

Nyalawean, Tradition of Catching Young Fish in the South Coastal Waters of Sukabumi and Banten: A Review of Conservation and Socio-Cultural Values

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ABSTRACT

Nyalawean is a traditional fishing practice targeting fish larvae and juveniles in the coastal and estuarine areas of southern Sukabumi and Banten, Indonesia. This activity holds both economic importance and deep social-cultural significance for coastal communities. This study examines Nyalawean from two main perspectives: natural resource conservation and local cultural values. The methods applied include participatory observation, in-depth interviews with local actors, and literature and documentation reviews. The results indicate that although Nyalawean may affect the ecological sustainability of fish populations, it is rooted in local wisdom that reflects community-based resource management. Moreover, Nyalawean strengthens social identity, community solidarity, and the intergenerational transmission of ecological knowledge. Thus, preserving this tradition requires a balanced approach that safeguards cultural values while enhancing conservation principles. This study recommends developing inclusive, culture-based policies to sustain local traditions and coastal ecosystems.

INTRODUCTION

The southern coast of Java, particularly the Sukabumi and Banten regions, is known for its rich marine ecosystems and strong maritime culture (Annida & Baihaqi, 2024; Wahyudin, 2011). One tradition that persists to this day is *Nyalawean*, a seasonal practice of local fishing communities catching young fish. This activity is not merely an economic practice but has become part of the cultural identity and local knowledge system passed down across generations (Annida & Baihaqi, 2024; Romdon et al., 2024).

However, in the context of modern fisheries resource management that emphasizes sustainability principles, the practice of catching small-sized fish, including larvae and juveniles, is often questioned from an ecological perspective (FAO, 1995; Salfauz, 2015). Catching fish at an early life stage can disrupt the regeneration of fish stocks and the balance of marine ecosystems (Habibie et al., 2025; Kemp et al., 2023). Furthermore, ignoring local traditions such as *Nyalawean* can create social tensions and erode local knowledge and values, which are essential to building inclusive, context-specific coastal governance (Annida & Baihaqi, 2024).

The study of *Nyalawean* is crucial not only for understanding local social and ecological dynamics but also for bridging two major concerns: coastal resource conservation and the preservation of indigenous cultures. Through an interdisciplinary approach, this study aims to map and understand the values inherent in *Nyalawean* practices, examining them from both ecological and sociocultural perspectives.

This research is urgently needed to strengthen community-based coastal management. Amidst the tide of modernization and pressures on marine ecosystems, neglecting local traditions risks eliminating adaptive and sustainable socio-ecological systems. By comprehensively examining *Nyalawean*, this study is expected to contribute to the formulation of fisheries management policies that are not only scientific and based on environmental and fish resource sustainability, but also responsive to the local culture and identity of coastal communities.

THEORETICAL REVIEW

Nyalawean Tradition as a Local Ecological Practice

Traditional fishing practices are widely recognized as forms of Indigenous and Local Knowledge (ILK) that emerge from long-term human–environment interactions. The *Nyalawean* tradition fits within the broader framework of community-based resource use, where ecological rhythms, seasonal cues, and communal norms shape harvesting methods, timing, and gear selection. In many coastal societies, such traditional practices function not only as livelihood strategies but also as socio-ecological systems that reflect local adaptation to environmental variability. Concepts such as traditional ecological knowledge (TEK), customary marine tenure, and participatory resource governance are central to understanding *Nyalawean*. These frameworks highlight how local rules, taboos, and collective decision-making often serve as informal management mechanisms that guide resource extraction while maintaining social cohesion. Therefore, *Nyalawean* can be analyzed theoretically as a culturally embedded

ecological practice that balances subsistence needs with traditional norms of environmental stewardship (Annida & Baihaqi, 2024; Khan, 2024; Nayak et al., 2021; Rosyadi, 2017).

Young Fish as Catches in Nyalawean: Conservation Perspectives

The catching of fish larvae and juveniles is a critical issue in fisheries ecology, as early life stages determine recruitment success and long-term population stability (Annida & Baihaqi, 2024; Baihaqi, 2022; Baihaqi et al., 2025b). Theoretical models such as stock–recruitment relationships, life-history theory, and population dynamics provide the foundation for understanding the ecological implications of harvesting young fish. According to these frameworks, removing individuals before they reach reproductive maturity can reduce spawning biomass, alter recruitment patterns, and potentially disrupt ecosystem functioning. However, the impact is context-dependent and influenced by species composition, harvesting intensity, and ecosystem resilience. The theoretical discourse on selective fishing, bycatch of early life stages, and sustainability thresholds is therefore essential to evaluate the ecological risks associated with *Nyalawean*. These theories offer analytical tools for assessing whether traditional harvesting practices remain within ecologically acceptable limits or require adaptation to support long-term conservation goals (Baihaqi et al., 2022; Camp et al., 2023; Sharma et al., 2019).

Socio-Cultural Values in Traditional Coastal Communities

Socio-cultural theories emphasize that traditional resource practices are embedded in systems of meaning, identity, and social organization. Cultural ecology, symbolic interactionism, and social capital theory provide key insights into how coastal communities interpret and manage their natural environments (Rahmatirad, 2020). Practices such as *Nyalawean* often carry symbolic significance, reinforcing collective identity, intergenerational knowledge transfer, and community solidarity (Annida & Baihaqi, 2024). Cultural ecology explains how resource practices evolve as adaptive responses to environmental conditions, while symbolic frameworks highlight ritual, belief, and social norms as drivers of collective behavior (Baumard & Andre, 2025; Berkes et al., 2000). Social capital theory, including bonding community ties and shared norms, helps explain how cooperation and traditional rules emerge to reduce resource conflict and sustain communal practices. Together, these theoretical perspectives demonstrate that traditional fishing methods cannot be understood purely as economic activities; they are deeply integrated into the social fabric and cultural heritage of coastal societies (Tsounis & Xanthopoulou, 2024; Annida & Baihaqi, 2024).

Conceptually, research on the *Nyalawean* tradition in the southern coastal areas of Sukabumi and Banten must consider both the ecological dimension, as part of conservation assessment, and the social dimension, rooted in community culture. These components serve as key foundations for developing fisheries and regional management strategies. The conceptual framework for this study is presented in Figure 1.

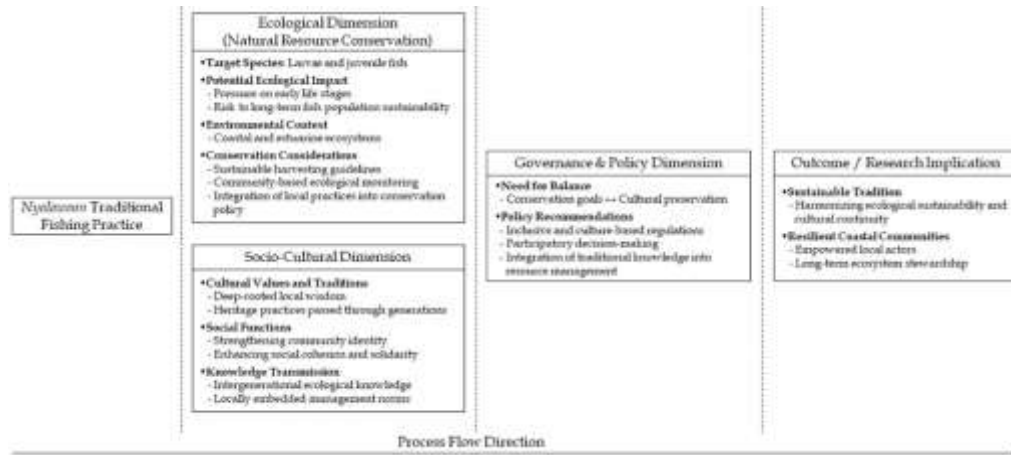


Figure 1. Conceptual framework

METHODOLOGY

Research Approaches and Types

This research uses a descriptive qualitative approach with ethnographic methods. This approach was chosen because the study's primary focus is to understand traditional *Nyalawean* practices within the socio-cultural context of coastal communities and their implications for the conservation of fisheries resources. Ethnography allows researchers to explore the meanings, symbols, values, and daily practices of the community in depth and contextually (Black et al., 2021; Ploder & Hamann, 2021).

Time and Place of Research

The research was conducted through direct in-depth observation and the collection of ethnographic data from the local community for a whole year in 2021, followed by a further in-depth study in 2025. The boundaries of the research area were determined along Palabuhanratu Bay, from the Cikaso estuary area in Sukabumi (east) to the Bayah area in Banten (west). This location was defined as an area where the *Nyalawean* tradition is commonly and intensively practiced (Annida & Baihaqi, 2024; Baihaqi, 2022). Several locations known as centers of *Nyalawean* practice along the observed area are the Cikaso Estuary, Cibueya, Ujung Genteng, Cimandiri, Citepus, Cisukawayana, Cimaja, Cisolok, Cibareno, and Bayah (Figure 2).



Figure 2. Research Location

Data Sources and Collection Techniques

Research data was obtained through direct observation or participant observation. Observations were conducted in the field on *Nyalawean* practices, including the fishing process, the use of fishing gear, the timing of activities, and the social interactions. To obtain an in-depth picture, in-depth interviews were conducted with various designated informants. Informants in this study were selected purposively using a snowball sampling technique, starting with community leaders or key *Nyalawean* actors, then expanding to other informants (Jorgensen, 1989; Ting et al., 2025). The informant criteria are determined based on the following things:

- a. Local traditional figures or elders who understand the cultural and historical values of traditions;
- b. Fishermen who are actively involved in *Nyalawean* activities;
- c. Officers from the Maritime Affairs and Fisheries Service, as well as local NGOs related to conservation;
- d. Local academics or researchers who understand local practices and coastal water ecology;
- e. Local people or tourists who have subjective assessments of the *Nyalawean* practices they witness.

The number of informants is determined based on the adequacy of information (data saturation), when the data obtained has been repeated and does not produce new findings.

Participatory observation involved directly observing the *Nyalawean* traditional process, from catching young fish around the estuary and coast to utilizing the catch. Participatory observation was conducted across all areas identified as hotspots for the *Nyalawean* tradition (Annida & Baihaqi, 2024).

To supplement the required data and information, a literature review was also included. The literature review included local documents, news reports, customary records, relevant government/NGO reports, and research journals. Visual documentation, such as photos and videos, was also used for analysis (Snyder, 2019; Widiarsa, 2019).

Data analysis

Data were analyzed qualitatively using the Miles and Huberman model through three main stages: data reduction, data presentation, and conclusion drawing and verification. Data reduction was carried out by selecting, focusing on, and simplifying raw data based on relevant themes, in this case, those related to the conservation and socio-cultural values of the *Nyalawean* tradition. Data presentation was arranged in narrative form and direct quotations. The conclusion-drawing and verification process was finished by interpreting the data within the framework of conservation and socio-cultural values. Data validity was tested through triangulation of sources and methods, as well as member checks with informants (Miles & Huberman, 1992).

Research Ethics

This study adhered to social research ethics, including the principles of informed consent, informant anonymity, and cultural sensitivity. All informants were provided with an explanation of the research objectives and were free to discontinue participation at any time (Petrova et al., 2016; Saunders et al., 2015).

RESULTS AND DISCUSSION

History of Nyalawean Practice

Nyalawean is a traditional practice of catching young fish, generally at larval or juvenile stages. It is carried out seasonally in the southern coastal areas of Java, particularly Sukabumi Regency (West Java) and parts of the south coast of Banten Province (Romdon et al., 2024; Simanjuntak et al., 2021). This activity is part of traditional fishing practices passed down through generations and serves as a seasonal livelihood for some local fishing communities (Annida & Baihaqi, 2024; Baihaqi et al., 2022; Baihaqi et al., 2025a).

The origins of the *Nyalawean* practice are difficult to trace with certainty. Still, it is estimated to have been practiced for decades, possibly hundreds of years, and passed down from generation to generation. The *Nyalawean* practice developed alongside the migration and local fishing customs of communities that depended on specific fishing seasons for their livelihoods (Annida & Baihaqi, 2024; Baihaqi et al., 2025a; 2025c). According to several local elders, the name "*Nyalawean*" derives from the word "lawe," a local term for young fish caught in large numbers in estuaries and coastal waters. This practice initially developed as part of a subsistence activity, for household consumption, or as animal feed. However, over time, the *Nyalawean* tradition became an economic activity that provided additional income, especially during lean seasons for large fish catches (Annida & Baihaqi, 2024; Baihaqi et al., 2025a).

According to other sources, *Nyalawean* also originates from the word "*selawe*", which in Javanese means 25. This relates to the common date of this tradition, which is around the 25th of the lunar calendar (Hijri) (Amaliah et al., 2023; Perangin-angin et al., 2023; Prabowo et al., 2022). Although *Nyalawean* is generally practiced monthly, certain seasons see higher-intensity fishing and abundant catches. During the two transitional seasons between the rainy and dry seasons, *Nyalawean* activities are more intense. This is due to the abundance of larvae and juveniles of the target fish caught during these transitional seasons (Baihaqi, 2022).

Catches from the Nyalawean Tradition

Several studies have reported that the catch of the *Nyalawean* tradition consists of larvae and juveniles of coastal, marine, riverine, and diadromous fish (Amaliah et al., 2023; Prabowo et al., 2022; Simanjuntak et al., 2021). Diadromous fish are a group of fish that migrate between freshwater and marine habitats. Recent research confirms that larvae and juveniles of gobies and eels constitute the most significant portion of the *Nyalawean* traditional catch (Annida et al., 2021; Baihaqi et al., 2022; Baihaqi & Annida, 2025a, 2025b).

Gobies from the Gobiidae and Eleotridae families account for the most significant portion of the *Nyalawean* traditional catch. This group is known as a

migratory freshwater fish, a subcategory of diadromous fish, which move between freshwater and marine waters for non-spawning purposes. Freshwater amphidromous fish are essentially river fish. Their parents spawn in fast-flowing rivers near estuaries. They typically build nests and attach their eggs to crevices in rocks on the riverbed. Newly hatched amphidromous larvae are rheoplanktonic, meaning the strong river currents carry them to the sea. These larvae first feed in the sea, feeding on the surrounding plankton (Baihaqi et al., 2022; Baihaqi et al., 2025a; Baihaqi et al., 2025b; Keith, 2003; McDowall, 2007).

During the larval stage, amphidromous fish cannot swim against the current, so they live as planktonic organisms. After developing into juveniles, amphidromous fish become sufficiently capable of swimming into coastal waters and approaching river estuaries. Harnessing the energy of the spring tide around the 25th of the Hijri calendar, or the new moon phase, the juvenile amphidromous fish will return to rivers via estuaries. Eventually, the amphidromous fish will mature in rivers, and the life cycle repeats (Baihaqi, 2022; Keith et al., 2008; McDowall, 2009, 2010).

In addition to amphidromous gobies, other catches include juveniles or glass eels. Glass eels, locally known as "*lubang*," are the juvenile stage of the fish. Eels are a catadromous group of freshwater fish whose parents migrate to the ocean to spawn. After spawning in the sea, the larvae, or leptocephalus stage, are planktonic and prey on other plankton. After developing to the glass eel stage, the eels return to freshwater estuaries, aided by tidal energy (Annida, 2022; Annida et al., 2021; Aoyama, 2009; Baihaqi & Annida, 2025a).

Both glass eels and juvenile gobies are generally caught during the *Nyalawean* (recruitment) activity during the process of returning to river waters through estuaries. This recruitment process also commonly occurs around the new moon phase, or the 23rd until the 27th of the Hijri calendar. In addition to migratory fish, the *Nyalawean* tradition also includes juvenile saltwater fish such as anchovies, scads, mackerel, milkfish, snapper, young mackerel, jarbua terapon, and tarpon, as well as freshwater fish such as tilapia. Coastal communities generally refer to their entire catch as "*impun*" (Annida & Baihaqi, 2024; Baihaqi, 2022; Baihaqi et al., 2025a; Faqihuddin et al., 2018) (Figure 3).



Figure 3. Some species caught from the Nyalawean tradition (Annida & Baihaqi, 2024)

Fishing Gear and Fishing Techniques

The tools used to catch young fish in the Nyalawean tradition are generally traditional fishing gear. There are two types of traditional fishing gear commonly used: the sirib and the seser. Both are assembled independently using simple materials. The sirib is made from a fine, rectangular netting, each end of which is tied to a bamboo slat. Four bamboo slats are tied to each end of the netting, then joined with rope near the other end of the bamboo. The seser is also made from fine netting and a bamboo frame, but is triangular (Annida, 2022; Annida & Baihaqi, 2024; Baihaqi & Annida, 2024) (Figure 4).

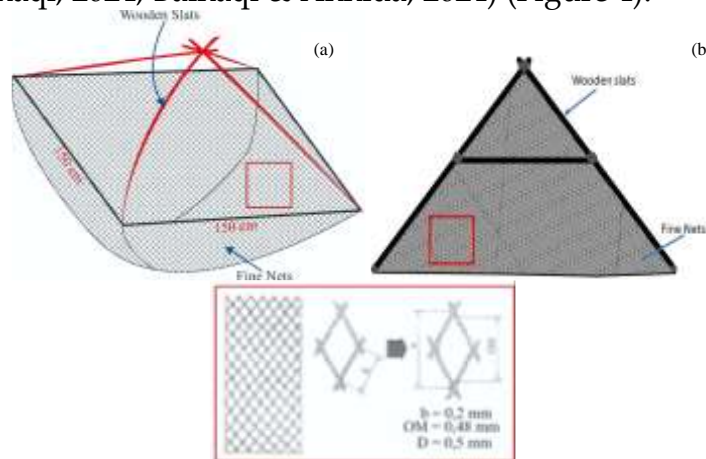


Figure 4. Construction of the sirib (a) and seser (b) fishing gear

A fisherman operates both fishing gears in the coastal area near a large estuary. The gear is stretched at a 45° angle, slightly horizontal to the direction of the incoming waves and tide. After the waves pass over the net, the gear is lifted, and the captured juveniles are collected in a temporary holding container made from a plastic bag or small bucket. Fishing times generally depend on the highest tide, which can occur in the morning, afternoon, evening, or night (Annida, 2022; Annida & Baihaqi, 2024; Baihaqi & Annida, 2024).

High tide is a potential time to catch juvenile fish, as the energy of the tides gathers them in coastal areas and river estuaries. For night fishing, fishermen generally use lighting devices such as petromaxes or headlamps. Besides providing illumination, using lights at night during fishing can also act as an attractant, attracting juvenile fish to approach and congregate in catchable areas (Annida et al., 2021; Annida & Baihaqi, 2024; Baihaqi & Annida, 2024) (Figure 5).



Figure 5. Documentation of fishing activities at night

Socio-Cultural Values

The Nyalawean tradition is generally performed en masse by dozens, even hundreds, of people at each fishing location or the mouth of every major river. The Nyalawean tradition is not limited to fishing communities; all levels of coastal communities participate in it. Men and women from all walks of life participate in the catch, including children, teenagers, adults, and older people (Figure 6).



Figure 6. Documentation of Nyalawean activities

The purpose of the *Nyalawean* tradition is not simply to maximize the catch, but also to create a monthly event where the community gathers, socializes, collaborates, and learns about one another. This reflects deeply rooted socio-cultural values within the coastal communities of Sukabumi and Banten, and has been practiced for generations. More in-depth observations reveal the socio-cultural values inherent in the *Nyalawean* practice, including:

a. Values of Togetherness and Mutual Cooperation

The *Nyalawean* tradition is often performed in groups, especially during the season when young fish are abundant in the shallow waters around the coast. Fishermen collaborate in the fishing process, both in preparing traditional fishing gear and in catching the fish. This sense of cooperation fosters social solidarity among residents and strengthens family ties among fishermen. Many also use this occasion to gather, socialize, get to know each other, and catch up on the news.

b. Local Wisdom Values

The *Nyalawean* ritual is based on local knowledge passed down through generations, including information about juvenile fish seasons, ocean currents, lunar phases, and the creation of environmentally friendly fishing gear. This local wisdom demonstrates the harmonious relationship between humans and nature and is a vital part of the cultural identity of coastal communities.

c. Traditional Values and Cultural Heritage

Nyalawean is a form of cultural heritage that has been passed down for a long time and is maintained across generations. This practice is integral to the life cycle of fishing communities, particularly during the transition period before the adult-fish season begins. These activities are also often woven into stories, myths, and collective experiences that strengthen a sense of ownership and responsibility for preserving the sea as a cultural living space.

Various stories and myths about the abundant season of young fish in coastal waters, around the 25th of the Hijri calendar, symbolize the sea goddess's (*dewi laut*) way of expressing prosperity. The year-over-year decline in catch abundance symbolizes the declining prosperity resulting from human environmental destruction.

d. Social Educational Values

The learning process in the *Nyalawean* tradition generally occurs informally through young people's observation and participation in these activities. Through direct experience, the younger generation is taught to respect the marine environment, adhere to unwritten rules, and develop ethical fishing skills.

e. Cultural Expression Values

Despite its simplicity, the *Nyalawean* practice also incorporates elements of cultural expression. For example, at certain times, this activity is accompanied by small rituals or communal prayers dedicated to gratitude for the abundance of marine resources. This reflects the coastal community's spiritual values of interacting with the Divine and seeking God's blessings upon marine resources.

f. Fair Social Economic Values

The harvest from *Nyalawean* is often shared by mutual agreement, for example, based on role or ownership of the fishing gear. This profit-sharing system reflects the principles of social justice and mutual trust among fishermen, both of which are crucial to maintaining community harmony.

g. Cultural Tourism Potential

The *Nyalawean* tradition, with its rich cultural elements, has become a popular attraction for both local and international tourists. Furthermore, several *Nyalawean* locations are located near well-known coastal destinations such as Citepus, Karang Hawu, and Ujung Genteng. Many tourists, while on beach trips to various coastal destinations in Sukabumi and Banten, accidentally witness the *Nyalawean* tradition. For many, this tradition adds an extra attraction alongside the stunning natural beauty. Many even pay to rent fishing gear to participate. Others are also interested in purchasing the *Nyalawean* catch for consumption. The remainder participate in witnessing and documenting the *Nyalawean* procession (Annida & Baihaqi, 2024).

Conservation Value

As previously stated, the *Nyalawean* tradition contains profound educational elements. This education teaches humans about their close relationship with nature, gratitude for the abundance of God's blessings, and an awareness of their responsibility to preserve the natural world. The educational values borne by this tradition are tangible conservation values expressed in local wisdom. More specifically, the conservation values embodied in the *Nyalawean* tradition are:

a. Fishing time based on the agreement

There is an unwritten rule, known and agreed upon by all communities on the southern coast of Sukabumi and Banten, regarding the implementation of juvenile fish-catching activities. Unwritten, they agree to only catch juvenile fish

during the *Nyalawean* tradition, or around the 23rd to 27th of the lunar calendar. Outside of this time, they prohibit juvenile fish catching. This initiative aims to raise public awareness and provide opportunities for juvenile migratory fish to continue moving to habitats outside the *Nyalawean* tradition, thereby maintaining the existence of their populations. Communities found violating this unwritten rule generally receive a fairly firm social reprimand. The role of the game in implementing *Nyalawean* activities reflects the community's understanding of the importance of local wisdom-based management in addressing and maintaining the carrying capacity of fish resources (Baihaqi, 2022; Baihaqi et al., 2025a).

b. Use of Environmentally Friendly Fishing Gear

Nyalawean activities utilize only traditional, environmentally friendly fishing gear. These gears, known as *sirib* and *seser*, are manually operated by each fisherman. These gears have no harmful side effects on the surrounding environment, and do not use additional equipment such as bombs, poisons, electric shocks, or other devices. The use of these environmentally friendly traditional fishing gear is a conservation value and a tangible manifestation of the community's understanding of the importance of responsible fishing practices (Annida et al., 2022; Baihaqi & Annida, 2024, 2025b; 2025c).

c. Ecological Knowledge Inheritance

Through the *Nyalawean* tradition, ecological knowledge is transferred from the older generation to the younger. This knowledge encompasses the types of fish to be caught, natural signs indicating the start and end of the *Nyalawean* season, permitted and prohibited fishing gear, and methods for preserving the ecosystem. This process reinforces the value of conservation as part of the cultural identity of coastal communities.

d. Maintaining Ecosystem Balance

All the rules and technical aspects of the *Nyalawean* tradition, which adhere to the principles of environmental sustainability and responsible fishing, reflect the community's efforts to maintain ecosystem balance. Many local people also expressed their views on the importance of maintaining ecosystem balance to ensure that natural resources, a symbol of prosperity, do not fade or decline in quality for future generations. Many communities even put this understanding into practice by working together to clean up the coast immediately after the *Nyalawean* tradition.

The conservation values embedded in *Nyalawean* practices demonstrate that coastal communities already have a natural resource management system grounded in local wisdom and sustainability. Although not formally documented in policy, these practices constitute a form of community-based conservation worthy of preservation and even serve as a model for adaptive coastal management in response to environmental change.

CONCLUSIONS AND RECOMMENDATIONS

The *Nyalawean* tradition on the southern coast of Sukabumi and Banten is a practice of catching fish larvae and juveniles that serves not only an economic purpose but also profound socio-cultural and conservation values. From a socio-

cultural perspective, *Nyalawean* reflects a spirit of togetherness, cooperation, and solidarity among residents, while also serving as a vehicle for preserving local knowledge and the cultural identity of coastal communities. This tradition also serves as a means of educating the younger generation on how to live in harmony with nature.

Meanwhile, from a conservation perspective, *Nyalawean* practices demonstrate local wisdom in sustainably managing marine resources. Through regulated fishing times, the use of simple, environmentally friendly fishing gear, and an understanding of fish biological cycles and environmental carrying capacity limits, coastal communities indirectly implement ecologically friendly, community-based conservation principles.

Thus, *Nyalawean* is not only part of traditional economic life but also a concrete example of the integration of local culture and environmental conservation efforts. Preserving this tradition is crucial not only for maintaining social identity but also for supporting the sustainability of coastal ecosystems.

FURTHER STUDY

Future studies should undertake long-term ecological monitoring to assess how the harvest of fish larvae and juveniles in *Nyalawean* influences population recruitment, species composition, and overall ecosystem stability. Such research needs to incorporate spatial-temporal dynamics, life-history characteristics of targeted species, and modeling approaches that can clarify sustainability thresholds that remain uncertain in the current literature.

In addition, there is a need for deeper investigation into the socio-cultural and governance dimensions of *Nyalawean*, particularly how cultural values, economic dependence, and community norms interact with contemporary coastal management policies. Comparative studies with other traditional fisheries could also help identify adaptive models for integrating local ecological knowledge into formal conservation frameworks. These long-term research efforts are essential for bridging existing knowledge gaps and supporting culturally grounded, ecologically sustainable management strategies.

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