Ethnobotanical knowledge of seaweed, seagrass, and mangrove resources in coastal communities: A systematic literature review

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Research

Abstract

Background: Seaweed, seagrass, and mangrove resources support coastal food systems, small-scale aquaculture, habitat quality, cultural practice, and local livelihoods. Their uses are often discussed separately in fisheries, marine ecology, aquaculture, conservation, and ethnobotanical studies. This review synthesizes Scopus-indexed evidence on ethnobotanical and local ecological knowledge related to these resources.

Methods: A PRISMA-oriented Scopus review was conducted on 10 June 2026 using terms for ethnobotany or local knowledge, coastal plant-based resources, and coastal or fishing communities. Of 291 records, 94 were excluded after title and abstract screening. All 197 eligible records were coded by resource group, knowledge domain, livelihood, conservation, and aquaculture linkage. They comprised 184 primary or context-specific records and 13 secondary or conceptual publications.

Results: Mangroves occurred in 133 records (67.5%), seaweed or macroalgae in 35 (17.8%), and seagrass in 32 (16.2%). Conservation or management was identified in 147 records (74.6%), livelihood and economic use in 116 (58.9%), and aquaculture linkage in 32 (16.2%). Study settings were identifiable in 147 records; India and Indonesia were the most frequent, each occurring in 26 records. Categories were non-exclusive.

Conclusions: Analyzing all 197 eligible records removes the additional 30-record prioritization. Mangrove knowledge remains the most visible, while seaweed and seagrass evidence is less frequent but relevant to coastal aquaculture, food systems, habitat management, and livelihoods. The proposed framework connects these domains while recognizing the limits of record-level evidence.

Keywords: Aquaculture; Coastal communities; Ethnobotany; Local ecological knowledge; Mangrove; Seagrass; Seaweed; Traditional ecological knowledge

Background

Coastal communities draw on local and traditional ecological knowledge (TEK) to read seasonal change, locate resources, decide harvesting times, identify useful species, and respond to ecological disturbance. In many coastal landscapes, this knowledge is closely connected to three plant-based or plant-like resource systems: seaweeds or macroalgae, seagrass meadows, and mangrove forests. These systems provide food, medicine, raw materials, habitat, nursery grounds, shoreline protection, and income opportunities for small-scale fisheries and aquaculture households (Thaman 1992, Outeiro *et al.* 2015, Vierros 2017, Buenavista & Purnobasuki 2023).

Marine ethnobiology provides a broader disciplinary context for these relationships. It examines historical and contemporary interactions between people and marine organisms, including knowledge, nomenclature, harvesting, healing, food, trade, tenure, and management. Although these relationships are geographically widespread and often old, they remain less consolidated as a field than terrestrial ethnobiology (Narchi *et al.* 2014). Recent reflection has therefore called for marine ethnobiology to connect diverse knowledge systems with socially equitable and ecologically durable marine management, while avoiding the reduction of local knowledge to a source of management data alone (Espinoza-Tenorio 2025).

Mangrove scholarship illustrates both the depth and geographic breadth of these relationships. Mangrove forests have supplied wood, fuel, construction materials, tannins, medicines, food, fishing grounds, and income in distinct cultural and political-economic settings (Walters *et al.* 2008). Research led by Dahdouh-Guebas and collaborators further shows that ethnobotanical and fishery knowledge can be combined with ecological evidence to understand species preferences, resource dependence, and conservation priorities (Dahdouh-Guebas *et al.* 2006). Seaweeds and seagrasses likewise enter food, medicine, fertilizer, trade, gleaning, aquaculture, habitat knowledge, and customary management, but these relationships are often published under fisheries, marine ecology, or commodity studies rather than ethnobotany.

For aquaculture science, these resources are not only background ecosystems. Seaweed is a cultivated commodity and a household livelihood base in many coastal and island communities. Seagrass meadows support nearshore fisheries, gleaning, juvenile fish habitat, and invertebrate collection that often complement small-scale aquaculture livelihoods. Mangroves are linked to pond aquaculture histories, silvofishery, coastal water quality, seed collection, shoreline protection, and restoration practice. A review that places these three resources together can therefore help connect ethnobotany with ecosystem-based aquaculture and coastal livelihood planning.

Ethnobotany and ethnobiology are useful lenses because they examine how people classify, use, manage, and value biological resources in everyday life. In coastal settings, people-plant relationships are rarely limited to direct consumption. Knowledge may include the timing of seaweed harvest, signs of seagrass decline, mangrove species preferred for medicine or fuelwood, spiritual rules around coastal forests, and practical indicators used to judge water quality or habitat change (Albuquerque *et al.* 2014, Mendoza *et al.* 2024). These forms of knowledge are often transmitted through fishing, gleaning, farming, cooking, healing, ritual, and household work rather than through formal resource management documents.

Mangrove ecosystems are repeatedly presented as biocultural landscapes. In this review, a biocultural landscape means a place whose ecological features, biological resources, local knowledge, livelihood practices, memory, and management history have developed through continuing relationships between people and their environment. This usage follows the biocultural approach described by Maffi and Woodley (2010), rather than treating nature and culture as separate analytical domains. Mangroves supply timber, fuelwood, edible plant parts, traditional medicines, fish and crab habitat, and cultural spaces for communities living near estuaries and coastal wetlands. This helps explain why mangrove ethnobotany is more visible in the indexed literature than comparable work on seagrass and seaweed.

Seaweed and seagrass knowledge remains less consolidated in explicitly ethnobotanical literature. Seaweeds and macroalgae are used as food, medicine, fertilizer, trade goods, and aquaculture commodities (Outeiro *et al.* 2015, Aaron-Amper *et al.* 2025). Seagrass meadows are important for local ecological knowledge related to gleaning, fish habitat, dugong occurrence, shellfish collection, and nearshore resource decline (Cullen-Unsworth *et al.* 2018, Furkon *et al.* 2020, Naufal & Padmavati 2021). Yet these resources are frequently discussed under marine ecology, fisheries, or aquaculture rather than under ethnobotany. As a result, the cultural, household, and intergenerational dimensions of seaweed and seagrass knowledge may be less visible.

The distribution of coastal ecological knowledge is also shaped by gender, age, and livelihood specialization. Nearshore gleaning, seaweed collection, seaweed farming, and intertidal harvesting may involve women, children, and older community

members in ways that differ from offshore fishing, mangrove cutting, pond work, or formal restoration projects (Furkon *et al.* 2020, Maya Jariego *et al.* 2023, Merven *et al.* 2025). This matters because ethnobotanical knowledge is not held evenly across a community. It is learned through repeated practice in specific places, and it can be missed if research only interviews formal leaders, fishers, or resource managers.

Despite growing interest in coastal TEK, the literature remains fragmented. Some studies focus on mangrove species composition, medicinal potential, blue carbon, or restoration, while others document marine ecosystem services or fishing livelihoods without framing the plant-related knowledge as ethnobotanical (Gajardo *et al.* 2023, Tushingham *et al.* 2025, Wintah *et al.* 2026). This review therefore asks: how are seaweed, seagrass, and mangrove resources represented in Scopus-indexed coastal ethnobotanical literature, what knowledge domains are most visible, and how can this evidence inform aquaculture-oriented research and coastal governance?

The objectives of this review are to: (1) describe the thematic structure of the literature; (2) identify dominant and underrepresented resource groups; (3) examine how TEK is linked to livelihood, culture, food, medicine, conservation, ecosystem services, and aquaculture; and (4) propose a framework for future coastal ethnobotanical research that is useful for aquaculture science, marine science, and regional coastal planning.

Materials and Methods

Review design

This study used a systematic literature review design guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 statement (Page *et al.* 2021). The review combines bibliometric mapping with thematic coding so that both the conceptual structure of the field and the content of all records retained after eligibility screening can be examined.

The review was limited to Scopus-indexed records. This provides a transparent and reproducible database boundary, but it underrepresents local-language literature, community reports, theses, non-indexed regional journals, oral histories, and community-owned documentation. The limitation is therefore not only bibliographic. Database coverage, publication incentives, English-language terminology, and disciplinary indexing can privilege knowledge expressed through Western scientific categories while making embodied, relational, spiritual, and place-based knowledge less visible.

These filters are ontological as well as epistemological. Ontological filtering shapes what is recognized as a marine medicine, resource, or human-organism relationship, whereas epistemological filtering shapes whose observations, classifications, and modes of transmission count as valid evidence. This distinction is especially important in marine ethnomedicine. Narchi *et al.* (2015) document medicinal knowledge as a socially transmitted system shaped by community history, age, gender, access to health care, and relationships with marine organisms. By contrast, marine drug-discovery literature often organizes marine life through compounds, bioactivity, and pharmaceutical potential (Antunes *et al.* 2023). A compound-centered classification can document bioactivity while leaving healing relationships, ritual, tenure, oral transmission, and long histories of use outside the analytical frame. Both bodies of work can be valuable, but they answer different questions. A Scopus-based review can therefore map what indexed scholarship recognizes without being treated as a complete inventory of what coastal peoples know, use, or consider medicinal.

Search strategy

The search was executed on 10 June 2026. The query combined three concept blocks: ethnobotanical or local knowledge, coastal plant-based resources, and coastal or fishing community contexts. The search fields were title, abstract, and keywords (Table 1).

Table 1. Search strategy and database query parameters.

Parameter	Detail
Database	Scopus
Search date	10 June 2026
Search fields	Title, abstract, keywords
Core query	TITLE-ABS-KEY (ethnobotan* OR ethnobiolog* OR "traditional ecological knowledge" OR "local ecological knowledge" OR "indigenous knowledge" OR "local knowledge" OR "traditional knowledge") AND TITLE-ABS-KEY (seaweed OR seaweeds OR macroalgae OR "marine algae" OR seagrass OR

	seagrasses OR mangrove OR mangroves) AND TITLE-ABS-KEY ("coastal communit*" OR "fishing communit*" OR fisher* OR "small-scale fisher*" OR "local communit*" OR "indigenous communit*")
Initial records	291 records
Eligible candidate records	197 records after title and abstract screening
Thematic synthesis set	All 197 eligible records: 184 primary or context-specific and 13 secondary or conceptual publications

Eligibility criteria

Records were included when they discussed coastal plant-based resources and a clear human knowledge, use, or governance dimension. Studies were excluded when they focused only on biochemical properties, pharmacological screening, taxonomy, remote sensing, or fish stock assessment without a community knowledge component (Table 2).

Table 2. Inclusion and exclusion criteria.

Inclusion criteria	Exclusion criteria
Discusses ethnobotanical, ethnobiological, traditional, local, or indigenous knowledge.	Purely biochemical, pharmacological, taxonomic, or remote sensing studies without community context.
Discusses seaweed, macroalgae, seagrass, mangrove, or coastal vegetation.	Studies focused only on fish stocks without plant-resource knowledge or habitat-based local knowledge.
Involves coastal, fishing, indigenous, local, or traditional communities.	Studies lacking a clear human-community, livelihood, cultural, or socio-ecological dimension.
Peer-reviewed literature indexed in Scopus.	Records outside the conceptual scope after title and abstract screening.

Screening and evidence classification

The search yielded 291 records. No duplicates were detected in the exported dataset. Title and abstract screening excluded 94 records that did not meet the people-plant or community knowledge scope. All 197 records that met the stated eligibility criteria were retained for thematic synthesis; no subsequent relevance-based selection was applied.

The 197 eligible records were classified by evidence type to clarify their role in the synthesis. Primary or context-specific records reported evidence tied to a place, population, community, or dataset. Secondary or conceptual publications included reviews, syntheses, archival discussions, and conceptual analyses. This classification separated 184 primary or context-specific records from 13 secondary or conceptual publications without excluding either group.

All 197 eligible records were coded using the same resource and thematic categories. The classification and complete record list are provided in Supplementary Table S1 to make the analytical denominator and inclusion decisions transparent.

Data extraction and coding

Data were extracted into a structured matrix. The main extraction fields included author, year, location where available, resource focus, study type, knowledge holders, resource-use domains, conservation linkages, livelihood linkages, aquaculture relevance, and key findings. Thematic coding used binary presence or absence for broad categories and short notes for qualitative interpretation.

The resource categories were seaweed or macroalgae, seagrass, and mangrove. The knowledge-use domains were food, medicine, livelihood and economy, conservation, cultural value, and ecosystem services. An additional interpretive code was added for aquaculture relevance, including seaweed farming, aquaculture-adjacent livelihoods, habitat support for fisheries and aquaculture, mangrove-aquaculture interaction, and coastal planning relevance.

Bibliometric mapping

VOSviewer was used to map keyword co-occurrence from the exported metadata. The mapping was used as a descriptive tool rather than as a stand-alone basis for inference. Terms were interpreted alongside the thematic coding because bibliometric keywords can underrepresent local categories, vernacular terms, and culturally specific knowledge that may appear only in the body of full texts.

Geographic and institutional profiling

Study settings were coded from titles, abstracts, and keywords. A record could contribute to more than one country when it explicitly described a multi-country scope; country counts are therefore non-exclusive. Records without a reliably identifiable setting were retained and reported separately.

To examine where indexed research was produced, DOI- and title-linked OpenAlex metadata were used only to standardize author affiliation institutions. OpenAlex records were matched for 190 of the 197 included records, and institution metadata were available for 171. Each institution was counted once per record. This metadata enrichment did not affect screening, eligibility, or thematic coding, and institutional location was not treated as equivalent to the location of the community or knowledge documented.

Results

PRISMA screening flow

The revised PRISMA flow is shown in Fig. 1. From 291 initial records, 94 were excluded during title and abstract screening and all 197 eligible records were retained for thematic synthesis. The included set comprised 184 primary or context-specific records and 13 secondary or conceptual publications.

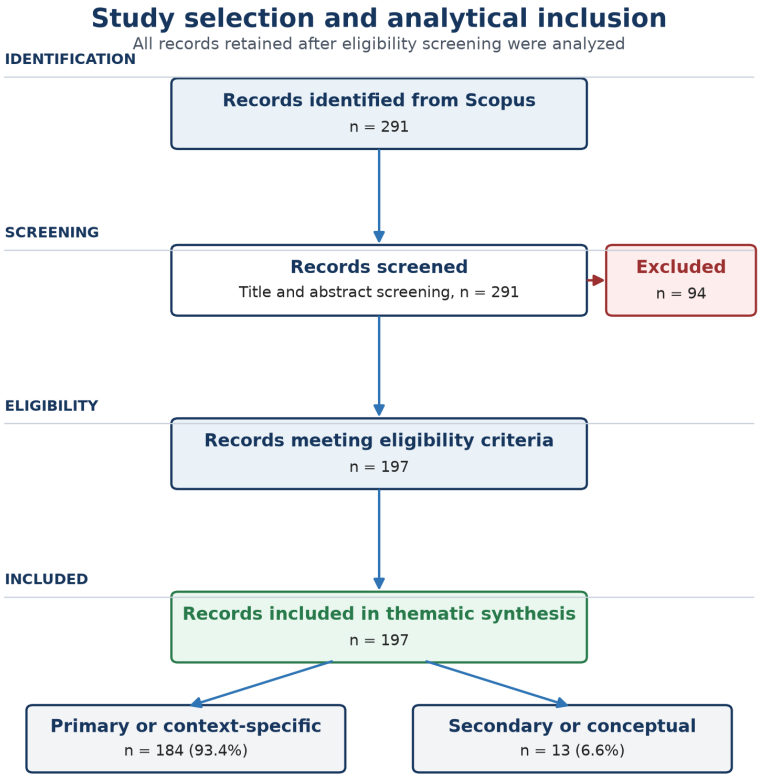


Figure 1. PRISMA-oriented flow diagram describing record identification, title and abstract screening, eligibility, and inclusion of all 197 eligible records in the thematic synthesis.

Thematic distribution

Across all 197 eligible records, conservation or management appeared in 147 records (74.6%), livelihood and economic use in 116 (58.9%), ecosystem services or habitat in 60 (30.5%), cultural or customary value in 47 (23.9%), medicinal or health use in 39 (19.8%), and food use or food security in 29 (14.7%). Because one record could receive several codes, these categories are non-exclusive.

The resource distribution remained uneven when all eligible records were included. Mangroves occurred in 133 records (67.5%), seaweed or macroalgae in 35 (17.8%), and seagrass in 32 (16.2%). Some records covered more than one resource category, so percentages are non-exclusive. Explicit aquaculture linkage was identified in 32 records (16.2%) (Table 3).

Table 3. Thematic summary across all 197 eligible records. Categories are non-exclusive.

Theme	Frequency	Percentage	Interpretation
Conservation or ıagement	147	74.6%	Includes management, protection, restoration, and conservation ncerns.
Livelihood and ɔnomy	116	58.9%	Includes household income, resource use, fisheries, markets, and lue chains.
Cultural or customary lue	47	23.9%	Includes identity, customary rules, tenure, ritual, and knowledge ınsmission.
Ecosystem services or bitat	60	30.5%	Includes habitat, nursery function, coastal protection, and ecological ɨicators.
Mangrove	133	67.5%	The most frequently represented resource group in the eligible set.
Food use or food ːurity	29	14.7%	Includes direct consumption, gleaning, and household food roles.
Medicinal or health e	39	19.8%	Includes medicinal use, health practice, and ethnopharmacological ntext.
Aquaculture linkage	32	16.2%	Includes seaweed farming, silvofishery, ponds, and aquaculture-ated livelihoods.
Seagrass	32	16.2%	Often linked to gleaning, nursery habitat, fisheries, and nearshore ɔd systems.
Seaweed or ıcroalgae	35	17.8%	Includes cultivation, harvest, food use, processing, and household ːome.

Keyword co-occurrence network

The VOSviewer map (Fig. 2) supports the thematic pattern found in the coding matrix. Terms related to mangroves, traditional knowledge, conservation, and ecosystem services formed the most central cluster. Seaweed and seagrass appeared closer to the margins of the network and were connected through terms such as fisheries, livelihood, coastal communities, and habitat.

This structure suggests that mangrove knowledge is more firmly integrated into the current ethnobotanical and conservation vocabulary. By contrast, seaweed and seagrass knowledge may be present in the literature but distributed across other disciplinary vocabularies, especially marine ecology, fisheries, and aquaculture.

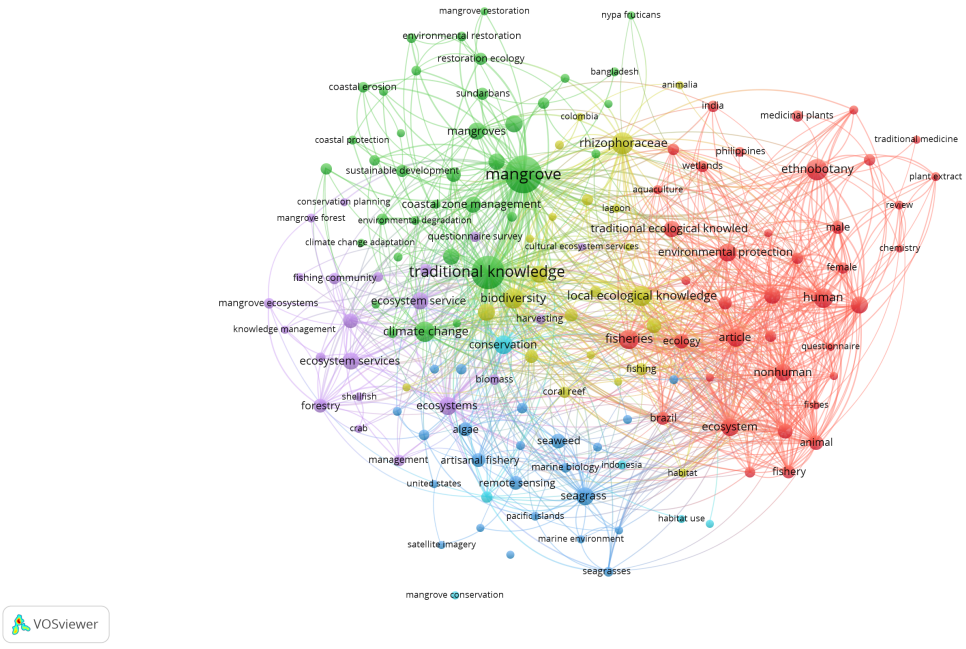


Figure 2. VOSviewer keyword co-occurrence network showing relationships among ethnobotany, traditional knowledge, mangrove, seagrass, seaweed, conservation, fisheries, livelihood, and ecosystem service terms.

Characteristics of included records

Table 4 distinguishes the two evidence classes retained in the synthesis. All 197 records contributed to the record-level thematic analysis, while the classification makes clear which publications reported primary or context-specific evidence and which provided secondary or conceptual material. Supplementary Table S1 provides the complete list of included records.

Table 4. Evidence classification of the 197 records included in the thematic synthesis.

Evidence class	Records	Percentage	Treatment	Definition
Primary or context-specific	184	93.4%	Included	Evidence tied to a place, population, community, or dataset.
Secondary or conceptual	13	6.6%	Included and identified separately	Reviews, syntheses, archival discussions, or conceptual publications.

Geographic and institutional distribution

A study setting could be identified for 147 of the 197 records (74.6%); 50 records did not provide a setting that could be assigned reliably from the bibliographic record. Under non-exclusive full counting, India and Indonesia each occurred in 26 records (13.2%), Brazil and the Philippines each in 14 (7.1%), the United Kingdom in 10 (5.1%), Australia in 9 (4.6%), Bangladesh in 8 (4.1%), and Mexico and Vietnam each in 6 (3.0%). These values describe settings named in the records, not author affiliations or national research capacity (Table 5).

Institutional metadata were available for 171 records. The leading organizations were Vrije Universiteit Brussel (11 records), Universitat Autònoma de Barcelona and James Cook University (9 each), Université Libre de Bruxelles (8), Project Seagrass and Swansea University (7 each), and Institut de Recherche pour le Développement and the Zoological Society of London (6 each). No institution occurred in more than 6.4% of records with affiliation metadata. The pattern indicates a dispersed research field, but it also shows that institutions based outside many study settings are prominent in indexed publication. Institutional output should therefore not be interpreted as ownership of the knowledge documented.

Table 5. Most frequently represented study settings and author affiliation institutions. Counts are non-exclusive.

Dimension	Country or institution	Records	Percentage
Study setting	India	26	13.2%
Study setting	Indonesia	26	13.2%
Study setting	Brazil	14	7.1%
Study setting	Philippines	14	7.1%
Study setting	United Kingdom	10	5.1%
Study setting	Australia	9	4.6%
Study setting	Bangladesh	8	4.1%
Study setting	Mexico	6	3.0%
Institution	Vrije Universiteit Brussel	11	6.4%
Institution	Universitat Autònoma de Barcelona	9	5.3%
Institution	James Cook University	9	5.3%
Institution	Université Libre de Bruxelles	8	4.7%
Institution	Project Seagrass	7	4.1%
Institution	Swansea University	7	4.1%
Institution	Institut de Recherche pour le Développement	6	3.5%
Institution	Zoological Society of London	6	3.5%

Note: Study setting percentages use all 197 included records. Institution percentages use the 171 records with institution metadata. OpenAlex was used for affiliation name standardization; institutional location does not identify the source or ownership of community knowledge.

Aquaculture-relevant knowledge domains

Although the search was framed through ethnobotany and TEK rather than aquaculture alone, several aquaculture-relevant domains emerged. First, seaweed studies show that community knowledge can inform species preference, harvest timing, post-harvest handling, market participation, and household adaptation during disruption (Outeiro *et al.* 2015, Aaron-Amper *et al.* 2025). These domains are directly relevant to small-scale seaweed aquaculture.

Second, seagrass studies emphasize habitat knowledge and gleaning systems. This is relevant to aquaculture because seagrass meadows support juvenile fish, invertebrates, and water quality conditions that influence broader coastal

production systems (Cullen-Unsworth *et al.* 2018, Furkon *et al.* 2020). Seagrass knowledge can help identify areas where aquaculture expansion should be planned carefully to avoid damaging nursery habitats.

Third, mangrove studies connect ethnobotanical knowledge with restoration, shoreline protection, wood and medicinal uses, and climate adaptation. These issues are relevant to brackish water aquaculture, silvofishery, pond rehabilitation, and coastal zoning. The evidence does not support a simple claim that mangrove knowledge automatically improves aquaculture outcomes, but it does show that mangrove TEK can provide locally grounded information for habitat-sensitive aquaculture planning.

Discussion

Mangrove visibility and its implications

Across the 197-record synthesis, mangrove-centered studies were more frequent than seaweed- and seagrass-centered studies. This suggests that mangroves have become the most visible coastal resource in ethnobotanical and socio-ecological research. Mangroves are physically distinct, directly used, culturally meaningful, and strongly linked to restoration, blue carbon, and coastal protection programs (Buenavista & Purnobasuki 2023, Mafaziya Nijamdeen *et al.* 2023, Siregar *et al.* 2025).

However, visibility is not the same as completeness. A mangrove-centered literature can provide rich evidence on coastal ethnobotany, but it may also narrow the field if seaweed and seagrass knowledge are treated as secondary. For aquaculture research, this imbalance matters because seaweed cultivation and seagrass-associated nearshore livelihoods are central to many coastal households. If ethnobotanical synthesis focuses mainly on mangroves, the knowledge used in seaweed farming, gleaning, seed selection, drying, processing, and household food systems may remain poorly connected to conservation and development policy.

The results therefore point to a need for balance. Mangrove ethnobotany should remain a strong research area, especially where customary use, restoration, and aquaculture interfaces are important. At the same time, coastal ethnobotany should more explicitly include seaweed and seagrass as resource systems with their own knowledge holders, use histories, and management challenges.

Seaweed and seagrass as underrepresented aquaculture-linked systems

Seaweed and seagrass appeared less frequently than mangroves across the 197 eligible records. This does not mean that they are unimportant. It more likely reflects differences in disciplinary framing. Seaweed is often studied as aquaculture, commodity production, or marine biotechnology, while seagrass is often studied as habitat, fisheries support, or conservation ecology. In both cases, people-plant relationships may be present but not named as ethnobotany.

For seaweed, ethnobotanical questions can strengthen aquaculture research by documenting local criteria for choosing cultivation sites, identifying useful strains or species, evaluating seasonal risk, managing post-harvest quality, and understanding household labor. For seagrass, local knowledge can help explain where people glean, which habitats are considered productive, how resource decline is recognized, and how community practices relate to seagrass protection. These knowledge domains are relevant for ecosystem-based aquaculture because farm development, coastal zoning, and restoration decisions often depend on local habitat knowledge.

The gender and generation dimensions are especially important. Women, children, and older residents may hold detailed nearshore knowledge because they participate in gleaning, seaweed drying, processing, household food preparation, or low-tide harvesting. If future research interviews only formal leaders or full-time male fishers, these domains may be missed. A stronger coastal ethnobotanical approach should therefore sample knowledge holders according to actual resource practice, not only formal occupation.

From use lists to socio-ecological interpretation

The strong presence of conservation, livelihood, cultural value, and ecosystem services suggests that coastal ethnobotany is moving beyond simple use lists. This is a positive development, but it also creates a methodological challenge. When TEK is used to support conservation, blue economy, or aquaculture planning, researchers must be careful not to extract knowledge without community benefit or consent.

Several reviewed studies imply that local people understand coastal plant resources through relationships among habitat, season, labor, history, and customary rules. This relational understanding is important for aquaculture. A seaweed farm is not only a production unit; it is part of household labor, market access, coastal tenure, water quality, and weather risk. A mangrove belt is not only a carbon stock; it is also a place of fishing, medicine, memory, protection, and sometimes conflict with aquaculture expansion. A seagrass meadow is not only habitat; it is also a gleaning ground and a seasonal indicator for community members.

For this reason, future aquaculture-oriented ethnobotany should treat knowledge as situated and negotiated. Quantitative coding can identify patterns, but participatory methods are needed to understand how knowledge is used in decisions and how benefits are distributed.

Methodological gaps

The review has four main methodological implications. First, Scopus-indexed literature underrepresents local-language, grey, oral, and community-owned knowledge. Second, this is an ontological and epistemological as well as a coverage problem: indexed literature can privilege externally defined resource categories, formal research institutions, and knowledge that is readily translated into conservation, pharmacology, or production outcomes. Third, keyword-based searches may miss aquaculture and fisheries studies that do not use ethnobotanical terminology. Fourth, including all 197 eligible records removes the earlier relevance-based selection step, but record-level coding from bibliographic fields still provides less detail than a full-text methodological appraisal. Quantitative results should therefore be read as patterns in indexed representation, not as measures of the total extent or validity of coastal knowledge.

The separation between study settings and author institutions reinforces this caution. Research about knowledge in India, Indonesia, Brazil, the Philippines, and other coastal settings is often produced through transnational institutional networks. Such collaboration can expand analytical capacity, but bibliometric visibility may still reflect funding, language, database access, and institutional power more strongly than the density of knowledge in a community. Absence or low frequency in this review must not be interpreted as absence of practice, history, or expertise.

Future reviews could improve the evidence base by adding databases such as Web of Science, Dimensions, Google Scholar, and regional databases; including Indonesian and other local-language terms; and coding method quality more explicitly. For field-based studies, quality appraisal should include whether knowledge holders were clearly described, whether gender and age were considered, whether consent and benefit sharing were addressed, and whether local communities were involved in interpretation.

Aquaculture-oriented Coastal Biocultural Knowledge Framework

To guide future research, we propose the Aquaculture-oriented Coastal Biocultural Knowledge Framework (Fig. 3). The framework places community knowledge holders at the center of interactions among resource systems, knowledge domains, aquaculture pathways, pressures, and safeguards.

The framework has five uses. First, it helps researchers identify knowledge holders according to practice, not only according to formal occupation. Second, it keeps seaweed, seagrass, and mangrove systems visible together while allowing each resource to have different knowledge domains. Third, it links ethnobotanical knowledge to aquaculture without reducing it to production. Fourth, it highlights pressures that can alter both ecosystems and knowledge transmission. Fifth, it requires safeguards so that TEK is documented through consent, attribution, and benefit-oriented collaboration.

For aquaculture science, the framework can support research questions such as: how do seaweed farmers identify suitable cultivation seasons; how do coastal households link seagrass condition with fish and invertebrate availability; how do mangrove-use rules affect pond rehabilitation or silvofishery; and how can local knowledge improve habitat-sensitive aquaculture zoning? For marine science, it supports habitat and ecosystem-service interpretation. For regional and rural development planning, it supports questions of tenure, access, livelihood diversification, and coastal governance.

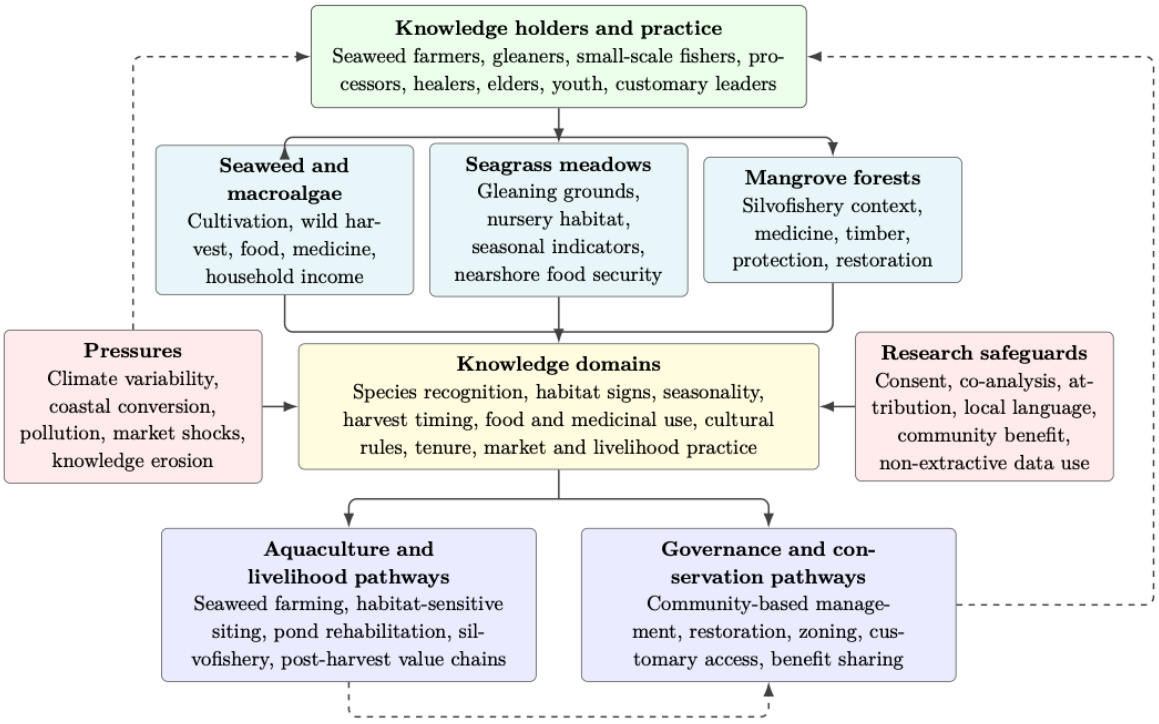


Figure 3. Aquaculture-oriented Coastal Biocultural Knowledge Framework. The framework links community knowledge holders, coastal resource systems, knowledge domains, aquaculture and governance pathways, socio-ecological pressures, and research safeguards.

Conclusion

This systematic literature review shows that ethnobotanical knowledge of seaweed, seagrass, and mangrove resources is linked to conservation, livelihoods, cultural values, ecosystem services, food, medicine, and coastal resource governance. Across all 197 eligible records, mangrove studies were more visible than seaweed and seagrass studies. This pattern should be interpreted within the Scopus and keyword boundaries of the review, but it indicates an imbalance in how coastal plant-based knowledge is framed.

The review also shows that aquaculture-relevant knowledge is present but not always named as aquaculture. Seaweed knowledge is connected to cultivation and household livelihoods. Seagrass knowledge is connected to gleaning, nursery habitats, and nearshore food systems. Mangrove knowledge is connected to restoration, coastal protection, silvofishery contexts, and brackish water aquaculture landscapes. Bringing these domains together can strengthen ecosystem-based aquaculture research and make coastal development planning more responsive to community knowledge.

Future work should extend the evidence base beyond Scopus, include regional and local-language databases, and apply full-text quality appraisal of methods, ethics, gender inclusion, and community benefit. Field studies should use participatory methods that allow coastal communities to interpret findings, define sensitive knowledge, and benefit from research outputs. The Aquaculture-oriented Coastal Biocultural Knowledge Framework offers one way to integrate ethnobotany, aquaculture science, marine ecology, and coastal planning without overclaiming what local knowledge can do or extracting it from the communities that sustain it.

Declarations

List of abbreviations: PRISMA - Preferred Reporting Items for Systematic Reviews and Meta-Analyses; SLR - Systematic Literature Review; TEK - Traditional Ecological Knowledge.

Ethics approval and consent to participate: Not applicable. This study is a systematic literature review and did not involve interviews, human participants, animals, field collection, or access to genetic resources. Compliance with the Nagoya Protocol on Access and Benefit Sharing is therefore not applicable to the present review.

Consent for publication: Not applicable

Availability of data and materials: The search strategy, screening logic, synthesis categories, and complete list of 197 included records are provided in the article and Supplementary Table S1. The Scopus export file and coding matrix can be made available by the corresponding author upon reasonable request, subject to database licensing restrictions.
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Author contributions: M.B. conceptualized the review, led the aquaculture framing, developed the search strategy, and drafted the manuscript. N.N. contributed to screening, data extraction, thematic coding, and interpretation of aquaculture-related resource use. F.A. contributed to the marine science interpretation, keyword mapping, and ecological synthesis of seaweed, seagrass, and mangrove systems. R.A.L. contributed to the coastal planning, livelihood, and governance interpretation and helped refine the conceptual framework. All authors reviewed and approved the final manuscript.

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Supplementary

This table lists all 197 records included after title and abstract screening. Resource and theme codes were derived from titles, abstracts, and keywords. Multiple codes could apply to one record.

Table S1. Record Level Evidence Map

No.	Authors	Year	Title	Resources	Evidence type	DOI
1	Mullick R.; Sinha S.; Samanta D.; Roy D.	2025	An Ethnobotanical survey of medicinal plants used by traditional healers in the Indian Sundarbans	Mangrove	Primary or context-specific	10.32859/era.31.29.1-11
2	Liebezeit G.; Rau M.T.	2006	New Guinean mangroves - Traditional usage and chemistry of natural products	Mangrove	Primary or context-specific	10.1007/BF03043698
3	Chewying K.; Gibbs M.; Przeslawksi R.; Rogers K.	2025	Braiding Indigenous oral histories and habitat mapping to understand urchin barrens in southern New South Wales	Seaweed or macroalgae	Primary or context-specific	10.1071/MF24117
4	Carrasquilla-Henao M.; Ban N.; Rueda M.; Juanes F.	2019	The mangrove-fishery relationship: A local ecological knowledge perspective	Mangrove	Primary or context-specific	10.1016/j.marpol.2019.103656
5	Schlacher T.A.; Lloyd S.; Wiegand A.	2010	Use of local ecological knowledge in the management of algal blooms	Seaweed or macroalgae	Primary or context-specific	10.1017/S0376892910000305
6	Queiroz L.D.S.; Rossi S.; Calvet-Mir L.; Ruiz-Mallén I.; García-Betorz S.; Salvà-Prat J.; Meireles A.J.D.A.	2017	Neglected ecosystem services: Highlighting the socio-cultural perception of mangroves in decision-making processes	Mangrove	Primary or context-specific	10.1016/j.ecoser.2017.06.013
7	Mittra C.R.; Saha A.K.; Uddin S.J.; Islam M.A.; Billah M.M.; Rouf R.; Shilpi J.A.	2026	Ethnomedicinal Knowledge of Forest-Dependent Communities in the Eastern Coastal Region of Khulna, Bangladesh	Mangrove	Primary or context-specific	10.1007/s10745-026-00662-9
8	Singh P.K.; Papageorgiou K.; Chudasama H.; Papageorgiou E.I.	2019	Evaluating the effectiveness of climate change adaptations in the world's largest Mangrove Ecosystem	Mangrove	Primary or context-specific	10.3390/su11236655

No.	Authors	Year	Title	Resources	Evidence type	DOI
9	Walters B.B.; Rönnbäck P.; Kovacs J.M.; Crona B.; Hussain S.A.; Badola R.; Primavera J.H.; Barbier E.; Dahdouh-Guebas F.	2008	Ethnobiology, socio-economics and management of mangrove forests: A review	Mangrove	Secondary or conceptual	10.1016/j.aquabot.2008.02.009
10	Blake S.D.; McPherson M.; Karnauskas M.; Sagarese S.R.; Rios A.; Stoltz A.D.; Mastitski A.; Jepson M.	2022	Use of fishermen's local ecological knowledge to understand historic red tide severity patterns	Seaweed or macroalgae	Primary or context-specific	10.1016/j.marpol.2022.105253
11	Rodine C.; Rakotoarimanana A.; Ramamonjisoa A.B.; Ranivoarivelo L.N.; Rakotomahazo C.; Todinanahary G.B.G.; Tsiresy G.; Jaonalison H.; Nomenisoa A.L.; Eeckhaut I.; Remanevy M.E.; Obe J.S.; Rasolofonirina R.; Lavitra T.	2024	Local knowledge, utilisation and consumption of seaweed in coastal communities of southwestern Madagascar	Seaweed or macroalgae	Primary or context-specific	10.2989/1814232X.2024.2371526
12	Kovacs J.M.	2000	Perceptions of environmental change in a tropical coastal wetland	Mangrove	Primary or context-specific	10.1002/1099-145X(200005/06)11:3<209::AID-LDR378>3.0.CO;2-Y
13	Nguyen T.P.; Luom T.T.; Parnell K.E.	2017	Developing a framework for integrating local and scientific knowledge in internationally funded environment management projects: case studies from Kien Giang Province, Vietnam	Mangrove	Primary or context-specific	10.1080/13549839.2017.1342617
14	Ridwan R.E.; Julianto M.A.; Marpaung P.N.; Utami A.R.; Ismail T.; Wijayanti S.W.; Subroto S.T.; Farizan D.; Ma'ruf K.; Setiawan R.J.	2025	Coastal Community Empowerment Based on Local Wisdom and Technological Innovation for Climate Change Adaptation, Erosion Control, and Sustainable Ecotourism Development	Mangrove	Primary or context-specific	10.36956/sms.v7i4.2701
15	Amores A.E.; Aguilar S.N.A.	2026	A quantitative and network analysis of traditional ecological knowledge on seagrass ecosystems in the Philippines	Seagrass	Primary or context-specific	10.13057/asianjethnobiol/y090104
16	Nayal R.; Thomas M.; Tripathi A.K.; Jaswal K.; Dasgupta R.; Hashimoto S.; Dhyani S.	2025	Relevance of community perceptions in mapping cultural ecosystem services: Lessons from bio-cultural landscape of Bhitarkanika Wildlife Sanctuary, Odisha	Mangrove	Primary or context-specific	10.1016/j.ocecoaman.2025.107626

No.	Authors	Year	Title	Resources	Evidence type	DOI
17	Pérez-Lloréns J.L.; Critchley A.T.; Cornish M.L.; Mouritsen O.G.	2023	Saved by seaweeds (II): Traditional knowledge, home remedies, medicine, surgery, and pharmacopoeia	Seaweed or macroalgae	Primary or context-specific	10.1007/s10811-023-02965-6
18	Quiroga-Manrique C.	2026	Climate eco-governmentality: Contested knowledge and the production of climate change geographies in Colombian mangrove ecosystem	Mangrove	Primary or context-specific	10.1177/25148486261447681
19	Chambon M.; Wambiji N.; Alvarez Fernandez S.; Azarian C.; Ngunu Wandiga J.; Vialard J.; Ziveri P.; Reyes-Garcia V.	2024	Weaving scientific and local knowledge on climate change impacts in coastal Kenya, Western Indian Ocean	Related coastal vegetation or habitat	Primary or context-specific	10.1016/j.envsci.2024.103846
20	Maya Jariego I.; Holgado D.; Castillo A.C.; Florido del Corral D.; Gòmez Mestres S.	2023	Children's interaction with ecosystem services in a mangrove forest: Perceptions of fisherfolks on the involvement of minors in fishing activities in the Gulf of Fonseca in Honduras	Mangrove	Primary or context-specific	10.1016/j.ocecoaman.2023.106502
21	Nfotabong-Atheull A.; Din N.; Essomè Koum L.G.; Satyanarayana B.; Koedam N.; Dahdouh-Guebas F.	2011	Assessing forest products usage and local residents' perception of environmental changes in peri-urban and rural mangroves of Cameroon, Central Africa	Mangrove	Primary or context-specific	10.1186/1746-4269-7-41
22	Sen A.; Mukherjee J.; Ghosh A.; Fickert T.	2025	For, of, and by the community: critical place-based reflections on mangroves regeneration in the Indian Sundarbans	Mangrove	Primary or context-specific	10.1093/cdj/bsae066
23	Mustonen T.	2021	Indigenous Ecological Reconstruction After Industrial Ruin in Two Iconic Sámi Catchments: Ethics of Comanagement?	Related coastal vegetation or habitat	Primary or context-specific	10.1177/1098214021997569
24	Sobhani P.; Danehkar A.; Deljouei A.; Marcu M.V.; Sadeghi S.M.M.	2025	Assessing cultural ecosystem services in the Hara mangrove forests: indicators for sustainable management in a Middle Eastern coastal marine protected area	Mangrove	Primary or context-specific	10.1016/j.ecolind.2025.113834

No.	Authors	Year	Title	Resources	Evidence type	DOI
25	Chávez-Páez W.; Rodríguez-de-Francisco J.C.; Koelle F.; Hornidge A.-K.	2025	Navigating the tides of conservation and conflict: the political ecology of Mangrove ecosystem sustainable use and custody agreements in the Gulf of Guayaquil, Ecuador	Mangrove	Primary or context-specific	10.1007/s40152-025-00444-x
26	Castellanos-Galindo G.A.; Chong-Montenegro C.; Baos E R.A.; Zapata L.A.; Tompkins P.; Graham R.T.; Craig M.	2018	Using landing statistics and fishers' traditional ecological knowledge to assess conservation threats to Pacific goliath grouper in Colombia	Mangrove	Primary or context-specific	10.1002/aqc.2871
27	Rakotonjanahary F.; Rakotomahazo C.; Nirinamamiko J.; Razakarisoa T.; Todinanahary G.G.B.; Lavitra T.; Lepoint G.; Vanderklift M.A.; Ranivoarivelo L.	2024	Use and management of seagrass ecosystems in southwestern Madagascar	Seaweed or macroalgae, Seagrass	Primary or context-specific	10.2989/1814232X.2024.2321857
28	Newmaster A.F.; Berg K.J.; Ragupathy S.; Palanisamy M.; Sambandan K.; Newmaster S.G.	2011	Local Knowledge and Conservation of Seagrasses in the Tamil Nadu State of India	Seagrass	Primary or context-specific	10.1186/1746-4269-7-37
29	Jones B.L.H.; Coals L.; Cullen-Unsworth L.C.; Lilley R.J.; Bartlett A.; Unsworth R.K.F.	2025	Mapping global threats to seagrass meadows reveals opportunities for conservation	Seagrass	Primary or context-specific	10.1088/2752-664X/adcacb
30	Puppin-Gonçalves C.T.; Medeiros L.L.L.D.; Lopes P.F.M.; Freire F.A.D.M.	2024	Ulva lactuca blooms through the eyes of fishers: Threats to vulnerable coastal communities	Seaweed or macroalgae	Primary or context-specific	10.1016/j.marpolbul.2024.117038
31	Tusing C.	2026	Seaweed as a keystone food: an ethnographic case study of coastal Lafkenche foodscapes	Seaweed or macroalgae	Primary or context-specific	10.5751/ES-16926-310106
32	Sanjatmiko P.; Wahyono T.H.; Purwanto S.A.; Sulistiawati D.	2025	Local scientists, global impact: a multispecies study of the Krida Wana Lestari mangrove farmers	Mangrove	Primary or context-specific	10.1080/23251042.2025.2587482
33	Martínez-Márquez C.A.; Sol Sánchez Á.; Zaldívar Cruz J.M.; Sánchez Soto S.; Del Rivero Bautista N.; Aliphat Fernández M.M.	2024	Local Use of Mangroves on the Coast of Southeastern México	Mangrove	Primary or context-specific	10.3390/resources13110154

No.	Authors	Year	Title	Resources	Evidence type	DOI
34	Dumilag R.V.	2018	Unmasking a cryptic ethnotaxon: a case study on the identity of Dermonema virens (Nemaliales, Rhodophyta) in the Philippines	Seaweed or macroalgae	Primary or context-specific	10.1080/00837792.2018.1437591
35	Mukhopadhyay P.	2022	The 'Fluid Landscape' of the Sundarbans: Critically Reviewing the 'Managed Retreat' Discourse	Mangrove	Secondary or conceptual	10.4103/cs.cs_210_20
36	Cervantes-Escobar A.; Ruiz-Luna A.; Berlanga-Robles C.A.	2023	Social perceptions of ecosystem services delivered by coastal wetlands: their value and the threats they face in northwestern Mexico	Mangrove	Primary or context-specific	10.15451/ec2023-02-12.06-1-15
37	Dutta S.; Das S.; Gorain S.; Kundu S.; Bera M.; Roy Choudhury M.; Bag S.; Das D.P.	2026	Unraveling anthropogenic and climate stressors in the Sundarbans and their ripple effects on livelihoods and ecosystems, and adaptation strategies for a sustainable future - A systematic review	Mangrove	Secondary or conceptual	10.1016/j.envdev.2025.101410
38	Vierros M.	2017	Communities and blue carbon: the role of traditional management systems in providing benefits for carbon storage, biodiversity conservation and livelihoods	Seagrass, Mangrove	Primary or context-specific	10.1007/s10584-013-0920-3
39	Husain F.; Kundi M.; Abdullah A.; Lyndon N.A.; Purnomo A.; Fajar; Wahidah B.F.; Yuniati E.	2024	The utilization of plants in traditional medicine and rituals of Karimunjawa Island community, Central Java, Indonesia	Seaweed or macroalgae	Primary or context-specific	10.21463/jmic.2024.13.3.07
40	Thoya P.; Owuor M.A.; von Thenen M.; Omukoto J.O.	2022	Variations in community perceptions of ecosystem services within the Tana River estuary, Kenya: Implications for ocean governance	Mangrove	Primary or context-specific	10.4314/wiojms.si2022.1.4
41	Song C.; Lim C.-H.; Choi H.-A.; Kim W.; Han D.; Paia M.T.; Ahn H.K.; Kang S.; Lee W.-K.	2025	Mapping ecosystem services based on citizen science for integrated coastal zone management in the Solomon Islands	Mangrove	Primary or context-specific	10.1016/j.ecoinf.2025.103142

No.	Authors	Year	Title	Resources	Evidence type	DOI
42	Badiane A.; Kasanoski D.S.; Mendes O.; Bonnet M.-P.; Sá E.R.M.	2026	Landscapes of uncertainty: Mangrove rice farmers' perceptions of rainfall variability and climate change adaptation in three coastal regions of Guinea-Bissau, West Africa	Mangrove	Primary or context-specific	10.1016/j.agwat.2026.110120
43	Venkatesan K.; Balakrishnan V.; Ravindran K.C.; Devanathan V.	2005	Ethnobotanical report from mangroves of Pichavaram, Tamil Nadu State, India	Mangrove	Primary or context-specific	
44	Cormier-Salem M.-C.; Van Trai N.; Burgos A.; Durand J.-D.; Bettarel Y.; Klein J.; Duc Huy H.; Panfili J.	2017	The mangrove's contribution to people: Interdisciplinary pilot study of the Can Gio Mangrove Biosphere Reserve in Viet Nam	Mangrove	Primary or context-specific	10.1016/j.crte.2017.09.001
45	Grimm K.E.; Archibald J.L.; Axelsson E.P.; Grady K.C.	2025	Moving social-ecological restoration forward: how mangrove project managers' perceptions of social monitoring and community engagement serve as a model for broader restoration efforts	Mangrove	Primary or context-specific	10.1111/rec.14273
46	de Oliveira CÔrtes L.H.; Zappes C.A.; Madeira Di Beneditto A.P.	2014	Ethnoecology, gathering techniques and traditional management of the crab Ucides cordatus Linnaeus, 1763 in a mangrove forest in south-eastern Brazil	Mangrove	Primary or context-specific	10.1016/j.ocecoaman.2014.03.021
47	Siregar E.S.; Jumilawaty E.; Tanjung M.; Risnasari I.; Basyuni M.; Syafitri A.; Hartanto A.	2025	Quantitative ethnobotany of mangrove plant uses by the coastal community of Sicanang Belawan, North Sumatra, Indonesia	Mangrove	Primary or context-specific	10.13057/biodiv/d261032
48	Beitl C.M.	2014	Navigating Over Space and Time: Fishing Effort Allocation and the Development of Customary Norms in an Open-Access Mangrove Estuary in Ecuador	Mangrove	Primary or context-specific	10.1007/s10745-014-9655-7
49	Biswas S.R.; Mallik A.U.; Choudhury J.K.; Nishat A.	2009	A unified framework for the restoration of Southeast Asian mangroves-bridging ecology, society and economics	Mangrove	Primary or context-specific	10.1007/s11273-008-9113-7

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50	da Silva F.R.M.; Noleto Filho E.M.; Gallina M.L.; Keppeler F.W.; Loiola M.; Giarrizzo T.; Reis-Filho J.A.	2023	From fisher tales to scientific evidence: revealing the significance of estuarine and mangrove habitats as nursery grounds for juveniles of the largest Atlantic Ocean snapper	Mangrove	Primary or context-specific	10.3389/fmars.2023.1292788
51	Dhyani S.; Shukla J.; Kadaverugu R.; Dasgupta R.; Panda M.; Kundu S.K.; Santhanam H.; Pujari P.R.; Kumar P.; Hashimoto S.	2023	Participatory Stakeholder Assessment for Drivers of Mangrove Loss to Prioritize Evidence-Based Conservation and Restoration in Bhitarkanika and Mahanadi Delta, India	Mangrove	Primary or context-specific	10.3390/su15020963
52	Ojeda J.; Rozzi R.; Rosenfeld S.; Contador T.; Massardo F.; Malebrán J.; González-Calderón J.; Mansilla A.	2018	Biocultural interactions of the Yaghan people with seaweeds and mollusks: Field environmental philosophy approach; [Interacciones bioculturales del pueblo Yagán con las macroalgas y moluscos: Una aproximación desde la filosofía ambiental de campo]	Seaweed or macroalgae	Primary or context-specific	10.4067/S0718-22442018000100155
53	Nguyen T.P.; Luom T.T.; Parnell K.E.	2017	Existing strategies for managing mangrove dominated muddy coasts: Knowledge gaps and recommendations	Mangrove	Secondary or conceptual	10.1016/j.ocecoaman.2017.01.016
54	Chakraborty P.; Singh S.J.; Patnaik P.; Panda D.; Silver J.J.; Nayak P.K.; Mukherjee P.; Mondal A.; Mondal D.; Mondol S.; Barman U.	2026	Designing information systems for equity and sustainability: enhancing resource access, capacity development, and governance in mangrove-dependent small-scale fisheries	Mangrove	Primary or context-specific	10.1007/s40152-026-00488-7
55	Gajardo L.J.; Sumeldan J.; Sajorne R.; Madarcos J.R.; Goh H.C.; Culhane F.; Langmead O.; Creencia L.	2023	Cultural values of ecosystem services from coastal marine areas: Case of Taytay Bay, Palawan, Philippines	Seaweed or macroalgae	Primary or context-specific	10.1016/j.envsci.2023.01.004
56	Bibi S.N.; Fawzi M.M.; Gokhan Z.; Rajesh J.; Nadeem N.; Rengasamy Kannan R.R.; Albuquerque R.D.D.G.; Pandian S.K.	2019	Ethnopharmacology, phytochemistry, and global distribution of mangroves-a comprehensive review	Mangrove	Secondary or conceptual	10.3390/md17040231

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57	Thaman R.R.; Puia T.; Tongabaea W.; Namona A.; Fong T.	2010	Marine biodiversity and ethnobiodiversity of Bellona (Mungiki) Island, Solomon Islands	Related coastal vegetation or habitat	Primary or context-specific	10.1111/j.1467-9493.2010.00391.x
58	Soganga Z.; Bradley G.; Witbooi H.	2025	Ethnomedicinal survey of coastal plants for economic development in the Eastern Cape province	Related coastal vegetation or habitat	Primary or context-specific	10.4102/jomped.v9i1.301
59	Wilson A.M.W.; Forsyth C.	2018	Restoring near-shore marine ecosystems to enhance climate security for island ocean states: Aligning international processes and local practices	Seagrass, Mangrove	Primary or context-specific	10.1016/j.marpol.2018.01.018
60	Buenavista D.; Purnobasuki H.	2023	People and Mangroves: Biocultural Utilization of Mangrove Forest Ecosystem in Southeast Asia	Mangrove	Primary or context-specific	10.21463/jmic.2023.12.2.07
61	Qasim M.; Gulzar S.; Shinwari Z.K.; Aziz I.; Ajmal Khan M.	2010	Traditional ethnobotanical uses of halophytes from Hub, Balochistan	Related coastal vegetation or habitat	Primary or context-specific	
62	Wintah; Sastranegara M.H.; Kiswanto; Fithor A.	2026	Species composition and medicinal uses of mangrove plants in Southwest Aceh, Indonesia	Mangrove	Primary or context-specific	10.13057/biodiv/d270321
63	Jones B.L.H.; Unsworth R.K.F.; Nordlund L.M.; Ambo-Rappe R.; La Nafie Y.A.; Lopez M.R.; Udagedara S.; Cullen-Unsworth L.C.	2022	Local Ecological Knowledge Reveals Change in Seagrass Social-Ecological Systems	Seagrass	Primary or context-specific	10.3390/oceans3030028
64	Safitri S.; Mulyadi A.; Nofrizal; Yoswaty D.	2024	Ecological and Potential Ethnobotanical Characterization of Mangrove Ecotourism Area Sungai Bersejarah, Siak Regency, Riau, Indonesia	Mangrove	Primary or context-specific	10.18280/ijsdp.190915

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65	Hagger V.; Stewart-Sinclair P.; Rossini R.A.; Adame M.F.; Glamore W.; Lavery P.; Waltham N.J.; Lovelock C.E.	2024	Lessons learned on the feasibility of coastal wetland restoration for blue carbon and co-benefits in Australia	Mangrove	Primary or context-specific	10.1016/j.jenvman.2024.122287
66	Takahashi M.A.; Nishida A.K.	2018	Traditional knowledge and variations in capture techniques used for blue land crab (Cardisoma guanhumi, L. 1825) along the coast of Paraíba, Brazil; [Conhecimento tradicional e as diferentes técnicas de captura do caranguejo goiamum (Cardisoma guanhumi, L. 1825) no litoral da Paraíba, Brasil]	Mangrove	Primary or context-specific	10.4025/actascibiolsci.v40i1.37743
67	Damastuti E.; de Groot R.	2019	Participatory ecosystem service mapping to enhance community-based mangrove rehabilitation and management in Demak, Indonesia	Mangrove	Primary or context-specific	10.1007/s10113-018-1378-7
68	Alan V.; Öndes F.	2026	Can no-fishing zones in marine protected areas be effective for the conservation of Posidonia oceanica seagrass meadows?	Seagrass	Primary or context-specific	10.12681/mms.41146
69	Elwin A.; Robinson E.J.Z.; Feola G.; Jintana V.; Clark J.	2024	How is mangrove ecosystem health defined? A local community perspective from coastal Thailand	Mangrove	Primary or context-specific	10.1016/j.ocecoaman.2024.107037
70	Adulcharoen W.; Suntornvongsakul K.; Lee Y.-S.	2020	Assessment of sustainable utilization of ecosystem services in different stages of mangrove forest restoration at klong khone sub-district, Samut Songkhram province, Thailand	Mangrove	Primary or context-specific	10.35762/AER.2020.42.1.4
71	Darkwa S.; Smardon R.	2010	Ecosystem restoration: Evaluating local knowledge and management systems of fishermen in Fosu Lagoon, Ghana	Mangrove	Primary or context-specific	10.1017/S1466046610000256
72	Reichel C.; Frömming U.U.; Glaser M.	2009	Conflicts between stakeholder groups affecting the ecology and economy of the Segara Anakan region	Mangrove	Primary or context-specific	10.1007/s10113-009-0085-9

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73	Magalhães K.M.; Deeks E.; da Silva Cerqueira A.; Silva G.H.F.; Santos F.A.; Dawson T.; Kratina P.	2026	Rapidly declining seagrass meadows in Brazil: Findings from satellite imagery and local knowledge	Seagrass	Primary or context-specific	10.1002/pan3.70272
74	Mendoza J.N.; Prūse B.; Ciriaco A.; Mendoza A.; Ciriaco H.; Buen C.; Pua J.J.; Primavera F.; Mattalia G.; Sõukand R.	2024	Fishery and ecology-related knowledge about plants among fishing communities along Laguna Lake, Philippines	Related coastal vegetation or habitat	Primary or context-specific	10.1186/s13002-024-00749-x
75	Machado D.	2007	Crab pickers and traditional knowledge in the conservation of Brazilian Amazonian Mangroves; [Catadoras de caranguejo e saberes tradicionais na conservação de Manguezais da Amazônia Brasileira]	Mangrove	Primary or context-specific	10.1590/s0104-026x2007000200016
76	Lovrić A.Z.; Rac M.; Mileković M.H.	2002	Diversity of old-Croatian names for seaweeds and maritime nature in the Adriatic Islands	Seaweed or macroalgae, Seagrass	Primary or context-specific	
77	Anbleyth-Evans J.; Leiva F.A.; Rios F.T.; Cortés R.S.; Vreni Haussermann; Aguirre-Munoz C.	2020	Toward marine democracy in Chile: Examining aquaculture ecological impacts through common property local ecological knowledge	Seaweed or macroalgae	Primary or context-specific	10.1016/j.marpol.2019.103690
78	de Souza F.V.B.; Pinheiro M.A.A.	2020	Environmental and socioeconomic perceptions about the extraction of 'uçá'-crab (Ucides cordatus) in the Estuarine System of Itanhaém (southeast Brazil): contributions to conservation and management; [Percepções ambientais e socioeconômicas acerca da extração do caranguejo-uçá (Ucides cordatus) no Sistema Estuarino de Itanhaém (SE Brasil): contribuições à conservação e ao manejo]	Mangrove	Primary or context-specific	
79	Lima M.S.P.; Oliveira J.E.L.; de Nóbrega M.F.; Lopes P.F.M.	2017	The use of Local Ecological Knowledge as a complementary approach to understand the temporal and spatial patterns of fishery resources distribution	Related coastal vegetation or habitat	Primary or context-specific	10.1186/s13002-017-0156-9

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80	Nijamdeen T.W.G.F.M.; Peruzzo S.; Kodikara K.A.S.; Ratsimbazafy H.A.; Nijamdeen T.W.G.F.A.; Thahira T.; Sajeevan T.; Kugathasan D.; Hugé J.; Dahdouh-Guebas F.	2024	Stakeholder perceptions in mangrove management in the Jaffna Peninsula, Sri Lanka	Mangrove	Primary or context-specific	10.1016/j.forpol.2024.103236
81	Chakraborty S.; Saha S.K.; Ahmed Selim S.	2020	Recreational services in tourism dominated coastal ecosystems: Bringing the non-economic values into focus	Mangrove	Primary or context-specific	10.1016/j.jort.2020.100279
82	Rajamani L.	2013	Using community knowledge in data-deficient regions: Conserving the Vulnerable dugong Dugong dugon in the Sulu Sea, Malaysia	Seagrass	Primary or context-specific	10.1017/S0030605312000154
83	Anand N.; Rachel D.; Thangaraju N.; Anantharaman P.	2016	Potential of marine algae (sea weeds) as source of medicinally important compounds	Seaweed or macroalgae	Primary or context-specific	10.1017/S1479262116000381
84	Costa M.D.P.; Yilmaz I.N.; Waryszak P.; Crofts R.; Wartman M.; Masqué P.; Singleton B.; Singleton G.; Skeene A.; Friend L.; Macreadie P.I.	2026	Indigenous stewardship and co-management in action: a case study on blue carbon from a mangrove ecosystem on the Great Barrier Reef	Mangrove	Primary or context-specific	10.1016/j.ocecoaman.2025.107971
85	Tan Phong N.; Hao Quang N.; Van Sang T.	2022	Shoreline change and community-based climate change adaptation: Lessons learnt from Brebes Regency, Indonesia	Mangrove	Primary or context-specific	10.1016/j.ocecoaman.2022.106037
86	van Luijk N.; Soldati G.T.; da Fonseca-Kruel V.S.	2021	The role of schools as an opportunity for transmission of local knowledge about useful Restinga plants: experiences in southeastern Brazil	Related coastal vegetation or habitat	Primary or context-specific	10.1186/s13002-021-00461-0
87	Pike F.; Jiddawi N.S.; Nordlund L.M.	2024	Intertidal gleaning fisheries: Recognising local-scale contributions and management scenarios	Seagrass	Primary or context-specific	10.1016/j.marpol.2024.106059
88	Lantaya G.A.; Madjos G.G.	2025	Economic Importance and Traditional Knowledge on Marine Macroalgae among Locals of Sacol Island, Zamboanga City, Philippines	Seaweed or macroalgae	Primary or context-specific	10.31632/ijalsr.2025.v08i03.013

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89	McKenzie L.J.; Yoshida R.L.; Aini J.W.; Andréfouet S.; Colin P.L.; Cullen-Unsworth L.C.; Hughes A.T.; Payri C.E.; Rota M.; Shaw C.; Skelton P.A.; Tsuda R.T.; Vuki V.C.; Unsworth R.K.F.	2021	Seagrass ecosystems of the Pacific Island Countries and Territories: A global bright spot	Seagrass	Primary or context-specific	10.1016/j.marpolbul.2021.112308
90	Mafaziya Nijamdeen T.W.G.F.; Ephrem N.; Hugé J.; Kodikara K.A.S.; Dahdouh-Guebas F.	2023	Understanding the ethnobiological importance of mangroves to coastal communities: A case study from Southern and North-western Sri Lanka	Mangrove	Primary or context-specific	10.1016/j.marpol.2022.105391
91	Herrera M.; Tubío A.; Pita P.; Vázquez E.; Olabarria C.; Simón A.; Balsa J.C.M.; Solís L.; Gianelli I.; Villasante S.	2023	Disentangling interactions between seagrasses and small-scale fisheries using scientific and local traditional knowledge	Seagrass	Primary or context-specific	10.1016/j.marpol.2023.105741
92	Alexopoulos K.; Grandjean T.J.; Miliou A.; Tsimpidis T.; McQuatters-Gollop A.	2025	Is sparse local ecological knowledge accurate enough for policy? A seagrass mapping case study from five Greek islands in the Eastern Aegean Sea	Seaweed or macroalgae, Seagrass	Primary or context-specific	10.1016/j.ocecoaman.2025.107627
93	Longépée E.; Abdallah A.A.; Jeanson M.; Golléty C.	2021	Local ecological knowledge on mangroves in mayotte island (Indian ocean) and influencing factors	Mangrove	Primary or context-specific	10.3390/f12010053
94	Nguyen T.P.; Tong V.A.; Quoi L.P.; Parnell K.E.	2016	Mangrove restoration: Establishment of a mangrove nursery on acid sulphate soils	Mangrove	Primary or context-specific	
95	Dahdouh-Guebas F.; Mathenge C.; Kairo J.G.; Koedam N.	2000	Utilization of mangrove wood products around Mida Creek “Kenya” amongst subsistence and commercial users	Mangrove	Primary or context-specific	10.1007/BF02866549
96	Mohamed M.K.; Adam E.; Jackson C.M.	2024	Assessing the Perception and Contribution of Mangrove Ecosystem Services to the Well-Being of Coastal Communities of Chwaka and Menai Bays, Zanzibar	Mangrove	Primary or context-specific	10.3390/resources13010007

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97	Amin M.N.	2003	The Sundarbans of Bangladesh: Its biodiversity, ethnobotany and conservation	Mangrove	Primary or context-specific	
98	Orario H.P.; Cai Q.W.; Chua J.K.C.; Magpayo E.S.N.; Po A.H.G.; Sanchez J.O.; Perez K.C.Q.; Solis K.J.; Ngo C.A.M.; VinceCruz-Abeledo C.C.	2021	How Filipino Fishers Use Traditional Knowledge in Identifying Species of Juvenile Mangrove Crabs for Grow-out Culture	Mangrove	Primary or context-specific	10.31398/tpjf/28.2.2021-0021
99	Pendleton A.; Carr L.M.	2023	Conflicts between traditional and modern governance structures in Irish seaweed harvesting	Seaweed or macroalgae	Primary or context-specific	10.1080/13549839.2022.2119376
100	Cheablam O.; Chanklap B.	2020	Sustainable Nipa Palm (Nypa fruticans Wurmb.) Product Utilization in Thailand	Mangrove	Primary or context-specific	10.1155/2020/3856203
101	Hassan M.K.; Jintana V.; Kuittinen S.; Pappinen A.	2018	Management Practices and Aboveground Biomass Production Patterns of Rhizophora apiculata Plantation: Study from a Mangrove Area in Samut Songkram Province, Thailand	Mangrove	Primary or context-specific	10.15376/BIORES.13.4.7826-7850
102	Miller M.A.; Tonoto P.	2023	Leveraging plural valuations of mangroves for climate interventions in Indonesia	Mangrove	Primary or context-specific	10.1007/s11625-023-01297-1
103	Rathcke K.; Qatsa M.; Burdenski A.; Jacobsen R.B.	2025	Understanding Marine Biodiversity Shifts in Southeast Greenland with Indigenous and Local Knowledge	Seaweed or macroalgae	Primary or context-specific	10.1007/s10745-025-00570-4
104	Alblooshi A.; El-Keblawy A.; Manikandan S.K.; Hasnain M.; Zainab R.; Soliman S.S.M.	2026	Gray mangrove (Avicennia marina): Ecological resilience, cultural heritage, and sustainable conservation in the arid arab region	Mangrove	Primary or context-specific	10.1016/j.rsma.2025.104694
105	Gills R.; Padua S.; Ramachandran C.; Thomas S.; Rajesh K.M.; Harshitha R.; Varghese E.; Vivekanandan E.; Ratheesh K.R.; George G.	2025	Climate change, adaptation pathways, and mitigation measures in coastal Karnataka: socio-ecological perspectives from marine fishing communities	Mangrove	Primary or context-specific	10.1007/s43538-025-00582-0

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106	Cullis-Suzuki S.; Wyllie-Echeverria S.; Dick K.A.; Sewid-Smith M.D.; Recalma-Clutesi O.K.; Turner N.J.	2015	Tending the meadows of the sea: A disturbance experiment based on traditional indigenous harvesting of Zostera marina L. (Zosteraceae) the southern region of Canada's west coast	Seagrass	Primary or context-specific	10.1016/j.aquabot.2015.07.001
107	Katili A.S.; Utina R.; Tamu Y.; Nusantari E.	2018	Management of coastal biodiversity based on social-cultural values in constructing conservation character education	Seagrass, Mangrove	Primary or context-specific	10.13057/biodiv/d190524
108	Deb A.K.	2015	"Something Sacred, Something Secret": Traditional Ecological Knowledge of the Artisanal Coastal Fishers of Bangladesh	Mangrove	Primary or context-specific	10.2993/etbi-35-03-536-565.1
109	Macreadie P.I.; Biddulph G.E.; Masque P.; Kennedy H.; Samper-Villarreal J.; Patrick Megonigal J.; Morrissette H.K.; Romero-Gonzalez T.E.; Hatje V.; Friedrich J.; Sasmito S.D.; Watanabe K.; Mazarrasa I.; Krause-Jensen D.; Adams J.B.; Cifuentes-Jara M.; Arias-Ortiz A.; Rovai A.S.; Stankovic M.; Isensee K.; Queirós A.M.; Chen L.; Herrera-Silveira J.; Hurd C.L.; Ismail R.; Krauss K.W.; Lafratta A.; Palacios M.M.; Austin W.E.N.	2026	Priority questions for the next decade of blue carbon science	Seaweed or macroalgae, Seagrass, Mangrove	Secondary or conceptual	10.1038/s41559-026-03020-6
110	Meireles V.J.S.; Meireles M.P.A.; Vieira F.J.; Campos J.B.; de Barros R.F.M.	2018	Traditional botanical knowledge and species conservation in the RESEX Delta do Parnaíba, Northeast Brazil; [Conhecimento botânico tradicional e conservação de espécies na RESEX Delta do Parnaíba, Nordeste do Brasil]	Mangrove	Primary or context-specific	
111	Mendoza J.N.; Hanazaki N.; Prūse B.; Martini A.; Bittner M.V.; Kochalski S.; Macusi E.; Ciriaco A.; Mattalia G.; Sõukand R.	2023	Ethnobotanical contributions to global fishing communities: a review	Related coastal vegetation or habitat	Secondary or conceptual	10.1186/s13002-023-00630-3
112	Mallo M.; Ziveri P.; Reyes-García V.; Rossi S.	2025	Temporal Shifts of Posidonia oceanica and Corallium rubrum in Cap de Creus (NE Spain): Recreational SCUBA diver's perception of change	Seagrass	Primary or context-specific	10.12681/mms.36446

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113	Omar K.; Abd El-Razek A.; Hamed Y.	2025	Mangroves as a nature-based solution: potential impacts of climate change and community-based mitigation measures for grey mangrove (Avicennia marina) along the Egyptian Red Sea coast	Mangrove	Primary or context-specific	10.1016/j.jnc.2025.126990
114	Arico Z.; Rahman A.; Akob B.; Jayanthi S.; Chairuddin	2023	Sustainable development based on indigenous knowledge in the coastal area of Aceh Tamiang, Aceh, Indonesia	Mangrove	Primary or context-specific	10.34044/j.kjss.2023.44.3.11
115	Begossi A.; Hanazaki N.; Peroni N.	2000	Knowledge and use of biodiversity in Brazilian hot spots	Mangrove	Primary or context-specific	
116	Tushingham S.; Hopt J.; Christiansen C.; Hawthorne P.; Bingham B.; Palmer E.; Sandhu U.; Roscoe J.; Eidsness J.P.; Kemp B.M.	2025	Biodiversity science of ancient fisheries: Archaeological indicators of eelgrass meadow health and indigenous (Wiyot) aquaculture, Humboldt Bay, CA	Seagrass	Primary or context-specific	10.1016/j.jas.2025.106267
117	Hardiana A.; Nurdin N.; Adhawati S.S.	2024	Socio and Spatial Economic of Kappaphycus alvarezii Cultivation in South Sulawesi, Indonesia	Seaweed or macroalgae	Primary or context-specific	10.21608/ejabf.2024.380385
118	Biswas C.; Channarayapatna S.V.; Pandey C.N.	2025	Multifaceted Livelihood Relations of Local Communities with the Indian Sundarbans Mangroves	Mangrove	Primary or context-specific	10.1007/s10745-025-00596-8
119	Djosetro M.; Behagel J.	2024	Including local knowledge in conservation planning: the case of the western coastal protected areas in Suriname	Mangrove	Primary or context-specific	10.1080/26395916.2024.2361683
120	Come J.; Peer N.; Nhamussua J.L.; Miranda N.A.; Macamo C.C.; Cabral A.S.; Madivadua H.; Zacarias D.; Narciso J.; Snow B.	2023	A socio-ecological survey in Inhambane Bay mangrove ecosystems: Biodiversity, livelihoods, and conservation	Mangrove	Primary or context-specific	10.1016/j.ocecoaman.2023.106813
121	Rosellón-Druker J.; McAdam-Otto L.; Suca J.J.; Seary R.; Gaytán-Caballero A.; Escobar-Briones E.; Hazen E.L.; Muller-Karger F.	2023	Local ecological knowledge and perception of the causes, impacts and effects of Sargassum massive influxes: a binational approach	Seaweed or macroalgae	Primary or context-specific	10.1080/26395916.2023.2253317

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122	Purwoko A.; Latifah S.; Bakti D.; Suratman M.N.; Tanjung J.A.; Tsaqofi N.U.	2026	Ethnoeconomic significance and sustainability of kepah (Meretrix meretrix) harvesting in Bagan Asahan, North Sumatra, Indonesia	Mangrove	Primary or context-specific	10.13057/asianjethnobiol/y090110
123	Thurstan R.H.; Brittain Z.; Jones D.S.; Cameron E.; Dearnaley J.; Bellgrove A.	2018	Aboriginal uses of seaweeds in temperate Australia: an archival assessment	Seaweed or macroalgae	Secondary or conceptual	10.1007/s10811-017-1384-z
124	Adams J.B.; Pattrick P.; Masqué P.; Adotey D.; Ali E.B.; Awatif A.B.M.; Ben Hamouda M.F.; Benmansour M.; Charles J.F.; Harlay J.; Human L.; Imbayi L.K.; Ismail R.O.; Machite A.; Mejjad N.; Mfikili A.N.; Mumo N.; Ndeye M.; Panassa W.E.; Sakho I.; Suleiman S.; Hatje V.	2026	Blue carbon stocks, accumulation rates and knowledge gaps in Africa	Seagrass, Mangrove	Secondary or conceptual	10.1016/j.ocecoaman.2026.108208
125	Ali M.I.; Malik A.; Aslinda A.; Umar R.; Dg Bau Q.	2025	Enhancing environmental education on Mangroves and climate change to achieve SDG 13 in coastal communities of South Sulawesi, Indonesia	Mangrove	Primary or context-specific	10.1080/10382046.2025.2524673
126	Pontón-Cevallos J.; Ramírez-Valarezo N.; Pozo-Cajas M.; Rodríguez-Jácome G.; Navarrete-Forero G.; Moity N.; Villa-Cox G.; Ramírez-González J.; Barragán-Paladines M.J.; Bermúdez-Monsalve J.R.; Goethals P.L.M.	2022	Fishers' Local Ecological Knowledge to Support Mangrove Research in the Galapagos	Mangrove	Primary or context-specific	10.3389/fmars.2022.911109
127	Arbiastutie Y.; Diba F.; Masriani	2021	Ethnobotanical and ecological studies of medicinal plants in a mangrove forest in mempawah district, west kalimantan, indonesia	Mangrove	Primary or context-specific	10.13057/biodiv/d220619
128	Sachithanandam V.; Lalitha P.; Parthiban A.; Mageswaran T.; Manmadhan K.; Sridhar R.	2019	A Review on Antidiabetic Properties of Indian Mangrove Plants with Reference to Island Ecosystem	Mangrove	Secondary or conceptual	10.1155/2019/4305148
129	Lauer M.; Aswani S.	2010	Indigenous knowledge and long-term ecological change: Detection, interpretation, and responses to changing ecological conditions in pacific island communities	Seaweed or macroalgae, Seagrass	Primary or context-specific	10.1007/s00267-010-9471-9

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130	Turner N.J.	2003	The ethnobotany of edible seaweed (Porphyra abbottae and related species; Rhodophyta: Bangiales) and its use by First Nations on the Pacific Coast of Canada	Seaweed or macroalgae	Primary or context-specific	10.1139/b03-029
131	Tamalene M.N.; Sen U.K.; Bhakat R.K.; Vianti E.; Bahtiar; Suparman	2021	Utilization of mangrove plants as a source of Malaria medicine in North Maluku Province, Indonesia	Mangrove	Primary or context-specific	10.13057/asianjethnobiol/y040203
132	Jayatissa L.P.; Hettiarachi S.; Dahdouh-Guebas F.	2006	An attempt to recover economic losses from decadal changes in two lagoon systems of Sri Lanka through a newly patented mangrove product	Mangrove	Primary or context-specific	10.1007/s10668-006-9045-4
133	Phong N.T.; Parnell K.E.; Cottrell A.	2017	Human activities and coastal erosion on the Kien Giang coast, Vietnam	Mangrove	Primary or context-specific	10.1007/s11852-017-0566-9
134	Cullen-Unsworth L.C.; Jones B.L.; Seary R.; Newman R.; Unsworth R.K.F.	2018	Reasons for seagrass optimism: Local ecological knowledge confirms presence of dugongs	Seagrass	Primary or context-specific	10.1016/j.marpolbul.2017.11.007
135	Duryat D.; Yuwono S.B.; Riniarti M.; Hidayat K.F.; Hidayat W.; Rodiani R.; Damai A.A.	2024	Mangrove Species Diversity and Its Use as Medicinal Plant by Coastal Communities of Lampung Timur Indonesia	Mangrove	Primary or context-specific	10.47352/jmans.2774-3047.217
136	Onwubiko C.C.; Aheto D.W.	2026	Perceptions and Awareness on the Perceived Effectiveness of Nature-Based Solutions in Selected Coastal Communities of Rivers State, Nigeria	Mangrove	Primary or context-specific	10.3390/coasts6010007
137	Quiao M.A.D.; Sanchez A.P.; Won M.E.Q.; Nabua E.B.	2025	Ethno-ecological significance and conservation implications of marine and coastal species in Misamis Oriental, Philippines	Seaweed or macroalgae, Seagrass, Mangrove	Primary or context-specific	

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138	Merven R.; Florens F.B.V.; Appadoo C.; Iranah P.	2025	Relational Values of Mangroves Shaped by Local Narratives, Social Changes and Gender Roles: Case Study of an Oceanic Island in the Western Indian Ocean	Mangrove	Primary or context-specific	10.1177/02780771251374889
139	Hernández Castillo D.; Prieto G.	2026	Tendencies on the use and circulation of seaweed along the Andean Coast: Past and present	Seaweed or macroalgae	Secondary or conceptual	10.1080/15564894.2025.2592950
140	García-Quijano C.G.; Lloréns H.; Griffith D.C.; Del Pozo M.H.; Poggie J.J.	2023	Coastal Forest Fisheries, Estuarine Livelihoods, and Human Well-being in Southern Puerto Rico	Mangrove	Primary or context-specific	10.1007/s10745-023-00449-2
141	Suwarno E.; Effendi I.; Matitaputty J.K.; Zainuri; Ra D.S.	2026	Institutional model for integrating Sasi and local wisdom into Indonesia's national mangrove conservation policy	Mangrove	Primary or context-specific	10.13057/biodiv/d270409
142	Awuku-Sowah E.M.; Graham N.A.J.; Watson N.M.	2023	The contributions of mangroves to physiological health in Ghana: Insights from a qualitative study of key informants	Mangrove	Primary or context-specific	10.1016/j.wss.2023.100137
143	Mendoza J.N.; Prūse B.; Mattalia G.; Kochalski S.; Prakofjewa J.; Buosi A.; Ciriaco A.; Primavera F.; Martini A.; Bittner M.V.; Sõukand R.; Sfriso A.	2026	Impacts of invasive algae from the perspective of fishers in the Lagoon of Venice, Northern Italy	Seaweed or macroalgae	Primary or context-specific	10.1016/j.marpol.2025.106903
144	Rahman S.A.; Yaakub S.M.	2020	Socio-economic valuation of seagrass meadows in the Pulai River Estuary, Peninsular Malaysia, through a wellbeing lens	Seagrass	Primary or context-specific	10.1071/MF19208
145	Ravaoarinorotsihoarana L.A.; Ratefinjanahary I.; Aina C.; Rakotomahazo C.; Glass L.; Ranivoarivelo L.; Lavitra T.	2023	Combining Traditional Ecological Knowledge and Scientific Observations to Support Mangrove Restoration in Madagascar	Mangrove	Primary or context-specific	10.3390/f14071368
146	Bandaranayake W.M.	1998	Traditional and medicinal uses of mangroves	Mangrove	Secondary or conceptual	10.1023/A:1009988607044

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147	Brown M.I.; Pearce T.; Leon J.; Sidle R.; Wilson R.	2018	Using remote sensing and traditional ecological knowledge (TEK) to understand mangrove change on the Maroochy River, Queensland, Australia	Mangrove	Primary or context-specific	10.1016/j.apgeog.2018.03.006
148	Hori M.; Hamaoka H.; Hirota M.; Lagarde F.; Vaz S.; Hamaguchi M.; Hori J.; Makino M.	2018	Application of the coastal ecosystem complex concept toward integrated management for sustainable coastal fisheries under oligotrophication	Seagrass	Primary or context-specific	10.1007/s12562-017-1173-2
149	Sahana M.	2025	Local and indigenous knowledge systems on nature-based solutions: Addressing Green Colonialism in Mangrove restoration of the Indian Sundarbans	Mangrove	Primary or context-specific	10.1016/j.polgeo.2025.103405
150	Leeney R.H.	2016	Fishers' ecological knowledge of sawfishes in Lake Piso, Liberia	Mangrove	Primary or context-specific	10.1002/aqc.2542
151	Walters B.B.	2000	Local mangrove planting in the Philippines: Are fisherfolk and fishpond owners effective restorationists?	Mangrove	Primary or context-specific	10.1046/j.1526-100X.2000.80035.x
152	Brattland C.; Eythórsson E.; Weines J.; Sunnanå K.	2019	Social-ecological timelines to explore human adaptation to coastal change	Seaweed or macroalgae	Primary or context-specific	10.1007/s13280-018-1129-5
153	Singh D.; Railoa K.	2023	Common traditional medicinal seaweeds used by Indigenous Fijians in Viti Levu, Fiji Islands	Seaweed or macroalgae	Primary or context-specific	10.1386/nzps_00147_7
154	Yue A.Y.; Satyanarayana B.; Rahim N.H.A.; Amir A.A.; Hugé J.; Dahdouh-Guebas F.	2025	Valuation of Ecosystem Services by Local Communities Around Matang Mangrove Forest Reserve, Malaysia	Mangrove	Primary or context-specific	10.1007/s12231-025-09650-4

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155	Gibbs M.C.; Parker L.M.; Scanes E.; Ross P.M.	2024	Recognising the importance of shellfish to First Nations peoples, Indigenous and Traditional Ecological Knowledge in aquaculture and coastal management in Australia	Mangrove	Primary or context-specific	10.1071/MF23193
156	Vergotine G.; Mazigo A.; Molebatsi P.; Ramsarup P.; Mayega J.; McCowan T.	2025	Co-creating climate knowledge: informal networks, local innovation, and ecosystem restoration in coastal Tanzania	Mangrove	Primary or context-specific	10.1080/13549839.2025.2579585
157	Zocchi D.M.; Mattalia G.; Santos Nascimento J.; Grant R.M.; Martin J.E.; Sexton R.; Romano C.; Pieroni A.	2024	Gathering and Cooking Seaweeds in Contemporary Ireland: Beyond Plant Foraging and Trendy Gastronomies	Seaweed or macroalgae	Primary or context-specific	10.3390/su16083337
158	Del Cid-Alvarado R.J.; Lopez O.R.; Rodríguez-González P.M.; Feás-Vázquez J.	2024	Social Perception and Engagement in Mangrove Restoration: A Case Study in Central America	Mangrove	Primary or context-specific	10.3390/land13111783
159	Nijbroek R.P.	2014	Mangroves, mudbanks and seawalls: Whose environmental knowledge counts when adapting to sea level rise in suriname?	Mangrove	Primary or context-specific	10.2458/v21i1.21150
160	McKenzie L.J.; Yoshida R.L.; Aini J.W.; Andréfouet S.; Colin P.L.; Cullen-Unsworth L.C.; Hughes A.T.; Payri C.E.; Rota M.; Shaw C.; Tsuda R.T.; Vuki V.C.; Unsworth R.K.F.	2021	Seagrass ecosystem contributions to people's quality of life in the Pacific Island Countries and Territories	Seagrass	Primary or context-specific	10.1016/j.marpolbul.2021.112307
161	Dahdouh-Guebas F.; Collin S.; Lo Seen D.; Rönnbäck P.; Depommier D.; Ravishankar T.; Koedam N.	2006	Analysing ethnobotanical and fishery-related importance of mangroves of the East-Godavari Delta (Andhra Pradesh, India) for conservation and management purposes	Mangrove	Primary or context-specific	10.1186/1746-4269-2-24
162	Purnaweni H.; Hadi S.P.; Soeprobowati T.R.; Roziqin A.; Rakhma N.A.	2026	What are the Main Concerns for Global Mangrove Management Re-search? Systematic Literature Review and Bibliometric Analysis	Mangrove	Secondary or conceptual	10.30564/re.v8i2.12149

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163	Atheull A.N.; Din N.; Longonje S.N.; Koedam N.; Dahdouh-Guebas F.	2009	Commercial activities and subsistence utilization of mangrove forests around the Wouri estuary and the Douala-Edea reserve (Csameroon)	Mangrove	Primary or context-specific	10.1186/1746-4269-5-35
164	Orario H.P.; Cruz-Abeledo C.C.V.	2024	Validation of Traditional Species Identification Techniques for Juvenile Mangrove Crabs (Scylla spp.)	Mangrove	Primary or context-specific	
165	Fendoung P.M.; Hubert−Ferrari A.; Schmitz S.; Tchindjang M.	2026	The vulnerability of Central Africa's estuarine population to forest degradation and coastal erosion	Mangrove	Primary or context-specific	10.1080/19376812.2025.2535594
166	Alphonse M.; Adhikari S.; Raja W.R.T.; Nallakaruppan N.; Veluchamy C.; Sekaran M.; Andandaraj P.; Nachiappan K.; Navapara R.; Doshi R.; Sabade N.; Perumal A.; Thiagarajan K.; Chandrasekaran R.	2023	Ethnobotanical and Traditional Knowledge on Psammophytic Plants: Southeast Indian Coastal Area	Mangrove	Primary or context-specific	10.21608/EJBO.2023.130140.1947
167	Barrera-Bello Á.M.; Rodríguez-Rodríguez A.; Palacios A.M.V.; Polanía J.; Riascos J.M.; Blanco-Libreros J.F.; Hugé J.; Dahdouh-Guebas F.	2025	Community-Based Mangrove Management in Sucre, Colombia: Stakeholder Perceptions, Land Cover Trends, and Challenges	Mangrove	Primary or context-specific	10.1007/s12231-025-09640-6
168	Marquez G.P.B.; Olavides R.D.	2024	Integrating science-based and local ecological knowledge: a case study of mangrove restoration and rehabilitation projects in the Philippines	Mangrove	Primary or context-specific	10.1111/disa.12630
169	Jones B.L.; Unsworth R.K.F.; McKenzie L.J.; Yoshida R.L.; Cullen-Unsworth L.C.	2018	Crowdsourcing conservation: The role of citizen science in securing a future for seagrass	Seagrass	Primary or context-specific	10.1016/j.marpolbul.2017.11.005
170	Kovacs J.M.	1999	Assessing mangrove use at the local scale	Mangrove	Primary or context-specific	10.1016/S0169-2046(98)00106-6

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171	Outeiro L.; Gajardo C.; Oyarzo H.; Ther F.; Cornejo P.; Villasante S.; Ventine L.B.	2015	Framing local ecological knowledge to value marine ecosystem services for the customary sea tenure of aboriginal communities in southern Chile	Related coastal vegetation or habitat	Primary or context-specific	10.1016/j.ecoser.2015.04.004
172	Arfan A.; Taufieq N.A.S.	2017	Mangrove forest management on local communitiesbased in South Sulawesi, Indonesia	Mangrove	Primary or context-specific	
173	Hema M.; Indira Devi P.	2014	Mangroves and dependent communities: Dynamics	Mangrove	Primary or context-specific	
174	Mozumder M.M.H.; Shamsuzzaman M.; Rashed-Un-Nabi; Harun-Al-Rashid A.	2018	Socio-Economic characteristics and fishing operation activities of the artisanal fishers in the Sundarbans mangrove forest, Bangladesh	Mangrove	Primary or context-specific	10.4194/1303-2712-v18_6_05
175	Biswas D.; Sinha P.; Sen A.; Mukherjee J.	2026	From ‘piecemeal efforts’ to ‘policy inclusion’: Exploring women's climate vulnerabilities and resilience in coastal mangrove communities of the Indian Sundarbans	Mangrove	Primary or context-specific	10.1016/j.wsif.2026.103336
176	Merkohasanaj M.; Cortez N.; Cunha-Queda C.; Andreetta A.; Cossa V.; Martín-Peinado F.J.; Temudo M.P.; Goulao L.F.	2025	Linking Soil Fertility and Production Constraints with Local Knowledge and Practices for Two Different Mangrove Swamp Rice Agroecologies, Guinea-Bissau, West Africa	Mangrove	Primary or context-specific	10.3390/agronomy15020342
177	Rahman K.-S.; Islam M.N.; Ahmed M.U.; Bosma R.H.; Debrot A.O.; Ahsan M.N.	2020	Selection of mangrove species for shrimp based silvo-aquaculture in the coastal areas of Bangladesh	Mangrove	Primary or context-specific	10.1007/s11852-020-00770-8
178	Dumilag R.V.; Malto M.A.D.; Longavela M.R.; Orgela E.G.; Calaminos F.P.; Legarde F.G.; Belgica T.H.R.; Malto A.D.; Himor J.P.A.; Pablo M.H.S.; Bailon J.D.; Olipany R.D.; Ruiz C.F.C.; Mintu C.B.; Laza B.O.; Mendoza L.C.	2023	Seaweed Fish Baits in Bulusan, Sorsogon, Philippines	Seaweed or macroalgae	Primary or context-specific	

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179	Denley D.; Frid A.; Hankewich S.; Lawson D.; Salomon A.	2025	Co-creating solutions to the hidden impacts of climate change on Canada's Pacific kelp forests	Seaweed or macroalgae	Primary or context-specific	10.1002/pan3.70049
180	Souto F.J.B.	2008	The mangrove forest and artisan fishing in the Acupe District (Santo Amaro, Bahia State, Brazil): An ethnoecological approach; [O bosque de mangues e a pesca artesanal no Distrito de Acupe (Santo Amaro, Bahia): Uma abordagem etnoecológica]	Mangrove	Primary or context-specific	10.4025/actascibiolsci.v30i3.5014
181	Semesi A.K.	1998	Coastal resources utilization and conservation issues in Bagamoyo, Tanzania	Mangrove	Primary or context-specific	
182	Dupont R.; Diallo K.; Georis S.; Kungula Makoso D.; Ximenes A.C.; Satyanarayana B.; Tarelkin Y.; Diouf Goudiaby K.; Hugé J.; Polanía J.; Dahdouh-Guebas F.	2025	Species-Poor Mangrove Forests also Provide Rich Ecosystem Goods and Services	Mangrove	Primary or context-specific	10.1007/s12231-024-09628-8
183	Nguyen T.P.; Van Tam N.; Quoi L.P.; Parnell K.E.	2016	Community perspectives on an internationally funded mangrove restoration project: Kien Giang province, Vietnam	Mangrove	Primary or context-specific	10.1016/j.ocecoaman.2015.10.008
184	Kovacs J.M.; Malczewski J.; Flores-Verdugo F.	2004	Examining local ecological knowledge of hurricane impacts in a mangrove forest using an analytical hierarchy process (AHP) approach	Mangrove	Primary or context-specific	10.2112/1551-5036(2004)20[792:elekoh]2.0.co;2
185	Cure K.; Depczynski M.; Radford B.; Howard A.; McCarthy P.; Pyke D.; Hickey S.; Ford B.; Barneche D.R.	2026	Habitat mosaics of mangroves and reefs support fisheries sustainability for Traditional Owners	Mangrove	Primary or context-specific	10.1016/j.ocecoaman.2026.108110
186	Balaji V.; Simon Selvaraj A.; Fernando J.O.N.; Murugesan G.; Ancy C.; Utthamapandian U.; Ananthi P.	2025	Traditional knowledge of seagrass distribution and phenology in the northern Palk Bay, Tamil Nadu, India	Seagrass, Mangrove	Primary or context-specific	10.6024/jmbai.2025.67.2.2609-11
187	Dumilag R.V.; Malto M.A.D.; Malto A.D.; Tagal S.R.B.; Escopete A.J.; Mirasol M.L.P.; Mintu C.B.; Olipany R.D.; Ruiz C.F.C.; Capacio I.T.	2023	Are the Fishers of Sorsogon Knowledgeable about and Willing to Farm the Seaweed Ulva?	Seaweed or macroalgae	Primary or context-specific	

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188	Merven R.; Appadoo C.; Florens F.B.V.; Iranah P.	2023	Dependency on Mangroves Ecosystem Services is Modulated by Socioeconomic Drivers and Socio-Ecological Changes - Insights From a Small Oceanic island	Mangrove	Primary or context-specific	10.1007/s10745-023-00464-3
189	Naufal M.; Padmavati G.	2021	Ethnobotany of three sea grass species from port blair, a step towards its conservation in andaman islands	Seagrass	Primary or context-specific	10.11594/jtls.11.01.02
190	Jones O.R.; Munuŋgurr L.; Munuŋgurr Y.; Marrkula T.; Wunuŋmurra B.; Rangers Y.; Hutley L.; Fryirs K.; Ens E.	2025	Carbon and corms: Introduced ungulates and saltwater intrusion variably impact coastal floodplain ecosystem services in the Laynhapuy Indigenous Protected Area, northern Australia	Mangrove	Primary or context-specific	10.1002/pan3.70153
191	Galvão M.L.; Rodrigues T.N.M.; Santos I.S.; Fernandes M.E.B.	2024	Traditional ecological knowledge of mangrove wood use on the Brazilian Amazon coast	Mangrove	Primary or context-specific	10.15451/ec2024-01-13.03-1-19
192	Carneiro D.B.; Barboza M.S.L.; Menezes M.P.	2010	Native plants used by Vila dos Pescadores community, Caeté-Taperaçu Marine Extractive Reserve, Amazon coast, Brazil; [Plantas nativas úteis na Vila dos Pescadores da Reserva Extrativista Marinha Caeté-Taperaçu, Pará, Brasil]	Mangrove	Primary or context-specific	10.1590/s0102-33062010000400017
193	Aaron-Amper J.; Acquio J.S.; Candontol C.S.; Antone J.E.I.; Balane H.O.; Cabrillos J.L.A.; Virtudazo M.A.S.J.; Buscato W.E.; Nini J.L.; Balabat J.A.; Calapan D.S.; Castil P.M.; Monotilla A.P.	2025	Knowledge on Seaweed Utilization in Small Island Communities of Danajon Bank, Central Philippines: A Small-Scale Fisherfolk Perspective Amidst Covid-19 Pandemic	Seaweed or macroalgae	Primary or context-specific	10.21463/jmic.2025.14.2.21
194	Furkon; Nessa N.; Ambo-Rappe R.; Cullen-Unsworth L.C.; Unsworth R.K.F.	2020	Social-ecological drivers and dynamics of seagrass gleaning fisheries	Seagrass	Primary or context-specific	10.1007/s13280-019-01267-x
195	Wallner-Hahn S.; Dahlgren M.; de la Torre-Castro M.	2022	Linking seagrass ecosystem services to food security: The example of southwestern Madagascar's small-scale fisheries	Seagrass	Primary or context-specific	10.1016/j.ecoser.2021.101381

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196	Sen U.K.; Bhakat R.K.	2020	Assessment of Psammophytic Medicinal Plant Diversity Used among the Rural Communities in Coastal East Midnapore, West Bengal, India	Mangrove	Primary or context-specific	10.1080/10496475.2019.1707736
197	Hoque Mozumder M.M.; Shamsuzzaman M.M.; Rashed-Un-Nabi M.; Karim E.	2018	Social-ecological dynamics of the small scale fisheries in Sundarban Mangrove Forest, Bangladesh	Mangrove	Primary or context-specific	10.1016/j.aaf.2017.12.002