

Can Natural Resource Governance Drive Sustainable Economic Development in Small Islands? A Systematic Literature Review

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ABSTRACT

There has been a growing attention in response to numerous multidimensional development challenges emerging within small island context such as vulnerability, geographic isolation, limited infrastructure, and high dependence on coastal and marine resources. Governance has increasingly arisen as a crucial factor affecting sustainable economic development and community resilience in such island context. This study aims to systematically review the current literature on natural resource governance and sustainable economic development in small islands. In specific, the review examines major research themes, governance approaches, livelihood strategies, and rising research gaps within the literature. This study employed a protocol adopted from PRISMA-based systematic literature review approach using the Scopus database. A total of 1,216 publications were initially identified using predefined search strings, followed by screening and eligibility assessment procedures. 16 articles were included in the final analysis. The findings reveal four dominant themes within the literature: collaborative and multi-scalar governance, blue economy transitions, social capital and islandness, and integrated sustainability frameworks. The review further shows that co-management and decentralized governance approaches positively influence livelihood diversification, fisheries sustainability, tourism development, and community resilience. Fisheries and tourism remain the dominant economic sectors, while alternative livelihoods such as aquaculture, homestay management, and marine creative industries are increasingly promoted to strengthen local economic resilience. Nevertheless, persistent challenges remain significant concerns. This includes elite capture, governance inequality, tourism dependency, and limited quantitative evidence.

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1. INTRODUCTION

Small Islands and Small Island Developing States (SIDS) are among the most environmentally vulnerable and economically recognized as facing

considerable challenges to pursue sustainable development [1], [2], [3]. Geographic constraints, limited land availability, dependence on natural resources, and climate change are among multidimensional

development challenges that directly affect local livelihoods and long-term sustainability [4], [5]. Meanwhile, small islands possess rich marine and resources that provide substantial economic opportunities through fisheries, marine tourism, aquaculture, and other coastal-based economic activities. These sectors play a major role in supporting livelihood creation, household income, food security, and regional economic development for local communities [6], [7], [8].

In many small-island contexts, natural resources function not only as ecological assets but also as the foundation of local economic systems and community survival. However, growing pressures from overexploitation, environmental degradation, tourism expansion, marine pollution, and climate change, exacerbated with inherent structural challenge such as limited infrastructure market barriers and weak institutional capacities have intensified pressures within coastal communities and island economies [8], [9]. Such circumstances often hinder the ability of island communities to diversify their economies and adapt to environmental and economic shocks. Accordingly, sustainable development in small islands needs governance systems capable of balancing economic growth, environmental protection, and social resilience simultaneously.

Recent literature emphasizes that effective governance of island economic development is determined by internal community factors, including community readiness, adaptive capacity and social capital [10], [11]. While the characteristics of small islands in smallness and boundedness have historically been seen as indicators of vulnerability, several studies suggest that these traits actually foster high levels of social cohesion, reciprocity, and localized agency [9]. For instance, models promoted in China's islands development context seek to achieve a sustainable balance between production, living standards, and ecological functions through integrated indicator systems [8].

Such collaborative approaches are particularly essential in small islands where conventional institutions, social cohesion, and

local environmental knowledge strongly influence the performance of resource management and adaptive capacity [12]. Despite the promising role of these collaborative models, the existing challenges including power inequalities between leading authorities and local communities disintegrated decision making, and the risk that economic benefits may be taken by external developers or local elites [13], [14]. Furthermore, the growing global discourse regarding sustainable development and blue economy has significantly attract scholar attention toward governance and economic shift in small islands. Concepts such as co-management, community-based resource governance, social-ecological resilience, and livelihood diversification have become increasingly noticeable in discussions of island sustainability [15], [16].

However, the literature on small-island development remains fragmented across disciplinary frontiers. Moreover, various studies demonstrate significant inconsistencies regarding the effectiveness of governance approaches in promoting equitable and sustainable development. Therefore, these contradictions need a deeper understanding of how governance approaches influence local prosperity and community participation. This means to identify essential pathways toward sustainable island development. This study proposes a systematically review current literature on natural resource governance and sustainable economic development in small islands in gaining deeper understanding on how governance systems shape island economic development. This study contributes to the growing discourse within development economics and environmental governance, delivering both conceptual insights for future research and policy implications for strengthening inclusive, adaptive, and sustainable governance in small islands.

2. METHODS

The study employed a Systematic Literature Review (SLR) technique, which is crucial for building strong foundations for future research projects by carefully examining and recording the current state of knowledge gained from numerous literatures [17]. The study of literature was carried out using the PRISMA guidelines by [18] and strictly adhere a predefined protocol. The literature search was conducted using Scopus journal databases. The selection process consisted of four stages including identification, screening, eligibility assessment, and data extraction.

2.1 Research Goal and Questions

This study aims to systematically synthesize existing evidence on how natural resource governance and economic development have been studied in the context of small islands. We formulated this goal into four research questions:

- RQ1: What are the dominant themes and trends in the literature on natural resource governance and economic development in small islands?
- RQ2: How do governance approaches influence economic development in small island communities?
- RQ3: What economic sectors and livelihood strategies are most frequently discussed in small-island development studies?
- RQ4: What research gaps and future directions emerge from the existing literature on governance and economic development in small islands?

2.2 Search and Data Extraction Strategy

A combination of keywords associated with searching strategy is to target the focus of the research in the Scopus databases. The co-authors reviewed and adopted the search syntax as described below: ("small island*" OR "island communit*" OR "small island developing state*") AND ("natural resource governance" OR "resource governance" OR "natural resource management" OR "marine

governance") AND ("coastal economic development" OR "coastal economy" OR livelihood* OR income OR employment OR poverty OR tourism OR fisheries")

The search syntax is designed to encompass all critical subject areas relevant to the research. A total of 1,216 publications were identified by inputting the search syntax in Scopus databases. Various inclusion and exclusion criteria were adopted to refine the search results and screen the articles for the systematic review, ensuring alignment with the research focus. The following inclusion criteria were used as the first stage of screening for the database search. Year period: 2020 to 2026, Region: Global, Type: articles, Language: English, Subject areas: Environmental Science, Social Science, and Economics, Econometrics and Finance. A total of 1,216 articles were exported and imported into Rayyan AI for screening. 4 duplicates were identified and excluded.

The second stage was to screening the titles and abstracts of the 1,214 data to ensure alignment with the research focus. Articles not explicitly related to natural resource governance and economic development in small islands were excluded. In correspondence with data extraction strategy, we outlined the extraction protocol adopted for examining the themes from the 15 papers selected for the SLR. In order to facilitate synthesis and the descriptive and thematic analysis, the resulting codes were subsequently exported into Microsoft Excel.

3. RESULTS AND DISCUSSION

According to the sources provided, we comprehensively synthesis and explain the based on the research questions which are revealed the economic development and the governance of natural resources in small islands progressed toward more integrated approaches. These include a combination of dominant themes which propose a multidimensional mechanism ranging from institutional governance, livelihood sustainability, environmental resilience and community based-economic development. The findings further determine that small

islands are not illustrated by structural challenges such as remoteness, lack of infrastructure and ecological vulnerability, but also poses significant potentials in terms of social and institutional capacities that promote adaptive development pathways. The systematic literature review highlights four analytical aspects in natural resources governance and economic development on small islands.

3.1 Dominant Themes on Small Island Governance and Economic Development

The literature reveals a major focus on resilience and collaboration as part of dealing mechanisms amidst global pressures. Key themes include:

1. Collaborative and Multi-scalar Governance

A significant trend identified is the transition from top-down management to collaborative arrangement that link local, national, and regional scales [19]. The recent research supports governance systems that incorporate local communities, regional authorities, national governments, and international organizations rather than depending exclusively on centralized governing structures [4]. This comprises "sub-regional pooling" and international cooperation to manage transboundary marine resources for food security [1], [19]. These governance mechanisms are able to reduce institutional disintegration and improving policy harmonization across administrative scale.

This shift reflects an important aspect within institutional economics, where institution is seen as a significant determinant to boost economic performance and resource sustainability, rather than rely on administrative structure [20]. Consequently, the role of institution becomes critical in the context of small islands. Characterized by limited natural resources, these environments are highly vulnerable to "the tragedy of the commons" through exploitation. [21] emphasized the necessity of institutional "rules of the game" to ensure that such

common-pool resources are allocated sustainably.

2. The Transition of Blue Economy Concept

For the recent trend, blue economy is dominant narratives as policy frameworks for small islands. The reviewed studies demonstrate a strong focus on transitioning island economies from extraction-based livelihoods to sustainable, tourism-based "blue food" systems to protect fragile ecosystems [1], [22]. Even so, a number of studies also highlight conflicts in the application of this concept [23], [24]. Contending that traditional fishing communities are routinely marginalized by tourism expansion, marine privatization, or conservation legislation, scholars note that these activities can create social inequality. As a result, there is a growing body of literature advocating for balanced governance models that carefully strike a harmony between social justice, ecological preservation, and economic growth goals.

3. Social Capital and the Concept of "Islandness"

Recent studies emphasize that the physical characteristics of islands, smallness and boundedness, are not just vulnerabilities but can be strengths [9]. These foster high levels of social capital (trust, reciprocity, and shared norms). These strengths become even more important for the island community during environmental pressure and economic crises. which underpin community-led disaster recovery and food security. Such community-based governance systems, which frequently rely on local knowledge, customary institutions, and collective action mechanisms, are successfully dealing with food scarcity and natural disasters while managing marine resources sustainably [25]. These empirical findings directly support core arguments within the Social-Ecological Systems (SES) framework, which suggests that adaptive capacity in highly vulnerable regions is fundamentally formed by local institutional embeddedness and collaborative community networks [26].

4. Integrated Sustainability Indicators

The reviewed literature also demonstrates methodological shift toward integrated sustainable assessment models. This emerging model was used as an initiative for comprehensive indicator in China's "Harmonious and Beautiful Islands" systems to balance production, living standards, and ecological health [8]. From this finding, there is an empirical importance to emphasize the balancing aspects of environmental quality, production capacity, infrastructure development, and community welfare simultaneously. Such models move beyond conventional economic dimension which is measured by GDP. The indicators of assessment even align more closely with multidimensional sustainable development perspectives [27]. However, the analysis indicates that many sustainability indicator systems are remained overly generalized and not sensitive enough to the socioeconomic and ecological diversity of small islands.

3.2 Influence of Governance Approaches on Economic Development

Governance approaches play a substantial role, which act as a determination of economic growth within development context of small islands. The sources from reviewed literature highlights several major influences

First, the review reveals that co-management and decentralized governance contribute to the economic development of small islands. This system play a crucial role on shifting power to local communities which can directly lead to sustainable use of resources, build trust, and enhance financial outcomes such as job prospects and access to business financing [28]. Furthermore, co-management approaches are associated with livelihood improvement and access to the opportunities of alternative livelihoods. During a pandemic Covid-19, decentralized governance revealed more flexible and localized responses in food distribution and inclusive management of resource use [9].

Second, the Penta-helix Model enables economic acceleration which foster collaboration across various actors. the Penta-helix Model is often driven by a synergy between the government, private sector, universities, NGOs, and the media. The emergence of this approach revealed the synergy between universities by providing the science-based innovation needed, while the media enables marketing for new destinations in the context of tourism development in small island [10]. Therefore, this model suggests that economic development in small islands inevitably depends on governance linkages rather than remote state interventions.

Despite the benefits of collaborative governance towards small islands, the literature identifies tensions in autonomy, which indicates conflicts between centralized government and local communities. In many cases, island governance is controlled by political and commercial interest. This major challenge treats islands as revenue generators rather than unique communities [14]. Numerous studies criticize top-down development models that commodify island resources and tourism landscapes while restricting local participation in decision-making processes. Such governance asymmetries frequently result in unequal benefit distribution, displacement of traditional livelihoods, and weakened community autonomy (Fabinyi et al., 2014). Hence, these findings emphasized the importance of inclusive governance frameworks which are capable in balancing economic efficiency with equal distribution.

The review further suggests that the importance of infrastructure as a catalyst. Several study indicated that strong urban-level GDP and fiscal capacity are major requirement supports for islands, enabling transitions into high-tech or diversified tourism sectors through government-led investment in ports, airports, and renewable energy [8], [22]. Infrastructure development purposes not only as a physical enabler of economic growth but also as a governance mechanism that determines market access,

mobility, and integration into regional economies.

3.3 Economic Sectors and Livelihood Strategies

The reviewed literature consistently discusses a shift toward diversification to mitigate environmental risks on small island development. Fisheries and "Blue Food" is one of the foundations of most small island communities. The strategy is moving toward climate-adaptive fisheries management in some regions by implementing quota system, vessel day schemes and ecosystem based fisheries [1]. This aims to maximize revenue from foreign fleets while securing local food supplies [19]. This fisheries strategy is increasingly framed not only as economic sectors but also as pillars of food sovereignty and community resilience.

Another economic sector that becomes a major leading sector for economic development in island context is tourism. This sector also emerges as the most rapidly expanding economic sector on small island. Some studies indicate tourism Villages and "Tourism Fishermen" as a common strategy in the transformation of isolated villages into tourism hubs. It can be seen from the livelihood blending strategy, where traditional fishermen renovate their boats to serve as tourist transport in the afternoons while continuing to fish in the mornings [11]. Furthermore, this strategy even enables more alternative livelihoods among communities. They are increasingly adopting homestay management, handicrafts, and marine-based creative industries to supplement declining fish catches [11], [22].

The reviewed literature further identifies that aquaculture is increasingly promoted as a strategic sector for dealing with declining fish stocks and boosting local food security. small-scale aquaculture is considered as a critical low-carbon protein source for future food self-sufficiency and is adaptable to island conditions [1]. However, the literature also suggests that environmental externalities such as water pollution and coastal and marine habitat

degradation are affected by poorly regulated aquaculture expansion.

3.4 Research Gaps and Future Directions

Despite the growing body of literature, there are several critical areas for future exploration to enhance island sustainability. First, there is a need to move beyond governance collaborations resulted in economic gains from tourism and marine development that are often disproportionately captured by elites, investors, or external actors while local fishers are displaced [22], [23]. Further studies should therefore critically examine distributional justice, resource access inequalities, and governance exclusion.

There is also identification from reviewed literature that put lack of attention on gender dimensions island economies. Research often overlooks the critical roles women play across supply chains such as fisheries processing, tourism services and household food security, yet their contribution is somehow invisible in policy and governance discussions which can hinder women's adaptive capacity and overall community resilience [19]. Greater gender-sensitive analysis is necessary to comprehend the social sustainability of coastal development.

Most reviewed studies moreover rely on qualitative case-study approaches. Most existing findings are preliminary or qualitative which inevitably provide valuable contextual insights. However, longitudinal and quantitative evidence are needed to track spatial and temporal changes in island prosperity following governance shifts [13], [14]. Therefore, there is a need for future research in the context of small island development to integrate panel data, spatial analysis, and mixed-method approaches to evaluate governance effectiveness more systematically.

Another future direction towards small island is development context-specific sustainability indicators. The existing sustainability framework inadequately captures the diversity of ecological and socio-

economic conditions across islands. There is a need for future frameworks shift from "homogeneous" to "differentiated" indicators that account for wide latitudinal and ecological differences [8].

Lastly, an emerging research notably investigates how digital tools and platforms can improve participatory governance and real-time monitoring of food stocks is an emerging direction [9], [14]. Furthermore, the literature suggest that digital governance may improve transparency, community participation and adaptive resource management, particularly in geographically isolated island contexts.

4. CONCLUSION

This systematic literature review shows several findings in the discourses of natural resource governance in shaping sustainable economic development in small islands. The reviewed studies collectively reveals that governance systems influence not only environmental sustainability, but also livelihood resilience, economic diversification, social inclusion, and long-term community development capacity. Furthermore, in the context of isolated vulnerable islands, governance roles range from institutional mechanism for resource management to a strategic foundation for sustainable economic transformation.

The findings across reviewed study indicates a substantial shift in the literature from centralized and sectoral approaches toward more collaborative, participatory, and multi-scalar governance frameworks. The review further underlines those fisheries and tourism continue to be leading economic sectors discussed within small-island development literature. Even so, the findings suggests that livelihood diversification

strategies such as aquaculture, homestay management, ecotourism, marine-based creative industries, and small-scale entrepreneurship as adaptive response to not rely on single resource economies. Moreover, the literature also reveals several determined governance and development challenges including centralized policy structures, unequal infrastructure distribution, limited market access, elite capture, tourism dependency, exclusion of marginalized groups, and insufficient recognition of women's contributions within coastal economies. These findings suggest that inclusive governance arrangements and distributive justice mechanisms ensure the sustainability of small islands.

There is a need for future research to therefore adopt more integrative and interdisciplinary approaches, which links governance systems, livelihood transformation, ecological resilience, and development outcomes simultaneously. Also, comparative studies across different island contexts are also necessary to better understand how institutional arrangements, ecological conditions, and socio-economic structures reform development path. Overall, this review discusses that sustainable economic development in small islands are not merely determined by the availability of natural resources, but also on the quality of governance systems that provide arrangement to inclusive access, participation, resource distribution, and environmental sustainability. Strengthening inclusive, adaptive, and collaborative governance therefore remains necessary for promoting resilient economies and sustainable futures for small-island communities as dealing mechanism facing environmental and economic uncertainties.

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