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A Bibliometric Review of Transforming Coastal Management Towards the Blue Economy: Emerging Trends and Future Directions

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Abstract: Coastal management is crucial for achieving the blue economy, which prioritizes the sustainable utilization of marine resources for economic growth, improved livelihoods, and the welfare of the ocean ecosystem. However, the current body of knowledge on the interface of coastal management and the blue economy is fragmented. The identified fragmentation leads to the demand for a thorough understanding of research trends, major issues, and prospects. Therefore, this research aims to provide a systematic overview of the global research landscape on coastal management in the context of the blue economy. Bibliometric analysis was applied to examine 85 articles indexed in the Web of Science (WoS) and Scopus databases, with a focus on the period covering 2013 to 2024. The analysis was conducted with different tools such as biblioshiny *R* package, VOSViewer and NVivo 12 Plus to map the co-occurrence of keywords and thematic evolution. The results demonstrated several emerging research trends, including sustainable development, marine spatial planning, conservation management, marine environment and policy, as well as environmental impact assessment. Despite these developments, gaps were identified in areas such as policy integration, technological innovation for coastal monitoring, and equitable benefit-sharing mechanisms in the blue economy framework.

Keywords: Coastal management; Blue economy; Emerging trends; Future directions; Scopus

1. Introduction

At present, the sustainability of marine and coastal ecosystems is severely endangered by environmental degradation caused by the exploitation of resources and climate change (Techera, 2018). The degradation of the marine environment is further sped up by different coastal and sea-related activities, including overfishing, marine pollution, coastal land conversion, and rising global temperatures (Voyer et al., 2018). The current exploitation causes some of the effects like decrease in fish stocks, damage to marine habitats, and increase in coastal natural disasters; for example, abrasion and rise in sea levels, increase in sea temperatures which leads to coral bleaching, and altered fish migration patterns affecting food security and the local economy (Jiang et al., 2023; Liang et al., 2022; Zheng & Wang, 2024). Currently, tourism activities are significantly impacted by the sustainability of coastal and marine areas (Al Giffari et al., 2025; Machado & de Andrés, 2023). The challenges have led to the emphasis on sustainable development in several global policies, including the Sustainable Development Goals (SDGs) (Kurniawan et al., 2024; Roziqin et al., 2024), specifically SDG 14 which focuses on Life Below Water.

The efforts to minimize marine pollution, maintain and reconstruct marine ecosystems, as well as promoting an environmentally friendly marine-based economy have led SDG 14 to emphasize the significance of conservation and sustainable use of marine resources. The implementation of SDG 14 is important to preserve the equilibrium of marine ecology and guarantee coastal communities continue to reap economic benefits (Afinowi & Nhamo, 2025; Bhati et al., 2025). An example of the method associated with the goal is effective coastal management or

Integrated Coastal Zone Management (ICZM) (Jiang et al., 2023). Coastal management includes different strategies such as conservation of the ecosystem, regulation of utilizing marine resources, and integration of ecosystem-based policies (Gates et al., 2021). Moreover, the implementation of sustainable coastal management focuses on different initiatives that reduce environmental deterioration in order to achieve a balance between industry and conservation efforts (Jyotsna et al., 2024). The policies formulated and implemented can benefit the environment and coastal communities in the future. This shows the requisite to apply scientifically proven coastal management principles (Pace et al., 2023). Therefore, in the context of economics, the blue economy has become a concept increasingly discussed and employed in different global policy discourses.

The blue economy is defined as the sustainable use of marine resources in supporting economic growth, social welfare, and environmental conservation with a focus on both coastal and marine aspects. The discourse related to the concept of international marine governance emphasizes issues such as marine natural resources and the sustainability of small-scale fisheries (Heidkamp et al., 2022; Hussain et al., 2018). It also includes several types of innovative industries, including marine biotechnology, marine-based renewable energy, and sustainable marine tourism in addition to more conventional aspects such as fisheries and marine transportation. In the context of inclusive and sustainable development, the blue economy aims to balance economic and environmental interests (Rout et al., 2024). Global commitment to the concept is strengthened by different international declarations and multilateral agreements. This was observed in forums such as the Our Ocean Conference, the High-Level Panel for a Sustainable Ocean Economy, and several G20 meetings that have emphasized the importance of blue economy policies as a solution to environmental challenges and coastal economic development (Hazra & Bhukta, 2022). There has been a rapid increase in research related to the blue economy in recent years due to the introduction across a range of fields such as marine science, economics, and environmental policy (Hasanah et al., 2024; Liang et al., 2022; Pires Manso et al., 2023; Setiyowati et al., 2022).

Previous research discussed aspects of implementation in the blue economy, challenges in policy, and opportunities for innovation in marine resource management (Afinowi & Nhamo, 2025; Bhati et al., 2025; Machado & de Andrés, 2023). Others focused on Marine Spatial Planning (MSP) as a major concern in marine spatial governance to support economic activities efficiently and sustainably (Hussain et al., 2018; Setiyowati et al., 2022). Pires Manso et al. (2023) and Yasser et al. (2024) examined technologies and innovations such as offshore renewable energy and artificial intelligence-based maritime monitoring which increasingly gained attention in the context of the blue economy. Meanwhile, scientific research on the relationship between coastal management and the blue economy is relatively limited, despite the financial incentives offered by the concept for conservation efforts and sustainable management of marine resources. Previous research also reported that effective coastal management could serve as the cornerstone to achieve success in the blue economy initiatives of a country (Bhattacharya & Dash, 2021; Choudhary et al., 2021). Therefore, an understanding of the relationship between coastal management and the blue economy is important in designing sustainable issues in the future.

The novelty and scientific contribution of this research are to provide the latest bibliometric description and analysis, integrated coastal management and the blue economy, as well as determining the relevance of the concept to national policies. It offered a systematic review of current research trends in the field of coastal management and blue economy using data from scientific publications or databases originating from Scopus. Moreover, the number of publications, collaboration between researchers, and patterns of existing academic literature are analyzed. The bibliometric method adopted allows the identification of dominant research themes and conceptual developments in recent years. Therefore, the development of science in this field was comprehensively mapped. Data visualization methods were used to present the relationship between different concepts related to coastal management and the blue economy as well as identifying research areas still minimally explored. The bibliometric analysis showed the research gaps that had not yet been widely discussed.

The aim of this study is to provide information on the connection between the blue economy and coastal management as well as the support to sustainable development offered by both. An essential component of practising the blue economy is coastal management. This is because the optimal use of sustainable marine resources can be supported by sound coastal management policies and practices. Therefore, a comprehensive investigation was conducted on how the growth of a sustainable blue economy could be aided by a scientifically grounded method of coastal management. The current research offered suggestions for future research directions and policy implications by mapping trends and gaps. Each result derived from the bibliometric analysis ensured the identification of examined research topics, to serve as the foundation for future research designs. The suggestions were used to address methodological issues, possible topics, and interdisciplinary strategies that could be applied to enhance further research in this field.

2. Coastal Management Towards the Blue Economy

The paradigm of coastal management experienced a significant shift from the conventional exploitative method to the blue economy that emphasizes the sustainability of marine and coastal resources in the last two decades. The vast coastal and marine areas exceed the jurisdictional boundaries of a particular region which leads to the

demand for a comprehensive institutional method with the participation of several actors (Hassanali, 2022). This is important due to the threat of environmental crisis and the explorative pattern of marine resource utilization which lead to the prioritization of sustainability principles in coastal management. The blue economy is expected to have an increasingly central role in negotiations on the use of global oceans and the achievement of the United Nations SDGs in the future (Voyer et al., 2018). However, the practice of the blue economy is a subject of debate at the implementation level.

The terminology "blue economy" was first introduced in 2010 by a Belgian economist named Gunter Pauli (Pauli, 2010; Roziqin et al., 2024). The phrase was introduced during the 2012 Rio + 20 United Nations Conference on Sustainable Development due to the quick escalation of sustainability issues in ocean governance in the 21st century (Frohlich et al., 2023). According to Silver et al. (2015), the concept was an adaptation of global governance, specifically for the development of marine investment and conservation. The World Bank defined blue economy as the sustainable use of ocean resources for economic growth, improved livelihoods, and job creation while maintaining the health of the ocean ecosystem (Fudge et al., 2023; Wang et al., 2023).

Coastal management within the blue economy framework focuses on both conservation and sustainable economic utilization through ecotourism, sustainable fisheries, and marine renewable energy (Kurniawan et al., 2026; Pires Manso et al., 2023; Yasser et al., 2024). This strategic dimension includes coastal area governance based on scientific data, the strengthening of institutional capacity, and environmentally friendly technological innovation. Developed countries such as Norway have become pioneers in combining marine resource management with economic innovation through the development of a sustainable aquaculture industry based on advanced technology and scientific research (Stuchtey et al., 2020). Meanwhile, Pace et al. (2023) argued that several countries in Europe tried to explore the potential of the blue economy through synchronizing research activities and innovation in the industrial sector. This practice revealed that coastal management could function as a major pillar in achieving a balance between economic growth and ecosystem conservation (Fudge et al., 2023; Herath et al., 2023).

The concept of coastal management is being increasingly discussed due to the combination of productive activities, commercial flows, coastal habitability, and environmental effects (Vega-Muñoz et al., 2022). ICZM is a strategic form of coastal governance often implemented to realize the practices of blue economy (Tailor et al., 2021). Its aim is to ensure environmental quality and improve community welfare, specifically in coastal areas (Chen et al., 2020). According to Jiang et al. (2023), ICZM was a paradigm for integrated and sustainable coastal management to face long-term challenges, to be in line with the principles of blue economy. This shows that the implementation of the ICZM paradigm in a country is expected to automatically realizes the practices of blue economy. Previous research reported that most maritime countries in the world implemented the ICZM principles (Chen et al., 2023; De Luca Peña et al., 2024; Jyotsna et al., 2024).

The practices of coastal management in different developing countries emphasize the protection of coastal and marine ecosystems (De Luca Peña et al., 2024). Management is implemented by empowering coastal communities through marine-based economic activities (Hassanali, 2022; James, 2025). Regions belonging to the Association of Southeast Asian Nations (ASEAN), such as Indonesia have significant potential in using marine resources with blue economy principles through the support of political and policy directions (Gamage, 2016; Setiyowati et al., 2022; Suryawan et al., 2024). For example, the Philippines has implemented multi-actor coastal management in realizing the blue economy discursively (Satizabal et al., 2020). The governments of Bangladesh and Thailand are using the productive sectors related to coastal and marine resources through the Public-Private-Partnership mechanism (Hussain et al., 2018). The aim is to increase income and bring significant economic benefits to the countries. Despite the potential, developing countries face several challenges in implementing coastal management based on the blue economy. Some of the main obstacles identified are policy fragmentation, weak coordination between institutions, as well as limited access to data and technology (Das, 2023; Heidkamp et al., 2022).

3. Methodology

Applied methodology was used to achieve the objectives of this research by integrating metrics generated from bibliometric analysis into qualitative and quantitative tools such as content analysis. According to Mukherjee et al. (2022), bibliometric analysis could be applied for a variety of reasons, including identifying new trends in the performance of articles and journals, collaboration styles, and research components, as well as investigating the intellectual framework of a specific field within the body of existing literature. The method was employed in this research to incorporate quantitative and qualitative insights into the specific area examined as well as identifying emerging measurement trends and future directions (Bhati et al., 2025; Wang et al., 2023). Bibliometric analysis is considered a field of science as it could provide a comprehensive map of the structure, assessment, and measurement of knowledge from scientific articles available in databases (Aziz et al., 2024; Jiang et al., 2023; Kismartini et al., 2024).

Bibliometric methods have been increasingly used in recent years to understand research trends in different fields, including coastal management, marine sustainability, and the blue economy (Afinowi & Nhamo, 2025;

Vega-Muñoz et al., 2022; Wang et al., 2023). Their application could enable the discovery of publication trends, networks of scientific collaboration, and the development of ideas within a field of research. Furthermore, a few earlier bibliometric analyses emphasized the growth of research on the blue economy and coastal management but did not provide a complete investigation of the relationship between both concepts. This study adopted bibliometric approach that examined performance analysis and science mapping (Al-Jamimi et al., 2022; Mukherjee et al., 2022). There is a wealth of research on coastal management and the blue economy but only a few focused on their successful incorporation into sustainable development practices and policies. Consequently, this research attempted to close the gap by performing a bibliometric analysis of articles published on coastal management from the standpoint of the blue economy.

The Web of Science (WoS) and Scopus databases were adopted to investigate the most recent achievements in coastal management and the blue economy. Specifically for the WoS, this study included only documents indexed in Science Citation Index Expanded (SCIE), Social Sciences Citation Index (SSCI), and Emerging Sources Citation Index (ESCI). The selection of the database was based on its status as part of the largest and most comprehensive international indexes recognized by the scientific community, including the scope of social sciences and humanities (Malik et al., 2021). We used these two databases to complement each other and ensure thorough coverage. Keywords were entered into the WoS and Scopus databases, and the distinct processes of identification, screening, eligibility, and final inclusion were carried out in accordance with the well-established flow procedures of Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) and additional methodological criteria (Hasanah et al., 2024; Pires Manso et al., 2023). The step-by-step of the activities conducted in this research is presented in Figure 1. Firstly, the research was started by searching the keywords "Coastal Management" AND "Blue Economy" based on Title-Abstract-Keywords. Secondly, inclusion and exclusion were implemented, followed by the collection of 85 documents that fulfilled the criteria. The detailed information of the 85 documents retrieved is presented in Figure 2. Subsequently, the documents were extracted and analyzed using software for data analysis. Thirdly, data analysis and bibliometric data visualization were conducted through the application of the biblioshiny *R* package, VOSViewer and NVivo 12 Plus.

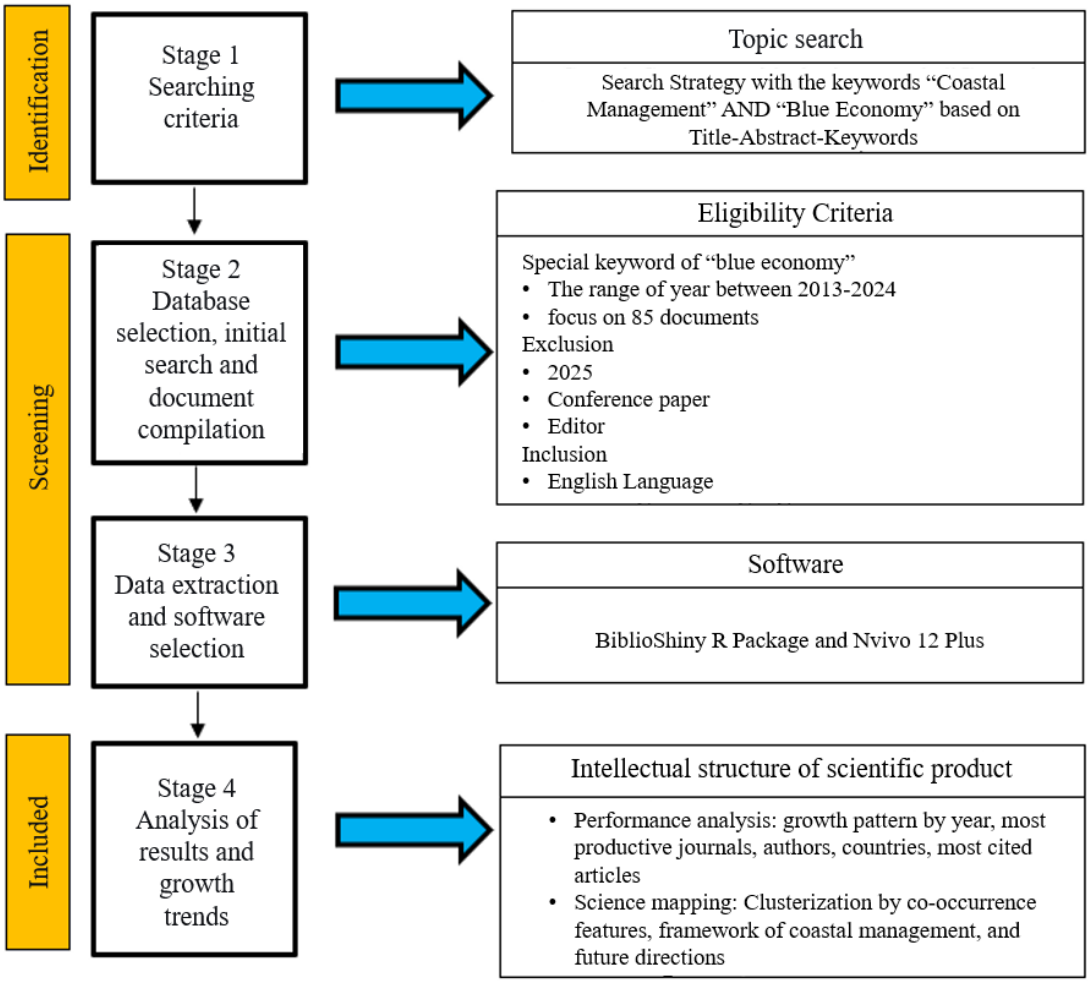

Figure 1. Research design by PRISMA

The three software programs were used to download a complete collection of bibliographic data in Bibtex format from the WoS database. The co-occurrence feature in both tools was used to visualize the research clusters. Initially, the bibliometrix *R* package was installed and loaded in *R* Studio before it was subsequently launched by typing biblioshiny in the *R* console. Biblioshiny is a web application that allows non-programmers to use the bibliometrix package in *R* (Wani & Ganaie, 2024). Finally, a content analysis was conducted on the visualizations obtained from biblioshiny and NVivo 12 Plus, in line with the main research questions.

4. Results and Discussion

4.1 Articles and Citations by Year

During the 2012 Rio de Janeiro conference, the UN emphasized the importance of the phrase "blue economy", specifically in addressing issues of ocean governance in the 21st century (Lee et al., 2020). This global-scale policy is important as an intervention in different maritime countries around the world, in order to drive the significance of issues regarding the sustainability of resources and the long-term capacity of marine ecosystems. The massive implementation of coastal management in the blue economy has attracted the attention of several scholars. Therefore, the topic has experienced an increase in research trends and scientific publications as shown in Figure 2.

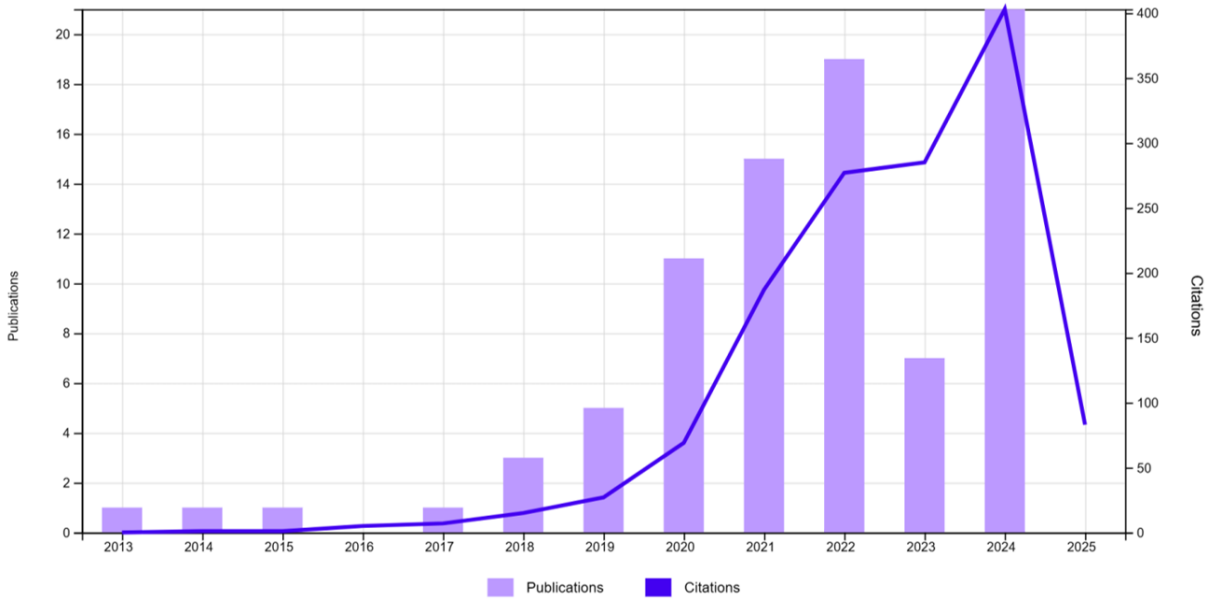

Figure 2. Articles and citations by year
Sources: WoS database and biblioshiny *R* package

Research on coastal management in the blue economy started to receive attention in 2013, which was a year after the UN conference in Rio de Janeiro and a significant increase was concomitantly recorded up to the peak in 2022. In addition to international policies, the increase was motivated by a combination of international awareness of damage to the marine ecosystem and climate change, leading to the growing interest in the use of marine renewable energy and factors emphasizing the science-based method to the blue economy. More than 40% of the world's population lived in coastal areas in 2021 and the continuous increase in the number every year threatened their sustainability and quality due to exploitative activities (Gambín et al., 2021). Another observation was that climate change caused social, economic, and health crises in coastal areas with subsequent transition to the usage of renewable energy sources from the ocean, which are prioritized to ensure cohesion as well as spatial and social equity (Theodora & Piperis, 2022). Finally, the 2012 Blue Economy concept paper emphasized that early scientific evaluation of blue capital was an important basis for proper decision making and management and this showed the significance of science in the context (Kontovas et al., 2022). There was a difference in 2023 when publications decreased quite drastically, partly due to geopolitical tensions between Russia and Ukraine. The conflicts led several countries to shift priorities of research funding to other more pressing issues (Guariglia et al., 2025). However, in 2024, the topic of coastal management in the blue economy returned to its highest position, far exceeding 2022 due to various supports such as post-crisis recovery and the growth of the blue economy in the European Union. The trend was caused by the fact that the sector generated 29% gross value added and 54% employment as a reflection of strong policies toward relevant research and innovation (European Union, 2024).

The high percentage of increase in the trend was not limited to publications but extended to the number of citations in relevant scientific works. This showed that previous research was becoming more relevant, referenced, and impactful. Similar to publications, the citation trend increased in 2013 and peaked in 2022 before decreasing in 2023 and reaching the highest position in 2024. The trend emerged because several countries and international institutions started to adopt science-based policies for coastal management and the blue economy, such as simulations of ocean circulation using paired numerical models, scientific mapping, or risk assessment methodologies (De Vos et al., 2021; Fernández-Montblanc et al., 2022; Vega-Muñoz et al., 2022). Furthermore, the articles published in 2024 focused on impact evaluations, longitudinal research, or replications of previous research to prove the effectiveness of interventions. This showed that the articles from 2013 to 2020 became the main reference base and had increased citations. The examples include an evaluation of the potential of the blue economy in Cape Verde, progress and challenges in building a sustainable blue economy in Chile, or a national assessment of the impact of coastal tourism on welfare and economy in Australia (Brito et al., 2024; Manero et al., 2024; Vázquez Pinillos & Barragán Muñoz, 2024). Certainly, the development process and literature increased the number of citations of previous research.

4.2 Influential Articles

Several topics on coastal management in the blue economy were cited in many articles and this showed continuous attention to coastal areas as part of the sustainable development agenda. The following table describes the topics that provide conceptual contributions to other articles regarding different aspects of coastal management in the blue economy, specifically in terms of citation numbers with a focus on articles indexed in the WoS database. The numbers listed are not absolute, due to the possibility of differences in citations from other index databases. The information on the most influential articles is presented in Table 1.

Table 1. Ten most influential articles

References	Conceptual Contribution	Citations
Lee et al. (2020)	The role of stakeholders in suppressing the resistance of interests in the blue economy	173
Bennett (2019b)	The “peopled seas” paradigm and the urgency of social science integration in sustainable ocean management	103
Sarker et al. (2018)	Conceptual impetus to bridge the gap between academic research and policy implementation for the blue economy	72
Bennett (2019a)	Integration among researchers, practitioners, and policymakers in the political ecology of ocean and coastal areas	67
Okafor-Yarwood et al. (2020)	Balance between economy, social life, and conservation of the ecosystem	63
Kronfeld-Goharani (2018)	Shifting company commitments from voluntary to mandatory in strengthening the blue economy	36
Wright (2014)	The role of Environmental Impact Assessment to connect science with regulation in the blue economy	35
Voyer et al. (2020)	Policy coherence and coordination, the role of border organizations, policy gaps, and reforms in the blue economy	34
Henderson (2019)	Use of marine cultural heritage data and knowledge for evidence-based decision making	34
Chen (2023)	Ocean and coastal management for policy development and sustainable management	32

Sources: Adopted from Scopus and WoS databases as of February 2025

Lee et al. (2020) ranked first, with a total of 173 citations. The focus of the article was to review the role of stakeholders, both directly and indirectly, in overcoming the resistance of interests between the exploitation of marine resources for economic interests and protection in the long term. It was reported that the relationship between the blue economy and the SDGs was clear but the role of stakeholders in the process was unclear and varied. Therefore, a strategy was required to balance the two conditions. Bennett (2019b) ranked second, with 103 citations. Bennet explained that coastal communities, indigenous people, and small-scale fishers depended on the ocean for their livelihoods. This illustrated that the human dimension of global oceans and coasts was critical to evidence-based decision making in marine conservation, MSP, fisheries management, the blue economy, climate adaptation, and other areas of marine policy. The third article by Sarker et al. (2018) with 72 citations, emphasized the constellation of management frameworks and was technical in exploiting the potential of the blue economy in Bangladesh.

All the articles cited were the most referenced in the WoS database up to February 2025. The trend revealed that the development of research related to coastal management in the current blue economy depended on these articles in terms of data synchronization and validation, policy comparison, perceptions, interests, challenges,

opportunities, and objectives. The constellation formed from several results was that there was significant potential for the construction and escalation of the blue economy. However, the major challenges identified such as marine economic expansion, marine pollution, and climate change required the development of an evidence-based management framework that combined research, marine governance, and stronger regulatory enforcement. The purpose was to ensure a balance between the growth of the blue economy as well as marine and coastal environmental sustainability.

4.3 Source Analysis

Recent coastal management research in the context of the blue economy has been published in various reputable international journals. The distribution of the scientific literature assists in providing relevant empirical data, evaluations of effectiveness, and case research (Okafor-Yarwood et al., 2020). Moreover, reputable journals function as a platform and an advocacy step to influence and shape public policy (Pace et al., 2023).

Figure 3 shows that the *Ocean & Coastal Management Journal* ranks first with 49 articles. This journal is indexed by Scopus and is in Quartile 1 with an H-Index of 116 covering subject areas and categories such as agricultural and biological sciences, aquatic science, earth and planetary sciences, oceanography, environmental science, management, monitoring, policy and law, with Elsevier B.V. as the publisher. The second rank with six articles is *Coastal Management* which has an H-Index of 61 and is indexed by Scopus Quartile 2 with Taylor and Francis Ltd. as the publisher. The remaining journals are *Environmental International*, *Frontiers in Marine Science*, *Journal of Marine Science and Engineering*, *Marine Pollution Bulletin*, *Sustainability*, *Coastal Engineering Journal*, *Current Research in Environmental Sustainability*, and *Current Science*, with an average number of one to two articles. The reputable journals used to publish the articles can serve as the portals and distributors of strategic research results, specifically those related to evidence-based policies on coastal management and the blue economy (Choudhary et al., 2021).

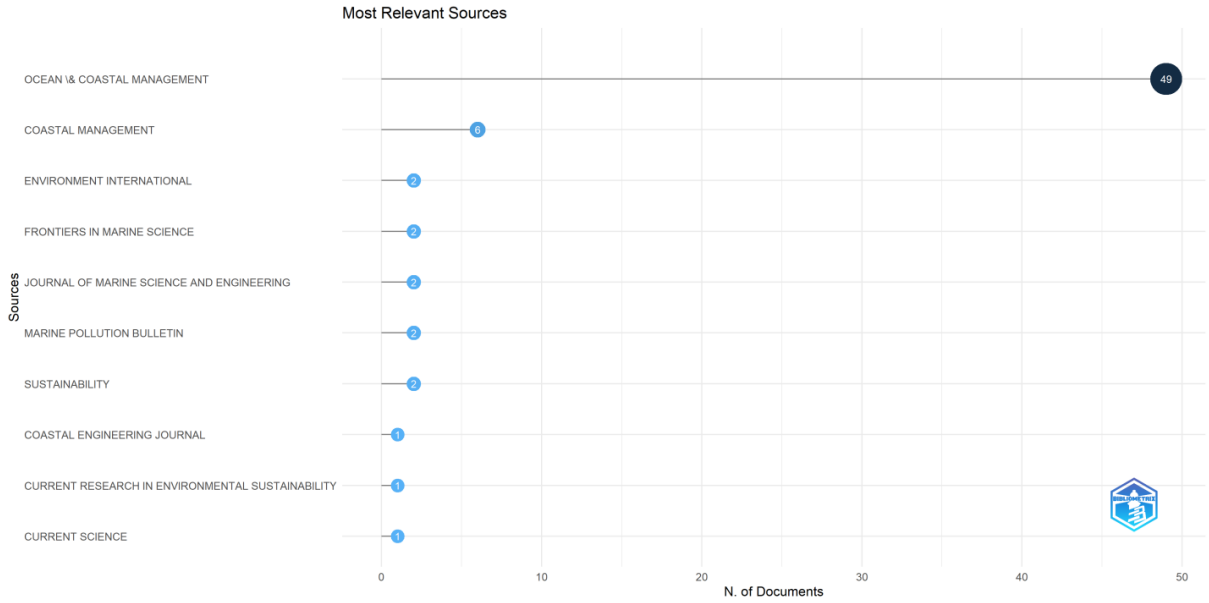

Figure 3. Source analysis
Sources: WoS database and biblioshiny *R* package

4.4 Most Contributing Authors, Institutions, and Countries

The research on the transformation of coastal management toward the blue economy has been conducted by several authors from different institutions and countries around the world, specifically those with coastal areas as presented in Table 2. Bennett contributed most and he was an environmental social scientist and geographer currently serving as the Global Oceans Lead Scientist at the World Wildlife Fund (WWF) and an Affiliate Professor at the Institute for the Oceans and Fisheries at the University of British Columbia. A major result of the article published by the author was the need to emphasize environmental justice and limit losses from marine pollution and climate change. This trend showed the possibility of establishing social injustice in non-inclusive coastal management policies. Therefore, effective coastal resource management should consider participatory aspects to address global environmental challenges and empower local communities (Bennett et al., 2021). It was also reported that the same number of articles was published by Fabinyi, M. and Rames, R.

Table 2. Most contributing authors

Authors Recorded	Count	(%)
Bennet, N. J.	3	3.529
Fabinyi, M.	3	3.529
Ramesh, R.	3	3.529
Armoskaite, A.	2	2.353
Bordehore, C.	2	2.353
Dobson, J. Y.	2	2.353
Dressler W. H.	2	2.353
Fonfria, E. S.	2	2.353
Gee, K.	2	2.353
Gilek, M.	2	2.353
Total: 10 out of 335 authors	**23**	**85**

Sources: Adopted from Scopus and WoS databases as of February 2025

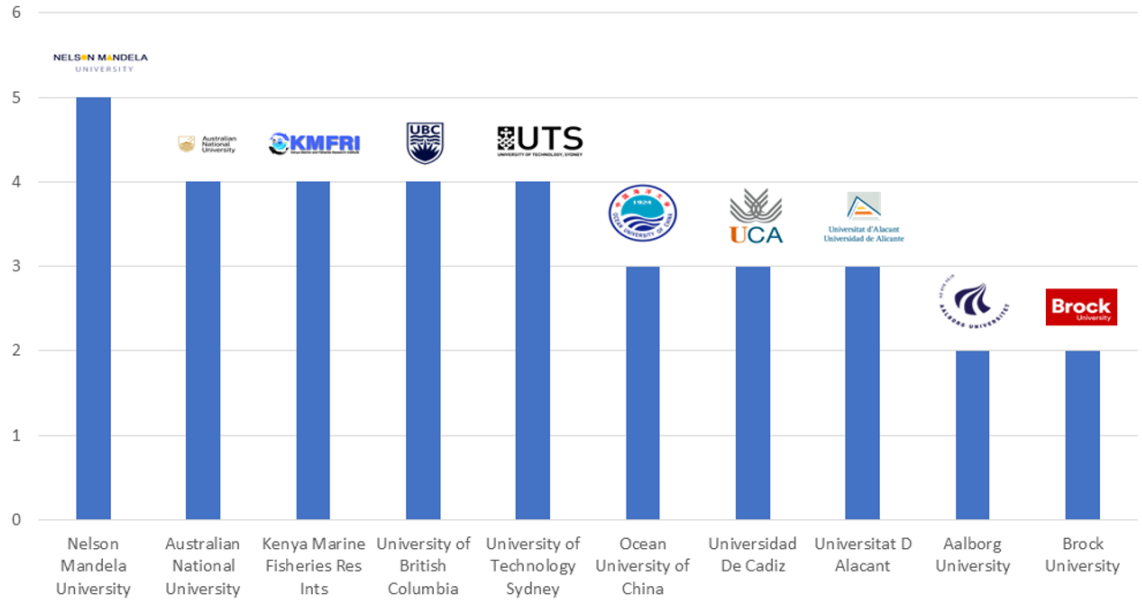

Figure 4. Most contributing universities
Source: Biblioshiny *R* package

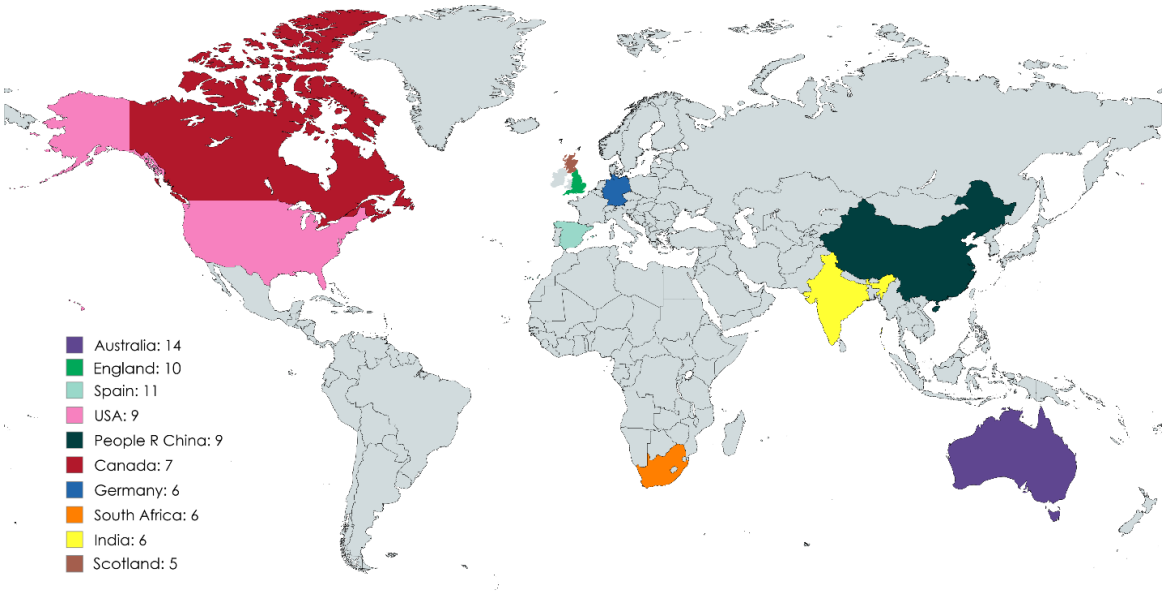

Figure 5. Most contributing countries
Source: mapcart.org

Figure 4 exhibits the top 10 universities with the highest number of articles published. Nelson Mandela University ranks top and this shows the institution is very active in the research field of Coastal Management. The second to fifth places are occupied by the Australian National University, Kenya Marine Fisheries Research Institute, the University of British Columbia, and the University of Technology Sydney, respectively. Interestingly, only one university, Ocean University of China, presents research related to Coastal Management toward the blue economy in Asia.

The distribution further reveals the dominance of institutions in developed countries such as Australia, Canada, and the European region with stronger research resources. Some are also from several developing countries that have geographically significant coastal areas, such as Kenya and China. The inclusion of Nelson Mandela University as a contributing leader confirms the role of South Africa as part of the important actors in coastal research in the blue economy. The existence of these institutions reflects the diversity of research and the potential for international collaboration in developing knowledge and practices of sustainable coastal management in the future.

A similar trend presented in Figure 5 illustrates that the articles are dominated by developed countries from the European region. Only India and China are Asian countries which are included in the category with the largest number of publications. This is probably because the countries have abundant coastal and marine resources in addition to being supported by adequate institutions and human resources to research maritime and ocean issues.

4.5 Emerging Trends of Topics and Future Directions

A bibliometric analysis of the articles on coastal management in the context of the blue economy revealed the significant development of research in the last decade. Figure 6 shows several trends from year 2019–2024 with a focus on Sustainable Development, MSP, Conservation Management, Marine Environment and Policy, as well as Environmental Impact Assessment. There is also increasing attention to the integration of cross-sector policies as well as the demand for adaptive and inclusive governance in coastal areas. These topics reflect a paradigm shift from mere environmental conservation to sustainable development that includes economic, social, and ecological aspects in a balanced manner.

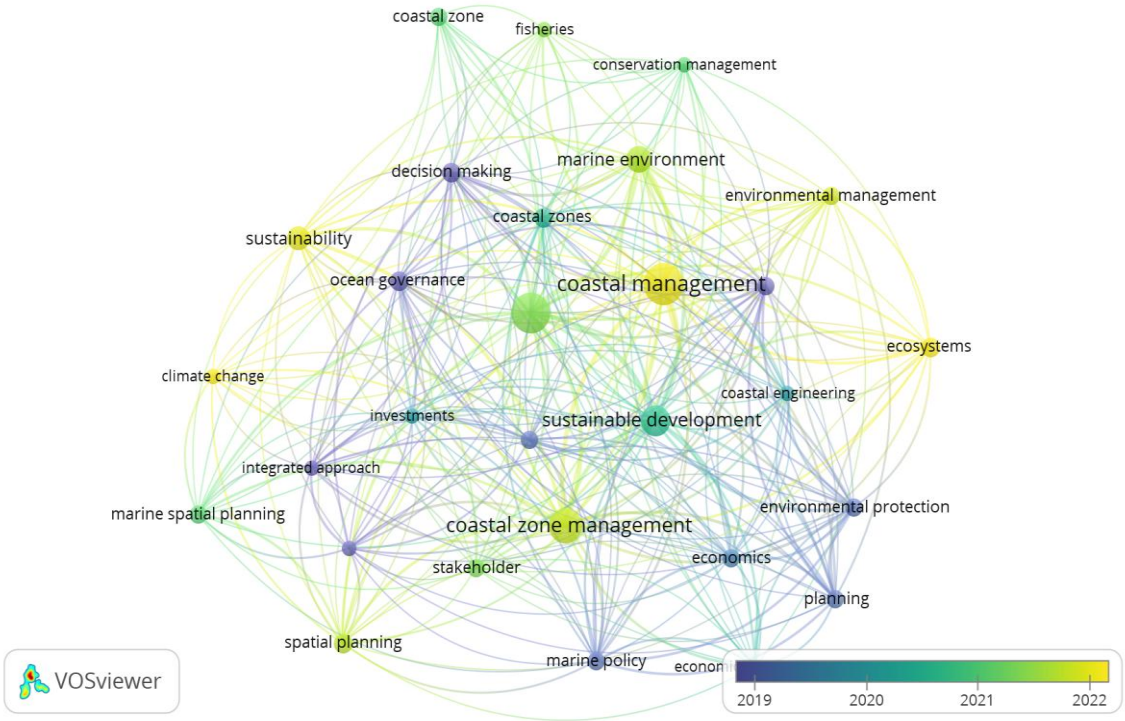

Figure 6. Emerging trends of topics
Source: Gathered by VOSViewer

The transformation of coastal and ocean management towards the blue economy emphasizes environmental protection as well as the efforts to use marine resources to achieve community welfare. This is due to the importance of community, specifically those living and working in coastal areas every day. The participation of the community in the empowerment and conservation process can affect economic and environmental aspects

(Chen et al., 2020; James, 2025). The concept expands the issue of sustainability in coastal management for future generations. Global recession models failed to capture geomorphological variability in Australia and process-based interventions could materially improve ecological outcomes. The contribution of this paper lies in reframing challenges of coastal management as failures of structural governance rather than purely environmental problems, while articulating a forward-looking agenda centred on institutional capacity, evidence-based planning, and restoration of federal stewardship. These two findings indicate that the transformation of coastal management toward the global blue economy is required to serve as a basis for formulating development policies to guarantee sustainable development.

Figure 7. Directions of future research
Sources: Gathered by NVivo 12 plus and biblioshiny *R* package

The broad domain of coastal management directs future research to the multidisciplinary integration of environmental science, marine economics, as well as public policy and governance. Effective and integrated governance is expected to resolve the complexity of coastal and marine areas to support stakeholders' participation in achieving SDGs (Hassanali, 2022; Vega-Muñoz et al., 2022). Furthermore, research on coastal management has shed light on the subjects of oceanography, environmental science, and engineering. More opportunities were obtained for the exploration of research on social sciences, with a particular focus on policy and governance. The

trend is related to the emphasis of Figure 7, which illustrates that the difficulty in coastal management is associated with different boundaries of government jurisdiction. The concept leads to the possibility of conflicts of interest from different actors. Therefore, collaboration, synergy, and active roles are required across sectors to ensure a positive impact on the sustainability of coastal ecosystems in the future (Chen et al., 2023).

Coastal and marine areas can be used for tourism in the future. This was confirmed by Hussain et al. (2018) that tourism was part of the sector considered usable within the blue economy framework. Several world-class tourist attractions have beach landscapes, such as the Maldives, Hawaii, Bali, Raja Ampat, and others. Effective management of coastal areas can be an enabler for the tourism sector which is currently a demand in modern society (Al Giffari et al., 2025). This was supported by Yasser et al. (2024) that coastal management in realizing the blue economy could be performed by adjusting local characteristics. The trend showed that the local values found in coastal areas should not be simply eliminated under the pretext of sustainability.

Figure 8 explains that the development of blue economy principles in the future is a strategic step to achieve the policies of sustainable ocean management (Bhattacharya & Dash, 2021). Both developing and developed countries have committed to realizing principles of the blue economy in the context of economic growth while focusing on environmental issues and coastal ecosystems (Ding & Tabeta, 2024; Islam et al., 2022; Jin & Jiang, 2024). This was reinforced by the report of Okafor-Yarwood et al. (2020) that the blue economy could be successfully achieved when coastal development combined ecological, economic, socio-cultural, and institutional objectives through a collaboration between government and local communities.

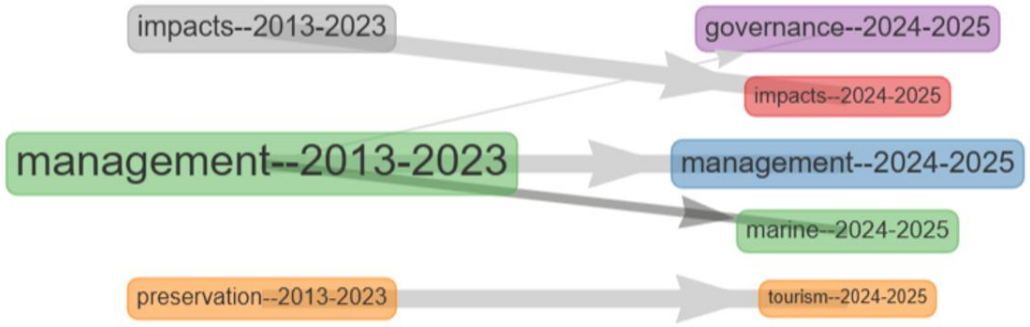

Figure 8. Topics of coastal management toward the blue economy in two decades
Source: Gathered by biblioshiny *R* package

5. Conclusions

In conclusion, this research demonstrated that the evaluation of coastal management and the blue economy had increased in recent years since the declaration of international commitments at the conference in Rio de Janeiro. The trend served as a form of global response to environmental damage, climate change, and the threat of environmental degradation in coastal and marine areas. Besides the positive economic impact, coastal area management was required to prioritize principles of sustainability in line with the blue economy. It was observed that research on coastal management toward the blue economy was dominated by authors and institutions from developed countries, specifically Europe. This reinforced the fact that developed countries were a step ahead in responding to the environmental crisis and the worrying global situation by increasing research on integrated coastal management as an effort to implement the principles of the blue economy.

The trends of research related to coastal management experienced a paradigm shift, from merely environmental conservation to social ecology toward sustainable development. Additionally, the issue of coastal tourism and community participation in coastal area management could be further explored in the future. Conceptually and practically, this research was expected to enrich the discourse on coastal area management and the blue economy. This was in line with the current international agenda arising from the threats of environmental damage and climate change. The government should consider a collaborative and integrated method to maintain coastal and marine ecosystems sustainably through cooperation with the community and industry. In addition, a multidisciplinary approach to coastal resource management can be implemented by comprehensively considering ecological, economic, social, technological, and governance aspects. Finally, this research had some limitations related to the keywords used in search strategies and the indexing conducted based on only one database.

Author Contributions

Conceptualization, K.K. and A.R.; methodology, K.K.; software, A.R.; validation, K.K. and I.M.Y.; formal analysis, K.K.; investigation, I.M.Y. and A.M.M.; resources, A.R.; data curation, I.M.Y.; writing—original draft preparation, K.K. and I.M.Y.; writing—review and editing, K.K., A.R. and A.M.M.; visualization, A.R.; supervision, K.K.; project administration, I.M.Y.; funding acquisition, K.K. All authors have read and agreed to

the published version of the manuscript.

Data Availability

The data used to support the research findings are available from the corresponding author upon request.

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Conflicts of Interest

The authors declare no conflict of interest.

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