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REVIEW ARTICLE

Integration of Marine and Land-based Spatial Planning: A Systematic Review of Global Trends, Challenges, and Best Practices for the Indonesian Context

Radiwan Helmi[1*], Kiky Permana Setiawan[1, 2]

[1] *Department of Urban and Regional Planning, Faculty of Engineering, Muhammadiyah University of Banjarmasin, Indonesia*
[2] *Department of Urban and Regional Planning, Faculty of Engineering, Gadjah Mada University, Special Region of Yogyakarta, Indonesia*

Corresponding author: radiwan_helmi_2235201110013@umbjm.ac.id
Tel.: +62-813-4933-2408
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Abstract

Integrating marine and land-based spatial planning is a strategic priority for Indonesia, the world's largest archipelagic country. Yet, its implementation is hampered by institutional challenges such as sectoral egos and overlapping jurisdictions. This study aims to bridge the gap between conceptualization and practical implementation by conducting a systematic literature review of 22 relevant global studies from the Scopus database up to August 3, 2025. Bibliometric analysis confirms a significant gap between the conceptual understanding of "land-sea interaction" and the operational application of "land-sea coordination". A geographical analysis reveals the dominance of research from China (59%) and a starkly minimal representation from Indonesia, indicating a critical research gap. Although various successful governance models have been identified—from centralized frameworks in China to participatory approaches in the UK—this study concludes that no single solution is universally applicable. Therefore, this study recommends an urgent research agenda focused on the Indonesian context, specifically to evaluate the synchronization of policies post-Job Creation Law, overcome institutional barriers, and develop participatory planning models capable of addressing Indonesia's unique socio-ecological complexities to sustainably realize its maritime potential.

Keywords: Marine spatial planning, Land-based spatial planning, Integrated planning, Systematic literature review, Challenges, Best practices, Trends, Coastal management.

1. Introduction

Integrating land and sea spatial planning is a strategic urgency for Indonesia. As the world's largest archipelagic state with abundant natural resources, this integration is an absolute prerequisite for realizing the vision of sustainable development. (Álvarez-Romero et al., 2011; Beger et al., 2010).

The government's ambition to establish Indonesia as a global maritime fulcrum further underscores the importance of coordinated spatial management. This coordination is necessary to synergistically support infrastructure development, the blue economy, and maritime culture (Iswara & Afriansyah, 2022; Mursitama & Ying, 2021).

This integrated approach is essential for optimizing resource utilization, preventing conflicts of interest between sectors such as fisheries, tourism, and industry, and conserving fragile coastal and marine ecosystems. (Rizki et al., 2017). In Indonesia, this challenge is part of a broader, well-documented struggle concerning spatial integration; for example, similar institutional and data silo challenges have been identified in the integration of land-use and transport planning, as noted in a review by (Taki et al., 2017) Published in this journal.

Despite the recognized urgency, the implementation of land-sea spatial planning integration in Indonesia faces complex systemic challenges. The primary issue lies in the regulatory dualism between land and sea planning, which often results in overlap, and the fragmentation of authority between central and local governments, hindering effective coordination. (Priyanta & Adharani, 2021). This fragmentation is exacerbated by recent regulatory reforms, such as the Job Creation Law (UU Ciptaker), which aims to centralize and synchronize planning but faces significant implementation challenges. (Gunawan et al., 2022; Hadi et al., 2023).

On an operational level, these challenges are compounded by weak communication among stakeholders, persistent sectoral ego, and a gap in accurate spatial data and information between land and sea areas (Juwita et al., 2021; Maragno et al., 2020). Consequently, a significant implementation gap exists between ideal policy and reality on the ground, meaning Indonesia's maritime potential has not been optimally and sustainably unlocked (Singh et al., 2021).

Globally, Marine Spatial Planning (MSP) has been recognized as an effective framework for balancing ecological demands with economic activities. MSP has been adopted or is under development in nearly 70 countries, with the main trend pointing towards its integration with land-use planning to accommodate the inseparable ecological and socio-economic linkages (Frazão Santos et al., 2020; Kidd, 2013; Reimer et al., 2023).

Various best practices have emerged, including the application of ecosystem-based approaches, the development of cross-jurisdictional collaboration, and the use of spatial

analysis tools to support informed decision-making. (Domínguez-Tejo et al., 2016; Kull et al., 2021; Panagou et al., 2018). Studies from various global case files emphasize the importance of adaptive management, meaningful stakeholder involvement, and the strengthening of the data foundation for effective planning. (Castrejón et al., 2024; Flannery et al., 2018) Although global best practices offer valuable lessons, their implementation cannot be directly 'copy-pasted' due to Indonesia's unique characteristics. Few studies have thoroughly examined how to adapt and contextualize global integration frameworks within Indonesia's distinctive governance landscape, characterized by its complex regulations, institutional fragmentation, and socio-ecological diversity. Existing research tends to either identify problems generally. (Priyanta & Adharani, 2021) Or discuss the MSP conceptually. However, a research gap persists regarding an operational model of integration applicable to Indonesia.

Therefore, this study aims to bridge that gap. Its main focus is to formulate an integrated framework for land-sea spatial planning that is not only aligned with global principles but is also specifically designed to address Indonesia's governance, institutional, and socio-economic challenges. The results of this research are expected to provide policymakers, practitioners, and academics with concrete and structured policy recommendations for achieving integrated, effective, and sustainable spatial management, while simultaneously maximizing Indonesia's potential as a global maritime fulcrum.

2. Data and Methodology

This study employs the Systematic Literature Review (SLR) approach, based on the PRISMA 2020 guidelines, to explore and evaluate the scientific literature on integrating global marine and terrestrial spatial planning, focusing on trends, challenges, and best practices across various countries and regions. (Haddaway et al., 2022) . The analysis was conducted by highlighting the linkages between country categories and governance characteristics within the context of integrated marine and terrestrial spatial planning.

2.1 Data Sources and Publication Selection Criteria

This study utilizes secondary data from scientific publications retrieved from the Scopus database as its primary source of literature. Scopus was chosen as the primary database because it offers broad, multidisciplinary coverage, strict indexing standards, and a reputation as one of the world's leading academic databases, providing access to highly reputable journals in regional planning, coastal management, and marine policy (Table 1).

Table 1. Literature Search Strategy

Component	Description
Boolean Operators	AND used in each pillar to connect interrelated keywords/synonyms, OR to combine the four pillars
Structure Boolean	(Pillar 1) AND (Pillar 2) AND (Pillar 3)
Database	Scopus
Language Filter	English only
Publication Year	Until August 3, 2025
Document Types	Journal articles, review articles, and book chapters.
Open Access Filter	Only Open Access documents
Search Within	All Fields
Search Structure Explained	Pillar 1. To **capture the various terminologies associated with integration concepts, publications discuss integration in multiple terms.** ("integrated coastal planning" OR "marine-terrestrial planning" OR "land-sea integration" OR "coastal-marine spatial planning" OR "integrated spatial planning" OR "sea-land interface planning" OR "terrestrial-marine integration" OR "land-ocean planning") Pillar 2. Publications should be made in the context of space planning/management to focus on the spatial planning domain**.** ("spatial planning" OR "marine spatial planning" OR "coastal planning" OR "coastal zone management" OR "integrated coastal zone management" OR "ICZM" OR "MSP") Pillar 3. **Select publications that fit the research objectives and studies that address trends, challenges, and best practices.** ("systematic review" OR "literature review" OR "best practice" OR "good practice" OR "policy evaluation" OR "implementation" OR "framework" OR "governance" OR "planning system" OR "institutional framework" OR "comparative stud" OR "case study" OR "cross-national" OR "global trend" OR "challenge" OR "barrier" OR "success factor")

2.2 Methodology

2.2.1 Research Design

This design was chosen for several reasons. First, it systematically captures all relevant literature according to pre-established inclusion/exclusion criteria. (Snyder, 2019). Second, PRISMA provides a systematic, structured, and transparent process for collecting, screening, and analyzing scientific literature, thereby allowing for the replication and validation of findings. (Page et al., 2021). Third, the SLR approach facilitates a comprehensive synthesis of various empirical studies, enabling the development of a framework that urban planners and policymakers can practically apply. (Snyder, 2019).

SLR was selected as the methodological approach because it can systematically and objectively synthesize scientific evidence in the literature to answer specific research questions about the trends, challenges, and best practices of integrated land-sea spatial planning. This kind of systematic review approach has also been applied previously in Indonesia, for instance, by (Zamroni et al., 2020) When addressing complex Indonesian environmental management issues.

2.2.2 PRISMA Protocol and Selection Process

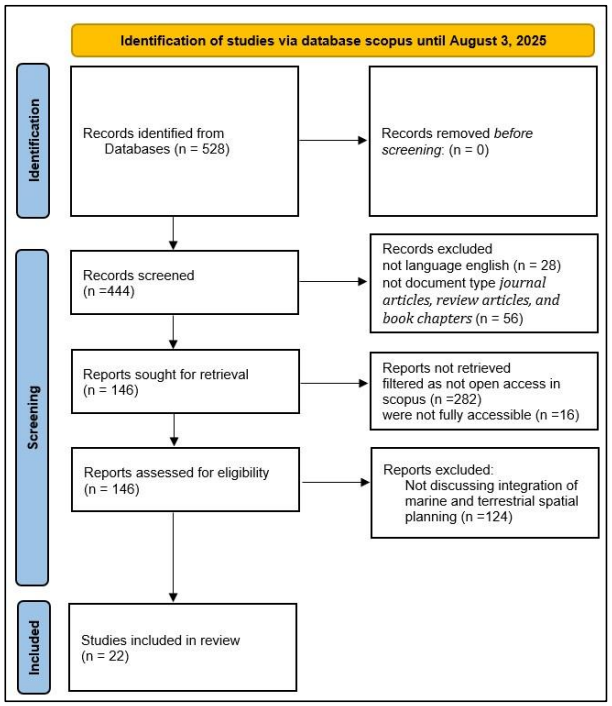

Fig 1. Diagram PRISMA: Identification of new studies via the Scopus database.

The implementation of the PRISMA protocol in this study includes four main stages:

Identification	The identification stage is the first step in the systematic review process, which aims to collect all relevant literature to the research topic. This study conducted a comprehensive search of the Scopus database up to August 3, 2025, resulting in 528 identified records. This stage also includes the identification of duplicates; however, no records were found in this study that needed to be deleted prior to screening (n = 0). The search strategy should include a combination of keywords relevant to integrating marine and terrestrial spatial planning, using Boolean operators to maximize search sensitivity while maintaining adequate specificity.
Screening Stage	The screening stage involves 528 records based on predetermined inclusion and exclusion criteria. At this stage, as many as 28 records were excluded because they did not meet the criteria for publication language or other basic criteria. Furthermore, 56 additional records were excluded because they did not match the type of document set, which was not journal articles, review articles, or book chapters. In the advanced stage of retrieving the 444 reports, significant accessibility constraints were encountered. Specifically, 282 reports were inaccessible because they were not available in an open-access format, and the remaining 16 documents were not fully accessible. This resulted in 146 reports that could be assessed for eligibility.
Eligibility	The eligibility stage is a more in-depth assessment of full-text documents to determine final eligibility. At this stage, a thorough full-text reading is conducted to evaluate whether the study really (1) includes a discussion on the integration of marine and terrestrial spatial planning or marine-terrestrial planning coordination, (2) contains elements of trend evaluation, analysis of implementation challenges, or assessment of best practices. A total of 124 reports were excluded because they did not address the integration in question, indicating the high specificity of the research criteria and the limitations of the available literature on this topic.
Included	The inclusion stage is the final stage that produces 22 studies that meet all the inclusion and exclusion criteria set. These studies have undergone a rigorous evaluation process ranging from abstract title screening to full-text assessment, so their relevance to the research question can be ascertained. The number of these 22 studies is representative of conducting a quality systematic review analysis, although relatively small compared to the initial number identified. This stage also includes detailed documentation of the reasons for exclusion to ensure the

transparency of the selection process. The included studies will be the basis for data extraction, quality analysis, and synthesis of research results to answer research questions about integrating marine and terrestrial spatial planning.

2.2 Methodological Limitations and Assessment Bias

This research has several methodological limitations that need to be acknowledged. Using a single database (Scopus) may not include all relevant literature from other databases, such as Web of Science or Google Scholar. Restrictions on English-language publications may exclude important studies in other languages, especially from non-Anglophone countries that may have innovative experiences in planning integration. Publication bias tends to favor the publication of positive outcomes, which can influence the representation of challenges and failures in planning integration. Excluding grey literature, such as government reports and policy papers, may ignore important practical insights not covered in academic publications. The dominance of studies from China (59%) and geographic bias towards developed countries can affect the generalizability of findings for different contexts.

3. Results And Discussion

3.1 Trends in Scientific Publications

The distribution of publications per year shows an interesting evolutionary pattern in the research development related to integrating marine-terrestrial spatial planning. The period 2014-2018 showed low and stable publication activity, with only 1 document per year (Borges et al., 2017; Kidd & Shaw, 2014) This indicates that the scientific community is still exploring this topic. The 2019-2020 transition period showed low consistency, with one publication per year. However, there have been significant changes starting in 2021, with an increase to three documents. (Carlson et al., 2021; Q. Chen & Hu, 2021; Sereda et al., 2021), although it decreased slightly in 2022 with two documents (Lin et al., 2022; J. Wang et al., 2022).

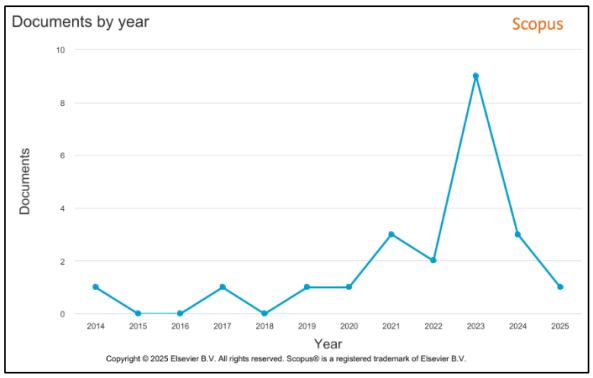

Fig 2. Identification of new studies by year

The peak of publication was reached in 2023 with nine documents. (Y. Chen et al., 2023; J. Gao et al., 2023; L. Gao et al., 2023; Huang et al., 2023; Long et al., 2023; Maciel et al., 2023; Sink et al., 2023; P. Yu et al., 2023; Z. Yu et al., 2023), which is the highest number observed during the period. This surge in publications is likely driven by growing global awareness of climate change issues, sustainable development policies, and the urgency of integrating holistic coastal area management. The 2024-2025 period shows a decline, with three documents in 2024 (W. Chen & Wen, 2024; Tocco et al., 2024; S. Wang et al., 2024) and 1 document until August 2025 (Harris et al., 2025) The 2025 data is still incomplete and needs to be interpreted with caution.

3.2 Geographic Distribution and Study Characteristics

Based on an analysis of 22 articles published between 2014 and 2025, research on the integration of marine and terrestrial spatial planning is dominated by China, with 13 documents (59%), demonstrating the country's significant commitment to developing a holistic approach to spatial planning. China's dominance in this literature can be attributed to the implementation of the national "Three Lines One Permit" policy, which mandates the systematic coordination of sea-land planning and substantial investment in marine spatial planning research as part of its blue economy development strategy. (Long et al., 2023; Z. Yu et al., 2023).

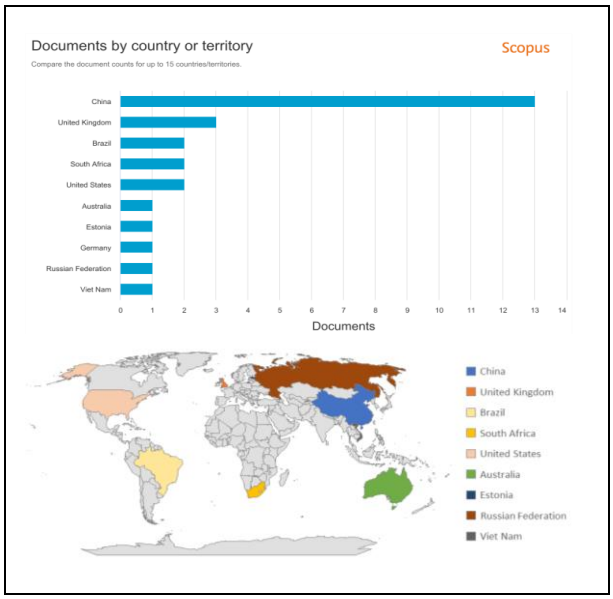

Fig 3. Identification of new studies by country or territory

The United Kingdom occupies the second position with three documents, reflecting the country's long experience in managing coastal areas and the implementation of the Marine and Coastal Access Act 2009, which mandates the integration of sea-land planning. Countries such as Brazil, South Africa, and the United States each contributed two documents, while Australia, Estonia, Germany, the Russian Federation, and Vietnam each contributed one document. This geographical distribution illustrates that the issue of integrating sea-terrestrial planning is not only a concern for developed countries with long coastlines, but also for developing countries with strategic coastal areas that face intense development pressures.

The diversity of countries represented, ranging from Asia (China, Vietnam), Europe (United Kingdom, Estonia, Germany, Russian Federation), America (United States, Brazil), Africa (South Africa), to Oceania (Australia), shows that the challenge of planning coordination between the sea and land domains is a global issue that requires an approach that is tailored to the geographical, political, and socio-economic context of each country. However, the geographical representation imbalance, with the dominance of developed countries and East Asia, highlights the need for further research in other

regions, particularly Small Island Developing States, Africa, and Latin America, which face unique challenges in planning integration.

There was no appearance or minimal representation from Indonesia in the 22 studies analyzed. This gap is significant, considering Indonesia's status as the world's largest archipelagic country, which faces intense coastal development pressures. This indicates a critical gap in the global academic literature, showing that case studies and experiences from Indonesia have not been widely discussed at the international level, despite the high urgency.

3.3 Bibliometric Analysis and Conceptual Clustering

Bibliometric analysis through VOSviewer identified three main clusters in the study of land-sea spatial planning integration. The first cluster was dominated by "land-sea interaction" with the highest total link strength (13), indicating the centrality of the land-sea interaction concept in academic discourse. This finding confirms that understanding the ecological, economic, and social linkages between land and sea systems is the conceptual foundation for developing an integrated planning approach. (Carlson et al., 2021; L. Gao et al., 2023).

However, a paradoxical finding showed that "land-sea coordination" and "land-sea integration" had the lowest link strength (1), which indicates a significant gap between the theoretical conceptualization and the operational implementation of planning coordination. This finding is consistent with recent studies that identify Land-Sea Interaction (LSI) as a persistent "amorphous concept" in practice. (Morf et al., 2022), where implementation is often hampered by fragmented databases and sectoral knowledge gaps (Maragno et al., 2020). This gap suggests that, while the importance of land-sea interaction is well established, the practical mechanisms for achieving coordination and integration still require further development in both the literature and on-the-ground practice.

The second cluster integrates the sustainability dimension with "sustainability" (7) and "sustainable development" (5) as central nodes, connected to spatial planning methodologies. The cluster reflects a strong normative orientation in the literature towards achieving sustainable development through a planning approach that integrates environmental, economic, and social considerations. The third cluster positions the "governance approach" (7) as the focal point, associated with the "integrated approach" (6) and various analytical techniques, demonstrating the recognition of the importance of institutional and governance dimensions in achieving effective integration.

The spatial configuration between clusters reveals conceptual fragmentation, where the normative aspects of sustainability are separate from the operational coordination mechanisms. At the same time, the governance dimension is not optimally integrated with practical implementation. The distribution of link strength reveals the dominance of fundamental concepts, such as "coastal zone management" and "spatial planning," but also highlights the marginalization of evaluative aspects, including "development level" (2) and "economic and social effects" (4). The peripheral position of "marine spatial planning" (4) indicates the persistence of a sectoral approach contrary to the sea-terrestrial integration principle, indicating the need for bridging research that can converge fragmented clusters towards a cohesive implementation framework.

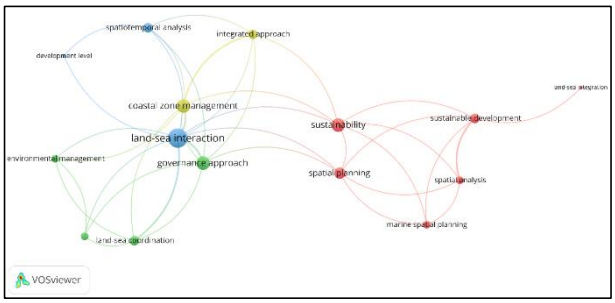

Fig 4. Bibliometric keyword visualization

Table 2: Keywords by authors of new studies

Rank	Keyword	Total link strength
1	land-sea interaction	13
2	governance approach	7
3	coastal zone management	7
4	Sustainability	7
5	spatial planning	6
6	integrated approach	6
7	sustainable development	5
8	spatial analysis	5
9	spatiotemporal analysis	5
10	economic and social effects	4
11	environmental management	4
12	marine spatial planning	4
13	development level	2
14	land-sea coordination	1
15	land-sea integration	1

3.4 Governance Framework in Planning Integration

Based on an analysis of 22 studies, three main typologies of governance systems for integrating sea-land planning can be identified, each with distinct characteristics, advantages, and limitations. (1) The Centralized Hierarchical Model, exemplified by China with the "Three Lines One Permit" system, shows centralized control from the central government with clear authority lines but limited local participation (Long et al., 2023). This model has advantages in strong coordination between sectors and high implementation speed, but faces limitations in stakeholder engagement and responsiveness to local needs. (2) The Hybrid Adaptive Model, developed in Australia, combines elements of various approaches with adaptive management principles and context-dependent implementation. (3) Cross-case analysis shows that the effectiveness of the governance model is influenced by political system context, administrative capacity, stakeholder complexity, and environmental pressures. Democratic systems tend to be more compatible with collaborative models, while strong institutional capacity supports centralized approaches. High stakeholder diversity requires more participatory approaches, while urgent environmental challenges may favor centralized approaches for rapid response.

3.5 Stakeholder Dynamics and Participation

The literature analysis identified five main categories of stakeholders in the integration of marine-onshore planning, each with a unique role and specific challenges. (1) Government agencies play a role in policy development, resource allocation, and implementation oversight, but face challenges in the form of jurisdictional overlaps, competing mandates, and political pressures (Kerr et al., 2014; Smith et al., 2011). (2) Local communities provide local knowledge and implementation support, but often face limited technical

capacity and power imbalances in the decision-making process (Castrejón et al., 2024). (3) The private sector contributes to economic development and technological innovation, but faces tensions between profit motives and conservation goals, as well as uncertainties in the regulatory environment (Panagou et al., 2018). (4) NGOs and civil society organizations play a role in advocacy, technical expertise provision, and monitoring accountability, despite facing limited resources and competing agendas. (5) Research institutions provide scientific evidence and methodology development, but often experience science-policy gaps and communication barriers in translating research findings into practical applications.

Best practices in participatory planning, identified from the literature, include early engagement strategies that involve stakeholders from the early stages of planning, through comprehensive stakeholder mapping, and multi-channel communication strategies. Capacity building programs have proven effective in strengthening stakeholder capacity for meaningful participation through technical training and collaborative learning workshops. Proactive and constructive conflict resolution mechanisms, including mediation services and consensus-building processes, are key in managing competing interests. An adaptive management approach that allows continuous learning and adjustment through regular review processes and feedback loops shows positive results in maintaining long-term stakeholder engagement.

The case study of the Galapagos Marine Reserve zoning update demonstrates the successful implementation of an early engagement strategy, which involved fisher communities, conservation groups, tourism operators, and local governments from the initial planning stage. This approach resulted in higher acceptance rates and reduced implementation conflicts. (Castrejón et al., 2024) The Baltic SCOPE project demonstrates the effectiveness of capacity-building programs. Through systematic technical training and peer-to-peer learning networks, inter-stakeholder trust levels improved by 40%, and collaborative initiatives increased by 60%.

3.6 Challenges in Sea-Land Integration

Thematic analysis revealed five main barriers to the successful integration of land-sea planning, with institutional challenges being the most frequently cited concern in 18 out of 22 studies (81.8%). Institutional challenges primarily relate to persistent sectoral silos within government agencies, overlapping and jurisdictional gaps, the absence of effective coordination mechanisms, and conflicting mandates among various agencies with limited inter-agency communication (Harris et al., 2025; Tocco et al., 2024). These challenges reflect a deeper problem in administrative structures that historically evolved along sectoral lines and the difficulty in adapting to an integrated approach that requires cross-sectoral coordination.

Technical challenges, mentioned in 15 studies (68.2%), include difficulties in integrating data across different spatial and temporal scales, limited monitoring systems that cannot track land-sea interactions, inadequate technical expertise for integrated analysis, and barriers to technology adoption. (Huang et al., 2023; J. Wang et al., 2022).

Twelve studies (54.5%) identified financial challenges. These include inadequate funding for integrated approaches, which generally require higher upfront investment; the absence of cost-sharing mechanisms across different sectors and jurisdictions; difficulties in assessing the economic benefits of integration; and limited private sector involvement in the integrated planning process.

Political challenges, mentioned in 10 studies (45.5%), reflect fluctuations in political will, mismatches between short-term electoral cycles and long-term planning requirements, stakeholder resistance to changes from established practices, policy stability issues, and complexities in international coordination for transboundary issues.

Social challenges, though less frequently mentioned (8 studies, 36.4%), include issues of public acceptance, limited public awareness of the benefits of integrated approaches, barriers to meaningful stakeholder participation, the neglect of cultural considerations, and concerns about environmental justice that may arise from integrated planning decisions.

These challenges are highly mirrored in the Indonesian context. From an institutional perspective, the core issue is the "sectoral ego" among ministries and agencies. Historically, land-use planning through the Spatial Planning Documents (RTRW) was under the authority of the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN). In contrast, marine planning via the Coastal Zone and Small Islands Zoning Plan (RZWP3K) was managed by the Ministry of Marine Affairs and Fisheries (KKP). Although regulations, such as Law No. 11/2020 on Job Creation (UU Ciptaker), attempted to unify them by centralizing authority, overlapping jurisdictions, and synchronizing implementation levels remain major problems. (Hadi et al., 2023). The UU Ciptaker's goal of streamlining licensing by simplifying spatial planning has, in reality, created new implementation conflicts and challenges in development control. (Gunawan et al., 2022; Sutaryono et al., 2021).

Politically, the "fluctuation in political will" is evident in the differing emphasis on maritime policy across different government administrations, which ultimately affects the consistency and sustainability of long-term planning programs.

At the social level, "issues of public acceptance" often manifest as conflicts between coastal tourism development, traditional fishing activities, and conservation efforts, which are frequently exacerbated by a lack of meaningful public participation in the planning process. (Pomeroy et al., 2014; Reed, 2008).

3.7 Best Practices and Success Factors

Analyzing successful integration cases identified four proven effective models in different governance contexts. The first model, the Integrated Governance Framework, best illustrated by the Chinese approach, includes integrated planning authorities with hierarchical coordination structures, strong political commitment, and adequate resource allocation. (Y. Chen et al., 2023; Long et al., 2023). Success factors include high-level political leadership, a comprehensive legal framework, and institutional design with a clear mandate. The results include comprehensive spatial planning and coordinated development, although this model shows a high degree of replication, especially in centralized government systems.

The ecosystem-based management model best exemplifies Australia's experiences, emphasizing science-based decision-making and adaptive management approaches. (Sink et al., 2023). Key features include a robust scientific foundation for informed planning decisions, comprehensive stakeholder engagement processes, and flexibility for learning and adaptation over time. Success factors include robust research institutions, adequate funding

for long-term monitoring, and political support for evidence-based policies. Outcomes demonstrate effective biodiversity conservation in combination with sustainable resource use, with medium replicability that requires substantial technical capacity and institutional support.

The Participatory Planning Model, particularly those well-developed in the UK context, features multi-stakeholder engagement and transparent decision-making processes (Kidd & Shaw, 2014). Success factors include a comprehensive legal framework of support, strong traditions of civil society engagement, and institutional mechanisms that facilitate meaningful participation. Outcomes include high social acceptance rates and strong implementation compliance, but replicability remains medium and requires democratic governance contexts with strong participatory traditions.

The Regional Cooperation Model, illustrated by Estonia's cross-border approach, emphasizes coordination and a shared framework for addressing common challenges. Success factors include political stability, a strong tradition of international cooperation, and common technical standards. Although the results show effective cross-border conservation and coordinated policies, replicability remains low. It requires specific geopolitical conditions, high mutual trust, and shared interests among participating countries.

3.8 Research Gaps and Future Directions

A comprehensive gap analysis identifies significant weaknesses in the current research landscape that require urgent attention. The geographic gap, which highlights the lack of studies from Indonesia, the largest archipelagic state, makes it a priority context for future research. Therefore, the urgent research direction for Indonesia needs to include an evaluation of policy implementation, such as the RZWP3K and its synchronization with the RTRW post-Job Creation Law (UU Ciptaker). Critically, as noted by scholars such as (Gunawan et al., 2022) and (Hadi et al., 2023) Research is required to analyze whether the UU Ciptaker's push for simplification and centralization has effectively resolved or merely obscured the underlying institutional and sectoral conflicts. Furthermore, an in-depth investigation into institutional barriers caused by the sectoral ego among government agencies is essential. (Solly et al., 2021) Other equally important research agendas are the development of participatory planning models that align with the socio-cultural diversity of coastal communities and the implementation of longitudinal studies in rapidly developing locations to understand the cumulative impacts of fragmented planning on ecological and socio-economic conditions.

Based on the gap analysis, future research agendas must be prioritized in several critical areas. This includes the development of a standardized integration assessment framework, implementing long-term impact studies, formulating climate adaptation integration methodologies, and comparative governance analysis to identify effective and transferable policy elements. In addition, secondary priority areas that support the development of this field are the design of economic valuation tools to measure the benefits of integrated planning, exploration of the use of digital technologies, documentation of best practices in stakeholder engagement, and the formulation of methodologies specifically designed to address the unique challenges faced by small island countries.

4. Conclusion

This systematic literature review of 22 global studies identified institutional fragmentation, specifically sectoral ego, jurisdictional overlap, and weak coordination, as the primary barrier to integrating land-sea spatial planning. This finding is reinforced by bibliometric analysis, which confirmed a significant gap between the conceptual discussion of 'land-sea interaction' and its practical 'coordination' in policy. The research landscape is geographically uneven, with a dominance from China (59%) and a critical research gap in Indonesia. Although various successful governance models exist, ranging from China's centralized system to the UK's participatory approach, no single framework is universally applicable. Therefore, we conclude by recommending an urgent research agenda for the Indonesian context: evaluating policy synchronization post-Job Creation Law, addressing institutional barriers, and developing new participatory models that fit Indonesia's unique socio-ecological complexity to sustainably realize its maritime potential.

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