynamic and adaptive governance system. Its primary strength lies in its ability to integrate cultural values, ecological knowledge, and social norms within a coherent framework of coastal resource management. This integration enables the institution to contribute not only to fisheries sustainability but also to social cohesion, cultural continuity, and community resilience.

Consequently, strengthening Panglima Laot requires more than the preservation of cultural traditions alone. It also necessitates supportive policies that recognize and accommodate the role of local wisdom within contemporary resource

governance systems. Greater institutional collaboration, legal recognition, and the inclusion of customary knowledge in policy-making processes are essential to ensuring that Panglima Laot remains relevant and effective in addressing future environmental and socio-economic challenges. The experience of Panglima Laot provides valuable lessons for coastal governance worldwide, demonstrating how community-based institutions can contribute to sustainable development by bridging cultural heritage, ecological stewardship, and adaptive governance.

**Tabel 3. Perbandingan Hasil Penelitian dengan Studi Terkini**

Aspek	Penelitian Ini	Penelitian Sebelumnya
Fokus	Sejarah dan budaya Panglima Laot	Dominan pengelolaan perikanan
Pendekatan	Sosial-ekologis dan budaya	Ekologis atau kebijakan
Temuan utama	Integrasi nilai budaya dan pengelolaan sumber daya	Efektivitas co-management
Kontribusi	Model sistem sosial-ekologis berbasis kearifan lokal	Penguatan manajemen sumber daya

The findings of this study demonstrate that Panglima Laot functions not merely as a local institution but also as an alternative model of community-based resource governance. In the global context, such approaches have increasingly attracted attention as viable solutions to the limitations of conventional top-down management systems. Recent studies indicate that community-based governance often achieves higher levels of resource sustainability because it is grounded in active community participation, collective ownership, and strong social legitimacy (Bennett et al., 2019; Partelow et al., 2020).

Contemporary approaches to coastal resource management have evolved from co-management toward broader forms of collaborative governance that recognize local communities as central actors in decision-making processes. Emerging evidence suggests that integrating formal policy frameworks with customary institutions can enhance the effectiveness of marine conservation initiatives while reducing conflicts over resource use (Evans et al., 2023; Jouffray et al., 2020). In the Acehese context, the continued existence of Panglima Laot demonstrates that customary governance systems remain highly relevant in addressing contemporary challenges associated with modernization, fisheries development, and the growing blue economy agenda.

Furthermore, Panglima Laot can be understood as a form of adaptive governance, namely a governance system capable of responding to social and ecological change through the integration of local knowledge and flexible institutional arrangements (Berkes, 2018). This adaptive capacity is reflected in the institution's ability to persist through periods of social transformation and technological modernization without losing its fundamental cultural values and normative foundations. Such evidence suggests that local wisdom should not be viewed as a static cultural relic but rather as a dynamic and evolving system capable of responding to changing environmental and societal conditions.

The findings further reinforce the argument that resource sustainability is not determined solely by formal regulations and enforcement mechanisms but also by the social and cultural factors that shape human behavior. In this regard, Panglima Laot illustrates how customary norms and cultural values can function as highly effective mechanisms of social regulation, often complementing or even surpassing the effectiveness of formal legal instruments. This observation is consistent with recent scholarship emphasizing the importance of integrating social, cultural, and institutional dimensions into natural resource governance frameworks (d'Armengol et al., 2018; Bennett et al., 2019).

Consequently, Panglima Laot should be regarded not only as a locally specific phenomenon but also as a conceptual model with broader relevance for the development of community-based resource management and social-ecological systems theory. The institution provides empirical evidence that sustainable governance can emerge from the interaction between cultural

traditions, ecological knowledge, and locally legitimate institutions. Such findings contribute to ongoing debates regarding how indigenous and local governance systems can support resilience, sustainability, and equitable resource management in diverse socio-ecological contexts.

This study also makes an important contribution to the growing literature on local wisdom and social-ecological systems. Unlike previous studies that have primarily focused on the technical and managerial aspects of fisheries governance, this research demonstrates that the effectiveness of Panglima Laot derives from the integration of cultural values, social legitimacy, and ecological knowledge within a unified governance framework. The institution therefore operates not only as a mechanism for regulating resource use but also as a social and cultural system that shapes collective behavior and reinforces community resilience.

From a theoretical perspective, these findings enrich the understanding of how local institutions contribute to the resilience and sustainability of social-ecological systems. They highlight the importance of considering cultural dimensions, social legitimacy, and locally embedded knowledge in the analysis of community-based governance. Accordingly, Panglima Laot may be positioned not only as a unique institution of Acehnese coastal society but also as a conceptual model that advances contemporary theories of community-based resource management, adaptive governance, and social-ecological resilience at the global level.

#### **4. Conclusion**

The continued existence of Panglima Laot demonstrates that local wisdom occupies a strategic position in supporting sustainable development agendas, particularly Sustainable Development Goal (SDG) 14 on Life Below Water. Strengthening community-based customary institutions is important not only for the conservation of marine resources but also for safeguarding the cultural identity of coastal communities in an era of rapid globalization (UNDP, 2023; UNESCO, 2022).

This study confirms that Panglima Laot is far more than a fisheries management institution. Rather, it functions as a socio-cultural system that serves as a mechanism of social-ecological governance within Acehnese coastal communities. Historically, the persistence of Panglima Laot reflects the resilience of customary institutions, supported by strong social legitimacy and a remarkable capacity to adapt to changing social, economic, and political circumstances. From a social-ecological perspective, customary practices such as regulating fishing periods, allocating fishing territories, and enforcing fishing restrictions embody local ecological knowledge that contributes directly to the sustainable management of marine resources.

From a cultural perspective, Panglima Laot operates as a value system that regulates relationships between humans and nature, among community members, and with the spiritual dimensions of life. These functions contribute to the development of social cohesion, collective identity, and voluntary compliance with community norms. At the same time, its conflict-resolution mechanisms, based on deliberation and consensus-building, demonstrate the effectiveness of locally embedded institutions in maintaining social stability and strengthening collective action among resource users.

Nevertheless, this study also identifies significant challenges to the long-term sustainability of Panglima Laot. Processes of modernization, increasing economic pressures, and the weakening transmission of customary values among younger generations may gradually reduce the effectiveness of this institution. These findings suggest that preserving local wisdom requires more than cultural recognition; it also demands institutional adaptation and supportive governance arrangements capable of responding to contemporary social and economic transformations.

Accordingly, strengthening Panglima Laot requires greater integration between local wisdom and formal governance systems through participatory and context-sensitive co-management approaches. Such integration would enable customary institutions to continue contributing to resource governance while adapting to emerging challenges associated with fisheries modernization, climate change, and the blue economy. In this regard, Panglima Laot possesses strategic potential not only as a cultural heritage institution but also as an alternative model of community-based governance capable of addressing contemporary social-ecological challenges.

The findings further indicate that the sustainability of Panglima Laot cannot rely solely on the cultural resilience of local communities. It also requires structural support through state policies that are more inclusive of local institutions and indigenous knowledge systems. Coastal resource governance in Indonesia has often been dominated by technocratic and administrative approaches that position local communities primarily as policy recipients rather than as active resource managers. Such approaches risk marginalizing local knowledge, weakening the social legitimacy of coastal policies, and increasing resource-use conflicts. By contrast, the findings of this study demonstrate that Panglima Laot possesses significant adaptive capacity to maintain ecological balance while simultaneously fostering social stability through culturally embedded mechanisms and community consensus.

Therefore, a paradigm shift is needed in coastal governance—from predominantly state-centered approaches toward collaborative governance models that recognize customary institutions as strategic partners in marine resource management. Without more substantive recognition of local governance systems such as Panglima Laot, fisheries modernization and blue economy initiatives may inadvertently accelerate the erosion of maritime cultural heritage and weaken the social-ecological resilience of coastal communities.

Furthermore, the preservation of Panglima Laot should extend beyond symbolic or ceremonial recognition. It should be accompanied by institutional capacity strengthening, legal protection of customary governance systems, and the integration of local ecological knowledge into education, coastal development planning, and public policy. Such measures would enhance the long-term relevance and effectiveness of customary institutions while promoting more inclusive and sustainable governance outcomes.

From a broader perspective, this study contributes to the growing body of scholarship on community-based governance and social-ecological systems by demonstrating how cultural values, social legitimacy, and ecological knowledge can be integrated within a resilient governance framework. The Panglima Laot institution thus offers valuable lessons not only for Indonesia but also for global discussions on sustainability, adaptive governance, and community-based marine resource management. Its experience illustrates that locally rooted institutions can play a critical role in achieving both environmental sustainability and social resilience in an increasingly complex and interconnected world.

### **Limitations and Future Research**

This study is limited to selected luhok areas in Aceh and focuses primarily on the historical, cultural, and institutional dimensions of Panglima Laot. Future research could explore comparative analyses of customary marine governance systems across different regions of Indonesia, examine the interaction between customary institutions and formal fisheries policies, and assess the role of local wisdom in strengthening coastal resilience to climate change and blue economy development. Such studies would contribute to a deeper understanding of how indigenous and local governance systems can support sustainable coastal development in diverse socio-ecological contexts.

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