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Climate Justice Through the Lens of Ocean Governance: Protecting the Sea and Its People in Indonesia's Small Islands

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Abstract

This study explores the concept of climate justice through the lens of ocean governance, focusing on the protection of Indonesia's small islands and their coastal communities. Small islands in Indonesia are among the most vulnerable to the impacts of climate change, including rising sea levels, ocean acidification, and the degradation of marine ecosystems. These islands are also home to indigenous and local communities who rely on the sea for their livelihoods, culture, and sustenance. However, the complex intersection of environmental degradation, economic development, and political marginalization often leaves these communities at risk of both climate impacts and exclusion from key decision-making processes. This research examines how Indonesia's ocean governance frameworks, including national policies and local conservation efforts, address (or fail to address) the climate justice concerns of small island communities. Through a combination of policy analysis, field research, and interviews with community leaders, marine experts, and policymakers, the study evaluates the effectiveness of current governance structures in balancing environmental protection, climate adaptation, and the rights of coastal communities. The findings suggest that while Indonesia has made strides in

promoting marine conservation and sustainable fisheries management, gaps remain in ensuring that small island communities are adequately involved in the governance process. The study argues for a more inclusive and equitable approach to ocean governance that recognizes the rights of local populations and integrates climate justice principles into marine policy. The research offers policy recommendations for enhancing community participation and protecting both the sea and its people.

[*Studi ini mengeksplorasi konsep keadilan iklim melalui lensa tata kelola laut, dengan fokus pada perlindungan pulau-pulau kecil di Indonesia dan masyarakat pesisirnya. Pulau-pulau kecil di Indonesia termasuk yang paling rentan terhadap dampak perubahan iklim, termasuk kenaikan permukaan laut, pengasaman laut, dan degradasi ekosistem laut. Pulau-pulau ini juga merupakan rumah bagi masyarakat adat dan lokal yang bergantung pada laut untuk mata pencaharian, budaya, dan penghidupan mereka. Namun, perpaduan kompleks antara degradasi lingkungan, pembangunan ekonomi, dan marginalisasi politik seringkali membuat masyarakat ini berisiko terkena dampak iklim dan terpinggirkan dari proses pengambilan keputusan penting. Penelitian ini mengkaji bagaimana kerangka kerja tata kelola laut Indonesia, termasuk kebijakan nasional dan upaya konservasi lokal, menangani (atau gagal menangani) masalah keadilan iklim masyarakat pulau kecil. Melalui kombinasi analisis kebijakan, penelitian lapangan, dan wawancara dengan para pemimpin masyarakat, ahli kelautan, dan pembuat kebijakan, studi ini mengevaluasi efektivitas struktur tata kelola saat ini dalam menyeimbangkan perlindungan lingkungan, adaptasi iklim, dan hak-hak masyarakat pesisir. Temuan penelitian menunjukkan bahwa meskipun Indonesia telah membuat kemajuan dalam mempromosikan konservasi laut dan pengelolaan perikanan berkelanjutan, masih terdapat kesenjangan dalam memastikan keterlibatan yang memadai dari masyarakat pulau kecil dalam proses tata kelola. Studi ini menganjurkan pendekatan yang lebih inklusif dan adil terhadap tata kelola laut yang mengakui hak-hak penduduk setempat dan mengintegrasikan prinsip-prinsip keadilan iklim ke dalam kebijakan kelautan. Penelitian ini menawarkan rekomendasi kebijakan untuk meningkatkan partisipasi masyarakat dan melindungi laut serta penduduknya.*]

Keywords: Climate Justice, Ocean Governance, Small Islands, Indonesia, Coastal Communities

Introduction

The ocean has become one of the central arenas in contemporary climate governance because marine ecosystems are simultaneously experiencing rapid environmental transformation and providing essential resources for millions of coastal populations. Rising sea levels, increasing ocean temperatures, ocean

acidification, coastal erosion, and declining marine biodiversity have created significant challenges for societies whose livelihoods, cultures, and identities are closely connected to marine environments. These challenges are particularly acute in small island contexts, where limited land availability, geographic isolation, and high dependence on marine resources intensify exposure to climate risks (Nurse et al., 2014; Hoegh-Guldberg et al., 2019). Consequently, climate change in ocean spaces is not merely an ecological problem but also a question of justice concerning who experiences climate impacts, who participates in decision-making, and who benefits from marine governance systems.

Small islands represent one of the clearest examples of climate injustice because communities that have historically contributed minimally to global greenhouse gas emissions often experience disproportionate consequences of climate change. Sea-level rise threatens settlements, freshwater availability, food security, and cultural continuity, while changes in marine ecosystems undermine fisheries-dependent livelihoods (Kelman, 2018; Thomas et al., 2020). The concept of climate justice provides an important analytical framework for understanding these inequalities because it highlights the uneven distribution of climate risks, adaptation capacities, and decision-making power among different social groups. Within this framework, climate justice consists not only of distributive justice regarding resources and impacts but also procedural justice concerning participation and recognition of vulnerable communities' rights and knowledge systems (Schlosberg & Collins, 2014; Sultana, 2022).

Indonesia provides a critical case for examining climate justice through the perspective of ocean governance because it represents one of the world's largest archipelagic countries, consisting of thousands of islands and extensive coastal zones. Indonesian coastal communities have historically developed strong economic, cultural, and social relationships with marine ecosystems through fishing, maritime trade, coastal agriculture, and traditional resource management practices. However, these communities increasingly face multiple pressures arising from climate change, coastal development, marine pollution, biodiversity loss, and competing economic interests in marine spaces. Studies on Indonesian coastal areas demonstrate that small-scale fishers and island communities are particularly vulnerable because their livelihoods depend heavily on ecological conditions that are increasingly affected by climate variability and environmental degradation (Muawanah et al., 2018; Siry, 2011).

The vulnerability of Indonesia's small islands is further intensified by governance challenges. Although Indonesia has developed comprehensive marine governance frameworks, including marine spatial planning, fisheries management policies, and marine conservation initiatives, the effectiveness of these frameworks in addressing climate justice concerns remains contested. Existing ocean governance approaches have often prioritized conservation targets, economic development, and administrative management, while

insufficiently addressing issues of social equity, community participation, and recognition of local rights. Research on coastal governance indicates that conservation initiatives may generate unintended consequences when local communities are excluded from decision-making processes or when traditional marine practices are insufficiently recognized within formal governance systems (Bennett et al., 2019; Fabinyi et al., 2022).

The relationship between ocean governance and climate justice has therefore become increasingly important in academic and policy debates. Ocean governance is no longer understood merely as the management of marine resources but as a complex institutional process involving ecological sustainability, economic interests, political authority, and social justice. Contemporary approaches emphasize the need for inclusive governance models that integrate scientific knowledge, local experiences, and community participation. The emerging concept of "blue justice" extends these debates by questioning whether blue economy initiatives and marine conservation programs distribute benefits and burdens fairly among different groups, particularly small-scale fishers and coastal communities (Bennett et al., 2021).

In Indonesia, these questions are particularly significant because marine governance occurs within a context of rapid economic transformation. Government initiatives promoting the blue economy, marine tourism, fisheries development, and maritime infrastructure aim to strengthen Indonesia's position as a global maritime power. However, these initiatives also raise concerns regarding potential conflicts between economic growth, environmental sustainability, and community rights. In small island regions, development projects may alter access to marine resources, transform coastal landscapes, and create new forms of vulnerability among communities dependent on traditional marine livelihoods. Therefore, achieving climate justice requires governance frameworks capable of balancing ecological protection with the social and cultural rights of coastal populations.

Recent scholarship emphasizes that effective climate adaptation in coastal and island contexts depends on strengthening local adaptive capacity and recognizing communities as active governance actors rather than passive recipients of climate policies. Community-based marine management, customary governance systems, and local ecological knowledge have demonstrated significant contributions to ecosystem conservation and climate resilience in various regions, including Indonesia. Examples such as customary marine tenure systems in eastern Indonesia illustrate how local institutions can support sustainable resource management while strengthening community resilience against environmental change (Cinner et al., 2016; Jupiter et al., 2017). However, these systems often remain marginalized within formal governance structures, limiting their potential contribution to national climate adaptation strategies.

Despite growing research on marine conservation and climate adaptation, important gaps remain regarding the integration of climate justice principles into Indonesia's ocean governance framework. Existing studies frequently examine marine biodiversity protection, fisheries management, or climate vulnerability separately, while limited attention has been given to how governance structures address questions of fairness, participation, and recognition among small island communities. This study addresses this gap by examining Indonesia's ocean governance through the lens of climate justice, focusing on how legal and institutional arrangements influence the protection of marine ecosystems and the rights of coastal communities.

This research argues that protecting Indonesia's small islands requires a shift from conventional ocean governance approaches toward a more inclusive and justice-oriented framework. Such an approach must recognize coastal communities not only as vulnerable populations affected by climate change but also as knowledge holders, resource managers, and legitimate participants in marine decision-making. By analyzing the intersection between climate justice and ocean governance, this study contributes to broader debates on equitable climate adaptation, sustainable marine management, and the future of small island resilience.

Literature Review

A. Climate Justice Theory and Ocean Inequality

Climate justice has emerged as an important analytical framework for understanding the unequal distribution of climate risks, responsibilities, and adaptation capacities among different societies. Unlike conventional climate governance approaches that primarily emphasize emission reduction and environmental management, climate justice focuses on the social and political dimensions of climate change by questioning who suffers from climate impacts, who has the capacity to respond, and whose knowledge and interests are represented in decision-making processes. Within this framework, climate change is understood as an issue of inequality involving historical responsibility, resource distribution, political participation, and recognition of marginalized communities (Schlosberg & Collins, 2014; Sultana, 2022).

The concept of climate justice is particularly relevant in ocean and small island contexts because marine climate impacts are unevenly experienced across regions and communities. Small island populations often contribute minimally to global emissions but experience severe consequences from sea-level rise, coastal hazards, and marine ecosystem degradation. These conditions illustrate the distinction between climate responsibility and climate vulnerability, where communities with limited historical contributions to environmental change frequently face the greatest risks (Robinson & Shine, 2018). Therefore, climate justice requires not only financial and technological support for adaptation but

also recognition of the rights, knowledge, and participation of affected communities.

Recent scholarship has expanded climate justice discussions by emphasizing three interconnected dimensions: distributive justice, procedural justice, and recognition justice. Distributive justice concerns the fair allocation of climate-related benefits, risks, and resources; procedural justice emphasizes meaningful participation in decision-making; while recognition justice focuses on respecting the identities, knowledge systems, and rights of marginalized groups (Fraser, 2009; Schlosberg, 2013). These dimensions provide an important framework for analyzing ocean governance because marine policies often involve conflicts between conservation objectives, economic interests, and the livelihoods of coastal populations.

In the context of ocean governance, climate injustice frequently emerges through unequal access to marine resources and decision-making authority. Coastal communities, particularly small-scale fishers, often depend directly on marine ecosystems but have limited influence over policies affecting fishing areas, conservation zones, and coastal development. This creates situations where communities bear the social costs of marine conservation or economic development while receiving limited benefits from these initiatives (Bennett et al., 2021). Consequently, climate justice requires governance systems that address not only ecological sustainability but also social equity within marine spaces.

B. Ocean Governance and Marine Resource Management

Ocean governance refers to the institutional arrangements, legal frameworks, and decision-making processes through which marine resources and ecosystems are managed. Contemporary ocean governance has evolved beyond traditional state-centered approaches toward more integrated models involving governments, scientific institutions, private actors, and local communities. This transformation reflects growing recognition that marine ecosystems are complex social-ecological systems requiring collaborative and adaptive governance approaches (Bennett et al., 2019; Gjerde et al., 2016).

The complexity of ocean governance is particularly evident in developing countries where marine ecosystems support both economic development and community livelihoods. Fisheries, tourism, coastal infrastructure, and conservation programs frequently compete for access to marine spaces. These competing interests create governance challenges because decisions regarding marine resource allocation often involve unequal power relations among stakeholders. Research on marine governance demonstrates that effective management requires not only ecological knowledge but also institutional arrangements capable of balancing environmental objectives with social needs (Pomeroy et al., 2019).

Marine governance has increasingly incorporated ecosystem-based approaches as a response to the limitations of sectoral management. Ecosystem-based marine management emphasizes maintaining ecological integrity while considering human interactions with marine systems. This approach has become central to marine protected areas (MPAs), sustainable fisheries management, and marine spatial planning. However, scholars have highlighted that conservation effectiveness depends heavily on governance legitimacy, community participation, and equitable distribution of conservation benefits (Jones et al., 2018).

In Indonesia, ocean governance has undergone significant transformation through policies promoting maritime development, marine conservation, and sustainable fisheries management. The expansion of marine protected areas and the adoption of marine spatial planning represent important efforts to improve marine sustainability. However, studies indicate that governance effectiveness remains constrained by institutional fragmentation, overlapping authorities, limited enforcement capacity, and insufficient participation of coastal communities (Siry, 2011; Muawanah et al., 2018). These challenges demonstrate that sustainable ocean governance requires not only regulatory frameworks but also mechanisms ensuring social legitimacy and justice.

C. Small Islands, Coastal Vulnerability, and Climate Adaptation

Small islands represent some of the most climate-sensitive environments globally due to their geographic characteristics and socioeconomic dependence on marine ecosystems. Limited land availability, exposure to coastal hazards, and reliance on fisheries and marine resources increase their vulnerability to climate change. Rising sea levels, coastal erosion, saltwater intrusion, and changes in marine productivity threaten not only economic activities but also cultural identities and social structures within island communities (Nurse et al., 2014).

The vulnerability of small islands is not determined solely by physical exposure to climate hazards. Social, economic, and institutional factors significantly influence communities' ability to adapt. Research on climate adaptation emphasizes that vulnerability emerges from the interaction between environmental risks and existing inequalities, including poverty, limited infrastructure, restricted political representation, and unequal access to resources (Barnett & Campbell, 2010). Therefore, climate adaptation policies must address underlying social conditions rather than focusing exclusively on technological responses.

For coastal communities, adaptation strategies are often closely connected with marine resource management. Small-scale fisheries communities, for example, rely on ecological knowledge, social networks, and flexible livelihood strategies to respond to environmental variability. However, climate change increasingly challenges these adaptive capacities by altering fish distribution,

reducing ecosystem productivity, and increasing uncertainty in marine environments (Allison et al., 2009). Without adequate institutional support, adaptation burdens may disproportionately fall on communities with the least political and economic capacity.

In Indonesia, small island communities experience these challenges within a broader context of rapid coastal transformation. Many communities depend on fisheries, coastal agriculture, and marine-based livelihoods, while simultaneously facing pressures from tourism development, resource extraction, and conservation restrictions. Research indicates that Indonesian coastal adaptation requires governance approaches that combine scientific assessments with local knowledge and community participation (Glaser et al., 2010). Such approaches are essential for ensuring that adaptation measures strengthen rather than undermine coastal livelihoods.

D. Blue Justice and Community Participation in Marine Governance

The concept of blue justice has emerged as a critical perspective within ocean governance debates by examining whether marine development and conservation initiatives produce equitable outcomes. While the blue economy agenda promotes sustainable use of ocean resources for economic growth, scholars have raised concerns that such approaches may reproduce existing inequalities if benefits are concentrated among powerful actors while costs are transferred to vulnerable coastal communities (Bennett et al., 2021).

Blue justice challenges the assumption that economic growth and environmental sustainability automatically benefit all stakeholders. In many coastal regions, large-scale fisheries, tourism development, conservation initiatives, and marine infrastructure projects may restrict local access to marine resources or marginalize traditional users. Therefore, justice-oriented ocean governance requires attention to power relations, resource access, and community participation.

Community participation has become increasingly recognized as a key principle of effective marine governance. Studies demonstrate that local communities often possess valuable ecological knowledge and management practices that contribute to sustainable resource use. However, participation must extend beyond consultation toward meaningful involvement in decision-making processes. Without decision-making authority, community participation risks becoming symbolic rather than transformative (Bennett et al., 2019).

Indonesia provides important examples of community-based marine governance, including customary systems such as *sasi laut* in Maluku and community-managed conservation initiatives in eastern Indonesia. These systems demonstrate how local institutions can contribute to marine sustainability through collective rules, social enforcement, and ecological knowledge. Nevertheless, the integration of customary practices into formal

governance systems remains limited due to legal uncertainty and institutional constraints.

E. Indonesian Legal and Policy Framework on Small Island Governance

Indonesia has developed a comprehensive legal framework governing coastal areas, small islands, and marine resources. Law No. 27/2007 on Management of Coastal Areas and Small Islands, amended by Law No. 1/2014, provides the foundation for coastal governance by regulating spatial planning, resource utilization, conservation, and community rights. Additionally, Law No. 32/2014 on Maritime Affairs establishes broader principles for maritime governance and sustainable ocean management.

Despite these developments, Indonesian marine governance continues to face challenges in implementing climate justice principles. Existing legal frameworks often emphasize resource management and conservation objectives but provide limited mechanisms for ensuring equitable participation of coastal communities. Small island communities may remain vulnerable when development decisions are determined primarily through centralized planning processes without sufficient consideration of local needs and knowledge.

The legal recognition of coastal community rights is particularly important because many Indonesian small island populations have developed customary relationships with marine environments. However, formal recognition of customary marine governance remains inconsistent compared with recognition of terrestrial customary rights. This creates uncertainty regarding community authority over marine resources and limits the ability of local institutions to contribute effectively to climate adaptation.

Therefore, integrating climate justice into Indonesia's ocean governance requires legal and institutional reforms that strengthen community participation, recognize local knowledge systems, and ensure equitable distribution of marine benefits. A justice-oriented governance framework must move beyond viewing coastal communities as vulnerable groups requiring protection and recognize them as active partners in managing marine ecosystems.

Methods

This study employs a qualitative socio-legal research approach to examine climate justice within Indonesia's ocean governance framework, particularly regarding the protection of small island ecosystems and coastal communities. A qualitative approach is appropriate because the study focuses on understanding institutional arrangements, legal frameworks, governance practices, and social experiences related to climate vulnerability and marine resource management. Rather than measuring climate impacts solely through quantitative indicators, this research examines how governance systems distribute risks, opportunities,

and decision-making authority among different actors involved in coastal and marine management. The socio-legal perspective enables the study to analyze the interaction between formal legal structures and the realities experienced by coastal communities in small island regions.

The research adopts Indonesia's small islands and coastal areas as the primary analytical context due to their high exposure to climate-related ocean impacts and their strategic importance within national marine governance. Indonesia provides a significant case study because of its extensive archipelagic geography, dependence on marine ecosystems, and diversity of coastal communities whose livelihoods are closely connected to fisheries and marine resources. The study focuses on the relationship between climate change impacts, ocean governance institutions, and community rights by examining selected coastal and small island contexts, including regions where marine conservation initiatives, fisheries management programs, and community-based governance practices interact. This approach allows the research to explore both national-level governance frameworks and local experiences of climate adaptation.

Data collection was conducted through a combination of policy analysis, document review, and qualitative interviews. Primary data were obtained through semi-structured interviews with relevant stakeholders, including coastal community representatives, marine conservation practitioners, fisheries experts, researchers, and policymakers involved in ocean governance. The interviews explored perceptions regarding climate change impacts, marine resource management, community participation, governance challenges, and the effectiveness of existing adaptation strategies. Secondary data were collected through analysis of Indonesian legal instruments, including legislation concerning coastal areas, small island management, fisheries, and maritime affairs, as well as international frameworks related to climate justice, ocean governance, and sustainable development.

The collected data were analyzed using thematic analysis to identify key patterns related to climate justice, governance effectiveness, and community participation. The analytical process involved categorizing information into several themes, including distributive justice in marine resource allocation, procedural justice in decision-making processes, recognition of coastal communities' rights and knowledge systems, and institutional challenges within ocean governance. The findings were then interpreted through theoretical perspectives on climate justice, blue justice, and social-ecological resilience to understand how governance structures influence the ability of small island communities to respond to climate change.

Ethical considerations were integrated throughout the research process, particularly because the study involves communities whose livelihoods and cultural identities are closely connected to marine environments. The research followed principles of informed consent, confidentiality, and respectful

engagement with local perspectives. Coastal communities were approached not merely as vulnerable populations affected by climate change but as knowledge holders and governance actors with valuable experiences in managing marine ecosystems. By applying a participatory and rights-sensitive approach, this research seeks to contribute to more equitable ocean governance models that recognize both ecological sustainability and social justice.

Analysis and Discussion

A. Climate Impacts and Vulnerability of Indonesia's Small Island Communities

The findings demonstrate that Indonesia's small island communities experience climate change as a multidimensional threat that extends beyond physical environmental impacts. Climate change affects not only marine ecosystems but also the social, economic, and cultural foundations of communities whose livelihoods depend on ocean resources. Rising sea levels, increasing ocean temperatures, coastal erosion, changing rainfall patterns, and marine biodiversity decline have created growing uncertainty for coastal populations. These impacts reveal the central dimension of climate justice: communities that have contributed relatively little to global greenhouse gas emissions often experience some of the most severe consequences of climate change, while possessing limited institutional and financial capacity to respond (Nurse et al., 2014; Robinson & Shine, 2018).

Sea-level rise represents one of the most significant climate-related challenges for Indonesia's small islands. Due to their low elevation and limited geographic space, many island communities face direct risks from coastal inundation, shoreline degradation, saltwater intrusion, and the loss of habitable areas. Unlike larger mainland regions where populations may relocate inland, small islands often have limited adaptation options because land availability is highly constrained. This condition creates what scholars describe as "existential vulnerability," where climate change threatens not only physical infrastructure but also the continuity of communities, cultural practices, and relationships with ancestral territories (Kelman, 2018; Thomas et al., 2020).

In Indonesia, the impacts of sea-level rise are closely connected with existing socioeconomic vulnerabilities. Many small island communities rely heavily on small-scale fisheries, coastal agriculture, and marine-based livelihoods that are highly sensitive to environmental changes. Declining fish stocks, shifting fish migration patterns, coral reef degradation, and increasing frequency of extreme weather events directly affect household income and food security. Research on fisheries-dependent communities demonstrates that climate change creates additional pressures on groups that already experience economic uncertainty, limited market access, and weak institutional support (Allison et al., 2009; Cinner et al., 2016).

Marine ecosystem degradation represents another important dimension of vulnerability. Coral reefs, mangrove forests, and seagrass ecosystems provide essential ecological services, including coastal protection, fisheries productivity, and carbon storage. However, these ecosystems are increasingly threatened by ocean warming, acidification, pollution, and unsustainable resource exploitation. The degradation of marine ecosystems reduces natural adaptation capacity because coastal communities lose ecological buffers that traditionally protected them from environmental disturbances. Studies on coastal resilience emphasize that ecosystem health and community resilience are strongly interconnected, particularly in small island environments where communities depend directly on marine resources (Hoegh-Guldberg et al., 2019).

The vulnerability of Indonesia's small island communities is further shaped by governance and institutional factors. Climate impacts are not experienced equally because communities possess different levels of adaptive capacity depending on access to resources, political representation, infrastructure, and decision-making processes. Coastal communities with limited influence over marine policies often face greater challenges in accessing adaptation programs or influencing decisions regarding marine resource management. This demonstrates that climate vulnerability is socially constructed through historical patterns of inequality and governance arrangements, rather than being determined solely by exposure to environmental hazards (Barnett & Campbell, 2010).

A critical finding of this study is that climate impacts on small islands are intensified by the marginal position of coastal communities within ocean governance systems. Although these communities possess extensive knowledge regarding marine ecosystems and environmental changes, their experiences are frequently underrepresented in formal policy processes. Decisions regarding marine conservation, fisheries regulation, tourism development, and coastal infrastructure are often shaped through centralized administrative mechanisms that may overlook local realities. This creates a procedural justice challenge, where communities affected by marine policies have limited opportunities to participate meaningfully in shaping those policies.

The issue of participation is particularly significant because many coastal communities have developed adaptive strategies through generations of interaction with marine ecosystems. Local fishing practices, seasonal knowledge, customary marine management systems, and collective resource-sharing arrangements represent important forms of adaptive capacity. However, when formal governance systems fail to recognize these practices, communities may lose opportunities to contribute to climate adaptation planning. This reflects a broader challenge within climate governance, where scientific and institutional knowledge is often prioritized over local and experiential knowledge systems (Bennett et al., 2019).

Small island vulnerability in Indonesia must therefore be understood through an integrated climate justice perspective. Environmental exposure alone cannot explain why some communities experience greater climate risks than others. Instead, vulnerability emerges from the interaction between ecological changes, economic dependency, governance structures, and social inequalities. A community located in a climate-sensitive environment may demonstrate strong resilience if supported by inclusive institutions, while communities with limited political recognition may remain highly vulnerable despite possessing valuable adaptive knowledge.

The findings also indicate that adaptation strategies focusing solely on physical infrastructure may be insufficient for addressing the complex vulnerabilities experienced by small island communities. While coastal protection structures, relocation programs, and technological interventions may reduce certain risks, they do not automatically address underlying issues of participation, resource access, and social justice. Climate adaptation requires approaches that strengthen community agency, protect marine ecosystems, and ensure equitable involvement in governance processes.

From a policy perspective, addressing climate vulnerability in Indonesia's small islands requires a shift from vulnerability-based approaches toward justice-oriented adaptation. Coastal communities should not be viewed merely as populations requiring protection but as active participants capable of contributing to marine governance. Strengthening their adaptive capacity requires improving access to decision-making processes, recognizing local knowledge, supporting sustainable livelihoods, and ensuring fair distribution of benefits derived from marine resources.

Overall, the findings demonstrate that climate change impacts on Indonesia's small islands represent both an environmental and governance challenge. The vulnerability of coastal communities is produced not only by rising seas and changing oceans but also by institutional arrangements that determine whose voices are recognized within marine governance. Therefore, achieving climate justice in small island contexts requires governance approaches that simultaneously address ecological sustainability, social equity, and community empowerment.

B. Ocean Governance and the Challenge of Climate Justice in Indonesia

The findings indicate that Indonesia has developed a relatively comprehensive ocean governance framework aimed at improving marine sustainability, strengthening fisheries management, and expanding marine conservation. As an archipelagic state with extensive marine territory, Indonesia has increasingly positioned ocean governance as a central component of national development strategies. Policies related to marine spatial planning, marine

protected areas, sustainable fisheries, and the blue economy demonstrate significant institutional efforts to balance economic utilization with environmental protection. However, this study finds that the effectiveness of these governance frameworks in achieving climate justice remains limited because ecological objectives have not always been accompanied by adequate consideration of social equity, community rights, and participatory decision-making.

One of the major challenges in Indonesia's ocean governance is the tension between conservation objectives and the livelihood needs of coastal communities. The expansion of marine protected areas (MPAs), while important for biodiversity conservation and ecosystem resilience, may create unintended consequences when local communities are excluded from planning and management processes. Conservation approaches that emphasize spatial restrictions without sufficient community participation can limit access to traditional fishing grounds and marine resources. This situation reflects broader debates in marine governance, where conservation success is increasingly recognized as dependent not only on ecological effectiveness but also on social legitimacy and fairness in the distribution of costs and benefits (Jones et al., 2018; Bennett et al., 2019).

Indonesia has made significant progress in expanding marine conservation areas as part of its commitment to protect marine biodiversity and support sustainable ocean management. However, quantitative expansion of protected areas does not necessarily guarantee climate justice. The effectiveness of conservation initiatives depends on governance quality, including transparency, accountability, institutional coordination, and meaningful participation of affected communities. Research on marine protected areas globally demonstrates that conservation interventions may reproduce inequalities when local communities bear restrictions on resource use while external actors gain economic or environmental benefits (Bennett et al., 2021). This challenge is particularly relevant for small island communities whose livelihoods depend directly on access to marine ecosystems.

The study further reveals that Indonesia's ocean governance remains influenced by a predominantly state-centered administrative approach. Although recent policies increasingly acknowledge community participation, decision-making authority remains concentrated within government institutions. Coastal communities are often included through consultation mechanisms rather than empowered as equal governance partners. This distinction is important because procedural justice requires more than informing communities about decisions; it requires creating institutional mechanisms through which communities can influence policy outcomes. Without such mechanisms, participation risks becoming symbolic rather than transformative.

The challenge of procedural justice is closely connected with the fragmented nature of marine governance institutions in Indonesia. Marine management involves multiple government agencies responsible for fisheries, conservation, spatial planning, tourism, coastal development, and environmental protection. Overlapping authorities can create coordination challenges and reduce governance effectiveness. For coastal communities, institutional fragmentation may generate uncertainty regarding access rights, regulatory obligations, and channels for participation. Effective climate justice requires governance systems capable of integrating different policy sectors while ensuring that community interests are not marginalized within bureaucratic processes.

Another significant finding concerns the relationship between ocean governance and economic development strategies, particularly the emerging blue economy agenda. Indonesia has increasingly promoted the blue economy as a pathway for sustainable marine development by encouraging fisheries modernization, marine tourism, renewable energy, and ocean-based industries. While the blue economy provides opportunities for economic growth and environmental innovation, scholars have raised concerns that it may reproduce existing inequalities if economic benefits are captured primarily by powerful actors while small-scale coastal communities experience restricted access to resources (Bennett et al., 2021; Silver et al., 2015).

From a climate justice perspective, sustainable ocean development requires examining who benefits and who bears the costs of marine economic transformation. Large-scale investments in coastal tourism, aquaculture, infrastructure, and marine industries may generate national economic benefits but can also create pressures on local communities through displacement, resource competition, and environmental change. Therefore, blue economy policies should incorporate justice principles by ensuring equitable benefit-sharing, protecting community livelihoods, and recognizing the rights of small-scale marine resource users.

The findings also highlight the importance of integrating climate adaptation into ocean governance frameworks. Traditional marine management approaches often focus on fisheries productivity, conservation targets, or economic utilization, while climate change introduces new uncertainties requiring adaptive governance. Ocean governance institutions must therefore consider changing ecological conditions, including shifting fish distributions, increasing storm intensity, coral reef decline, and coastal ecosystem transformation. Adaptive governance approaches emphasize flexibility, learning, and collaboration among multiple actors as essential elements for managing complex social-ecological systems (Armitage et al., 2012).

Indonesia's small island communities possess valuable knowledge regarding marine ecosystems and environmental changes, yet their knowledge remains insufficiently integrated into formal ocean governance processes. Local

observations of fish migration, seasonal patterns, weather changes, and ecosystem conditions can complement scientific assessments and improve adaptation planning. However, institutional barriers often prevent this knowledge from influencing policy decisions. This reflects a recognition justice issue, where certain forms of knowledge and expertise receive greater legitimacy than others.

The findings suggest that strengthening climate justice within Indonesia's ocean governance requires a transformation from management-based approaches toward governance-based approaches. Management focuses primarily on controlling resources and regulating human activities, while governance emphasizes relationships, participation, and shared authority among different actors. A governance approach that incorporates climate justice would recognize coastal communities as legitimate actors with rights, responsibilities, and expertise in managing marine ecosystems.

This transformation requires several institutional improvements. First, marine governance should strengthen mechanisms for meaningful community participation, particularly in decisions related to marine spatial planning, conservation areas, and coastal development. Second, legal and institutional recognition of customary marine governance practices should be expanded to support locally appropriate management approaches. Third, climate adaptation considerations should become integrated components of marine policies rather than treated as separate environmental concerns.

The experience of Indonesia demonstrates that ocean governance effectiveness cannot be measured solely through ecological indicators such as protected area coverage or fisheries productivity. A genuinely sustainable ocean governance system must also evaluate whether policies promote fairness, inclusion, and community resilience. Climate justice provides an important framework for assessing these dimensions because it reveals the social consequences of marine governance decisions and highlights the importance of protecting vulnerable communities.

Overall, this section demonstrates that Indonesia has established important foundations for ocean governance, but significant challenges remain in ensuring that these frameworks achieve climate justice objectives. Sustainable marine governance requires balancing ecological conservation, economic development, and social rights. Without addressing inequalities in participation, resource access, and decision-making authority, ocean governance initiatives risk protecting marine ecosystems while simultaneously increasing vulnerability among the communities most dependent on them.

C. Coastal Communities, Indigenous Knowledge, and Marine Stewardship

The findings demonstrate that coastal communities in Indonesia possess extensive ecological knowledge and governance practices that contribute significantly to marine conservation and climate adaptation. Contrary to perspectives that portray coastal populations as merely vulnerable groups affected by climate change, this study reveals that many communities have developed sophisticated systems of marine stewardship through long-term interactions with coastal and ocean ecosystems. These practices represent important forms of adaptive capacity because they enable communities to monitor ecological changes, regulate resource use, and maintain social institutions that support sustainable relationships with marine environments.

Indigenous and local knowledge systems are particularly important in small island contexts because they are embedded within specific ecological and cultural landscapes. Coastal communities often develop detailed understandings of marine conditions, including seasonal variations, fish behavior, weather patterns, coral reef conditions, and resource availability. Such knowledge is transmitted through generations and forms the basis for community decision-making regarding fishing practices, resource conservation, and adaptation strategies. Research on local ecological knowledge demonstrates that these knowledge systems can complement scientific approaches by providing localized observations of environmental change and ecosystem dynamics (Berkes, 2018; Tengö et al., 2017).

One important example in Indonesia is the customary marine management system known as *sasi laut*, particularly practiced in Maluku and parts of eastern Indonesia. *Sasi laut* represents a traditional governance mechanism that regulates access to marine resources through customary rules, temporary harvesting restrictions, and collective monitoring. The system reflects principles of ecological sustainability because it allows marine resources to recover while maintaining community responsibility toward ecosystem protection. Rather than relying solely on external enforcement mechanisms, *sasi laut* operates through social norms, cultural values, and collective accountability. Studies have shown that customary management systems such as *sasi* can contribute to biodiversity conservation and sustainable fisheries when they receive appropriate institutional recognition (Novaczek et al., 2011; Harkes & Novaczek, 2002).

The experience of Raja Ampat provides another important example of community-based marine stewardship in Indonesia. Located within one of the world's most biodiverse marine regions, Raja Ampat has attracted global attention due to its coral reef ecosystems and marine conservation initiatives. Local communities have historically maintained relationships with marine resources through customary practices, including traditional fishing regulations and community-based resource management. The integration of customary

knowledge with conservation initiatives has contributed to improved marine protection outcomes. However, research also highlights that conservation success depends on ensuring that local communities remain central actors rather than being displaced by externally designed conservation models (McLeod et al., 2009; Stacey et al., 2013).

These examples demonstrate that Indigenous and local marine governance systems embody important principles of climate justice, particularly recognition justice. Recognition justice requires acknowledging that coastal communities possess legitimate knowledge, cultural relationships, and governance capacities that deserve institutional respect. However, formal marine governance systems have historically privileged scientific and bureaucratic forms of knowledge while marginalizing local ecological knowledge. This imbalance creates a governance challenge because communities with direct relationships to marine ecosystems may have limited influence over decisions affecting those ecosystems.

The marginalization of local marine knowledge is closely connected with broader patterns of political and institutional inequality. Many coastal communities in Indonesia experience limited representation in marine planning processes despite being directly affected by decisions regarding conservation zones, fisheries regulations, and coastal development. When local communities are excluded from decision-making, governance systems may fail to incorporate important ecological information and may generate social conflicts. Therefore, integrating local knowledge into ocean governance is not only a technical strategy for improving environmental management but also a requirement of procedural and recognition justice.

The relationship between local knowledge and climate adaptation is particularly important under conditions of increasing environmental uncertainty. Climate change is altering marine ecosystems in ways that challenge traditional livelihood systems, including changes in fish distribution, coral reef health, and seasonal patterns. However, local knowledge systems provide communities with mechanisms for responding to uncertainty through adaptive practices, livelihood diversification, and collective resource management. These practices demonstrate that adaptation is not only a technological process but also a social process based on learning, cooperation, and institutional flexibility.

Nevertheless, the capacity of coastal communities to maintain marine stewardship practices is increasingly challenged by external pressures. Coastal development, industrial fishing, tourism expansion, pollution, and climate impacts can weaken traditional governance systems by changing access patterns and reducing community authority over marine resources. In some cases, conservation initiatives may unintentionally create conflicts when they restrict community access without recognizing historical relationships between communities and marine territories. This illustrates the importance of ensuring

that marine conservation policies incorporate justice principles and avoid reproducing forms of exclusion.

Legal recognition represents a critical factor determining whether community-based marine stewardship can contribute effectively to climate adaptation. While Indonesia has recognized certain aspects of customary rights, legal recognition of customary marine governance remains less developed compared with terrestrial customary rights. This creates uncertainty regarding the authority of communities to regulate marine resources and limits opportunities for integrating traditional governance systems into formal ocean management frameworks. Strengthening legal recognition of customary marine practices would therefore represent an important step toward more inclusive and adaptive ocean governance.

The findings also indicate that community participation should move beyond consultation toward co-management arrangements. Co-management provides a governance model where responsibilities and decision-making authority are shared among government institutions, local communities, scientists, and other stakeholders. International experiences demonstrate that co-management approaches can improve conservation outcomes by combining scientific expertise with local knowledge while enhancing legitimacy and compliance among resource users (Pomeroy et al., 2019). For Indonesia's small islands, co-management offers a pathway to integrate climate adaptation, marine conservation, and community rights.

From a climate justice perspective, empowering coastal communities as marine stewards addresses multiple dimensions of justice simultaneously. It supports distributive justice by ensuring communities benefit from marine resources; procedural justice by strengthening participation in decision-making; and recognition justice by respecting local knowledge and cultural relationships with the ocean. This integrated approach challenges conventional governance models that separate environmental protection from social rights.

Furthermore, the findings demonstrate that coastal communities represent essential partners in protecting Indonesia's marine ecosystems. Their knowledge systems and stewardship practices provide valuable contributions to climate adaptation and biodiversity conservation. However, realizing this potential requires institutional reforms that recognize customary governance, strengthen community participation, and ensure equitable relationships between state institutions and coastal populations. Protecting the sea and its people therefore requires not only stronger environmental regulation but also a transformation toward inclusive and justice-oriented ocean governance.

D. Legal Dimensions of Climate Justice in Indonesian Ocean Governance

The findings reveal that Indonesia has established an extensive legal framework for managing coastal areas, small islands, and marine resources. As an archipelagic state, Indonesia has developed various legal instruments aimed at balancing marine conservation, economic development, and sustainable resource utilization. These frameworks demonstrate the state's recognition that marine ecosystems require comprehensive governance mechanisms due to their ecological, economic, and social importance. However, from a climate justice perspective, the effectiveness of these legal frameworks remains limited because formal recognition of marine sustainability has not always been accompanied by adequate protection of coastal communities' rights, participation, and adaptive capacities.

The legal foundation of Indonesia's coastal governance is primarily established through Law No. 27/2007 on Management of Coastal Areas and Small Islands, as amended by Law No. 1/2014. This legislation provides principles for coastal planning, conservation, utilization, and community involvement in managing coastal resources. The law recognizes that coastal areas and small islands possess strategic ecological and economic values requiring integrated management approaches. Importantly, it acknowledges the role of communities in coastal resource management. However, implementation challenges remain, particularly regarding the extent to which community participation influences actual decision-making processes rather than functioning only as a procedural requirement.

The development of marine governance was further strengthened through Law No. 32/2014 on Maritime Affairs, which established a broader framework for managing Indonesia's maritime resources. The law emphasizes sustainable marine development, marine protection, and the strategic importance of ocean resources for national development. Nevertheless, the legal orientation of maritime governance has historically focused strongly on state sovereignty, economic utilization, and resource management. While these objectives are important, climate justice requires additional attention to questions of equity, vulnerability, and the rights of communities whose livelihoods depend directly on marine ecosystems.

One significant legal challenge concerns the recognition of customary marine rights. Unlike terrestrial customary rights, which have received greater attention within Indonesian legal and policy debates, customary marine governance systems remain relatively weakly recognized. Many coastal communities, particularly in eastern Indonesia, possess traditional systems governing access to marine resources, conflict resolution, and ecological protection. However, the absence of strong legal mechanisms recognizing these systems creates uncertainty regarding community authority over marine spaces.

This situation reflects a broader tension between state-centered marine governance and community-based forms of environmental management.

From the perspective of climate justice, this legal uncertainty represents a recognition justice problem. Recognition justice requires that governance systems acknowledge the identities, knowledge systems, and institutional practices of communities affected by environmental change. When customary marine governance systems are insufficiently recognized, communities may lose not only access to resources but also their ability to contribute to climate adaptation and ecosystem protection. Therefore, legal recognition of customary marine institutions should be viewed not merely as a cultural issue but as an essential component of effective climate governance.

The legal framework for marine protected areas (MPAs) illustrates another important challenge. Indonesia has significantly expanded its marine conservation areas as part of national and international commitments to protect marine biodiversity. MPAs provide important ecological benefits by protecting habitats, maintaining fisheries productivity, and strengthening ecosystem resilience. However, conservation regulations may create social tensions when restrictions on resource use are implemented without sufficient consideration of local livelihoods. In some cases, communities may experience reduced access to traditional fishing areas while having limited involvement in conservation decision-making processes.

Such situations highlight the importance of procedural justice within marine conservation law. Environmental regulations that affect coastal communities should incorporate meaningful participation mechanisms throughout the policy process, including planning, implementation, monitoring, and evaluation. Participation should not be limited to consultation but should provide communities with genuine opportunities to influence decisions. Research on marine governance demonstrates that conservation initiatives are more effective and socially sustainable when local communities perceive governance arrangements as legitimate and fair (Jones et al., 2018; Bennett et al., 2019).

Another legal challenge relates to the fragmented institutional structure governing Indonesia's marine environment. Marine governance involves multiple legal regimes and government institutions responsible for fisheries, environmental protection, spatial planning, coastal development, and conservation. While sectoral specialization can improve administrative efficiency, overlapping mandates may create coordination problems and weaken accountability. For coastal communities, fragmented governance can make it difficult to identify responsible institutions, access legal protections, or participate effectively in decision-making processes.

The integration of climate change considerations into Indonesian marine law also remains an important challenge. Existing marine regulations address conservation and resource management but do not always explicitly incorporate

climate adaptation principles. Climate change introduces new forms of uncertainty, including shifting marine ecosystems, changing fisheries patterns, and increasing coastal hazards. Therefore, marine legal frameworks must evolve from static resource management approaches toward adaptive governance models capable of responding to long-term environmental changes.

An adaptive legal approach requires strengthening legal flexibility, improving institutional coordination, and incorporating scientific and local knowledge into decision-making. Climate adaptation law should recognize that coastal ecosystems and communities are constantly changing and that governance systems must support learning and adjustment. This is particularly important for small islands, where environmental changes may occur faster than institutional responses. A rigid legal framework may become ineffective when faced with rapidly changing climate conditions.

The concept of climate justice also requires examining the distribution of benefits and burdens created by marine policies. Marine development initiatives, including tourism, fisheries modernization, and blue economy projects, may generate economic opportunities but can also produce unequal outcomes. Without appropriate safeguards, coastal communities may experience displacement, reduced resource access, or increased vulnerability. Therefore, legal frameworks should include mechanisms for equitable benefit-sharing, protection of small-scale fishers, and safeguards against disproportionate impacts on vulnerable groups.

The findings suggest that strengthening climate justice within Indonesian ocean governance requires legal reforms in three main areas. First, Indonesia needs stronger recognition of customary marine governance systems to support community-based stewardship. Second, participation mechanisms must be improved to ensure coastal communities have meaningful influence over decisions affecting marine resources. Third, climate adaptation principles should be integrated systematically into marine legislation and policy implementation.

Overall, Indonesia's ocean governance framework provides important foundations for marine sustainability but requires further development to fully address climate justice concerns. Legal recognition of environmental protection alone is insufficient if vulnerable communities remain excluded from governance processes. A justice-oriented marine legal framework must combine ecological protection with social rights by ensuring that coastal communities are recognized as legitimate actors in managing and protecting ocean ecosystems. Through such an approach, ocean governance can become not only a mechanism for conserving marine environments but also a pathway for advancing equity, resilience, and climate justice.

E. Toward Inclusive and Just Ocean Governance for Small Islands

The findings of this study demonstrate that achieving climate justice in Indonesia's small islands requires a fundamental transformation in the way ocean governance is conceptualized and implemented. Current governance approaches have contributed significantly to marine conservation and resource management; however, they remain insufficient in addressing the interconnected challenges of climate vulnerability, social inequality, and community marginalization. A just ocean governance framework must move beyond the traditional emphasis on resource regulation and conservation outcomes toward a more inclusive model that recognizes the ocean as both an ecological system and a social space where communities, cultures, and livelihoods are deeply connected.

One of the central arguments emerging from this study is that climate justice should become an explicit principle within Indonesia's ocean governance framework. Although existing marine policies address sustainability, conservation, and economic development, climate justice considerations remain relatively fragmented. Incorporating climate justice requires policymakers to evaluate marine decisions not only based on ecological effectiveness but also according to their impacts on vulnerable communities. This includes assessing who benefits from marine development initiatives, who bears the costs of conservation measures, and whose knowledge and interests are represented in governance processes.

An inclusive ocean governance model requires strengthening the participation of coastal communities at all stages of marine decision-making. Participation should not be limited to consultation mechanisms after major policy decisions have already been established. Instead, communities should be involved in agenda-setting, planning, implementation, monitoring, and evaluation processes. Such participation is particularly important for small island communities because they possess direct knowledge of marine ecosystems and experience the consequences of environmental changes more immediately than many other stakeholders. Strengthening participatory governance would improve not only social legitimacy but also the effectiveness of climate adaptation strategies.

The findings further suggest that community-based and customary marine governance systems should be integrated more effectively into formal governance structures. Local institutions such as *sasi laut* demonstrate that communities possess governance capacities that can support conservation and adaptation objectives. Rather than viewing customary practices as informal or secondary systems, policymakers should recognize them as complementary governance mechanisms. Legal and institutional recognition of these systems would contribute to both ecological sustainability and social justice by empowering communities as active marine managers.

Another important implication concerns the future direction of Indonesia's blue economy strategy. The blue economy has significant potential to support sustainable development, but its implementation must avoid reproducing existing inequalities within coastal regions. Economic growth based on marine resources should not be evaluated solely through indicators such as investment, production, or revenue generation. Instead, blue economy policies should incorporate social indicators, including livelihood security, equitable benefit distribution, community participation, and ecosystem resilience. Without these considerations, blue economy initiatives risk becoming a continuation of extractive development models under a sustainability-oriented framework.

Climate adaptation should also become a central component of marine governance rather than a separate policy area. The impacts of climate change are transforming marine ecosystems in ways that require flexible and adaptive governance arrangements. Marine spatial planning, fisheries management, and conservation policies should incorporate climate projections and local adaptation knowledge. Adaptive governance approaches can support continuous learning and adjustment by encouraging collaboration among government institutions, scientific communities, and coastal populations.

Institutional coordination represents another key area requiring improvement. Indonesia's marine governance involves multiple sectors and levels of government, which can create overlapping responsibilities and policy inconsistencies. A more integrated governance framework is necessary to ensure that climate adaptation, marine conservation, fisheries management, and coastal development objectives are aligned. Strengthening coordination mechanisms would reduce institutional fragmentation and create clearer pathways for community engagement and accountability.

The study also emphasizes the importance of strengthening legal safeguards for vulnerable coastal communities. Climate justice requires that legal frameworks protect communities from disproportionate impacts caused by environmental policies or economic development projects. This includes ensuring access rights for small-scale fishers, protecting customary marine practices, and establishing fair procedures for resolving conflicts over marine resources. Legal protection should therefore be understood not only as environmental regulation but also as a mechanism for protecting social rights and promoting resilience.

At the international level, Indonesia's experience reflects broader debates regarding the governance of oceans under climate change. Small island communities worldwide face similar challenges involving limited political influence, environmental vulnerability, and unequal access to adaptation resources. Lessons from Indonesia demonstrate that effective ocean governance requires combining ecological knowledge, legal recognition, and participatory

institutions. This approach aligns with global discussions on sustainable development, ocean equity, and the rights of coastal communities.

Based on these findings, this study proposes several governance directions for advancing climate justice in Indonesia's small islands. First, marine policies should incorporate explicit climate justice principles that address vulnerability, participation, and equity. Second, legal recognition of customary marine governance should be strengthened to support community-based stewardship. Third, blue economy initiatives should adopt inclusive approaches that prioritize both ecological sustainability and community welfare. Fourth, climate adaptation planning should integrate scientific knowledge with local ecological knowledge to develop context-specific solutions.

Ultimately, protecting Indonesia's small islands requires recognizing that the future of ocean sustainability depends on the relationship between marine ecosystems and the people who depend on them. The sea cannot be protected through ecological interventions alone; it requires governance systems that respect social relationships, cultural values, and community rights. A climate justice-oriented approach provides a pathway for creating ocean governance that protects both marine environments and the people whose lives are inseparable from them.

Conclusion

This study demonstrates that climate justice provides an essential framework for understanding and addressing the challenges faced by Indonesia's small island communities within the context of ocean governance. Climate change impacts, including sea-level rise, marine ecosystem degradation, and declining fisheries productivity, are not experienced equally among coastal populations. Small island communities, despite having limited contributions to global climate change, face disproportionate environmental and socioeconomic risks due to their dependence on marine ecosystems and limited adaptive capacity. The findings highlight that vulnerability is not determined solely by ecological exposure but is also shaped by governance structures, political representation, and access to decision-making processes. Therefore, protecting small islands requires an approach that integrates environmental sustainability with principles of fairness, participation, and recognition of community rights.

The study further reveals that while Indonesia has developed significant legal and institutional frameworks for marine governance, important challenges remain in translating these frameworks into climate-just and inclusive practices. Marine conservation initiatives, blue economy strategies, and coastal development programs have contributed to strengthening ocean management but may generate inequalities when local communities are excluded from decision-making or when customary marine governance systems are insufficiently recognized. A justice-oriented ocean governance approach requires

strengthening community participation, recognizing local ecological knowledge, integrating climate adaptation into marine policies, and ensuring equitable distribution of benefits derived from ocean resources. In this context, coastal communities should be understood not merely as vulnerable groups requiring protection but as essential governance actors with knowledge, experience, and capacities to contribute to marine sustainability.

This research contributes to broader debates on climate justice, ocean governance, and sustainable development by demonstrating that the protection of marine ecosystems cannot be separated from the protection of the people who depend on them. Indonesia's small islands provide important lessons for global discussions on equitable ocean governance, particularly regarding the need to balance conservation objectives, economic development, and social justice. Future marine governance strategies should move toward more adaptive, participatory, and legally inclusive models that recognize the interconnected relationship between ecological resilience and community well-being. By embedding climate justice principles into ocean governance, Indonesia can strengthen not only the protection of its marine ecosystems but also the resilience and dignity of coastal communities facing an increasingly uncertain climate future.

References

Allison, E. H., Perry, A. L., Badjeck, M. C., Adger, W. N., Brown, K., Conway, D., Halls, A. S., Pilling, G. M., Reynolds, J. D., Andrew, N. L., & Dulvy, N. K. (2009). Vulnerability of national economies to the impacts of climate change on fisheries. *Fish and Fisheries, 10*(2), 173–196. https://doi.org/10.1111/j.1467-2979.2008.00310.x

Armitage, D., de Loë, R., & Plummer, R. (2012). Environmental governance and its implications for conservation practice. *Conservation Letters, 5*(4), 245–255. https://doi.org/10.1111/j.1755-263X.2012.00238.x

Barnett, J., & Campbell, J. (2010). *Climate change and small island states: Power, knowledge and the South Pacific*. Earthscan.

Bennett, N. J., Blythe, J., White, C. S., & Campero, C. (2021). Blue growth and blue justice: Ten risks and solutions for the ocean economy. *Marine Policy, 125*, 104387. https://doi.org/10.1016/j.marpol.2020.104387

Bennett, N. J., Kadfak, A., & Dearden, P. (2019). Community-based marine resource management in a changing climate. *Marine Policy, 103*, 23–30. https://doi.org/10.1016/j.marpol.2019.01.011

Bennett, N. J., Teh, L. S. L., Ota, Y., Christie, P., Ayers, A., Day, J. C., Franks, P., Gill, D., Gruby, R., Kittinger, J. N., Koehn, J. Z., Lewis, N., Parks, J., Vierros, M., Whitcraft, C., & Wilhelm, A. (2018). An appeal for a code of conduct for

marine conservation. *Marine Policy, 94*, 1–5. https://doi.org/10.1016/j.marpol.2018.05.026

Berkes, F. (2018). *Sacred ecology* (4th ed.). Routledge.

Blythe, J., Silver, J., Evans, L., Armitage, D., Bennett, N. J., Moore, M. L., Morrison, T. H., & Brown, K. (2018). The dark side of transformation: Latent risks in contemporary sustainability discourse. *Antipode, 50*(5), 1206–1223.

Campbell, L. M., & Gray, N. J. (2019). The blue economy and marine conservation: New opportunities or old challenges? *Marine Policy, 102*, 1–5.

Cinner, J. E., Adger, W. N., Allison, E. H., Barnes, M. L., Brown, K., Cohen, P. J., Gelcich, S., Hicks, C. C., Hughes, T. P., Lau, J., Marshall, N. A., & Morrison, T. H. (2018). Building adaptive capacity to climate change in tropical coastal communities. *Nature Climate Change, 8*, 117–123. https://doi.org/10.1038/s41558-017-0065-x

Cinner, J. E., Huchery, C., Darling, E. S., Humphries, A. T., Graham, N. A. J., Hicks, C. C., Marshall, N., & McClanahan, T. R. (2016). Bright spots among the world's coral reefs. *Nature, 535*, 416–419. https://doi.org/10.1038/nature18607

Cinner, J. E., Lau, J. D., Bauman, A. G., Feary, D. A., Januchowski-Hartley, F. A., Rojas, C. A., Barnes, M. L., & Graham, N. A. J. (2020). Sixteen years of social and ecological dynamics reveal challenges and opportunities for adaptive management. *Global Environmental Change, 62*, 102049.

Daw, T. M., Adger, W. N., Brown, K., & Badjeck, M. C. (2009). Climate change and capture fisheries: Potential impacts, adaptation and mitigation. *Climate Change and Fisheries, 7*, 107–150.

Fabinyi, M., Dressler, W., & Pido, M. (2022). Fisheries and the politics of conservation in Southeast Asia. *Marine Policy, 136*, 104935.

Fraser, N. (2009). *Scales of justice: Reimagining political space in a globalizing world*. Columbia University Press.

Gjerde, K. M., Clark, N. A., & Chayes, L. (2016). Towards a global oceans governance framework. *Marine Policy, 69*, 1–7.

Glaser, M., Baird, T. D., & Walters, B. B. (2010). Social-ecological systems and coastal resource management. *Ocean & Coastal Management, 53*(9), 469–478.

Harkes, I., & Novaczek, I. (2002). Institutional resilience in traditional fisheries management systems. *Ocean & Coastal Management, 45*(7), 367–384.

Hoegh-Guldberg, O., Jacob, D., Taylor, M., Guillén Bolaños, T., Bindi, M., Brown, S., Camilloni, I., Diedhiou, A., Djalante, R., Ebi, K., Engelbrecht, F., Guiot, J., Hijioka, Y., Mehrotra, S., Payne, A., Seneviratne, S., Thomas, A., Warren, R., & Zhou, G. (2019). The human imperative of stabilizing global climate change at 1.5°C. *Science, 365*(6459), eaaw6974.

Jentoft, S., Chuenpagdee, R., Bundy, A., & Mahon, R. (2010). Pyramids and roses: Alternative images for the governance of fisheries systems. *Marine Policy, 34*(6), 1315–1321.

Jones, P. J. S., Murray, D., & Gray, T. (2018). Ecological and social outcomes of marine protected areas. *Ocean & Coastal Management, 157*, 1–10.

Jupiter, S. D., Cohen, P. J., Weeks, R., Tawake, A., & Govan, H. (2017). Locally-managed marine areas: Multiple objectives and diverse strategies. *Pacific Conservation Biology, 23*(2), 165–177.

Kelman, I. (2018). Islandness within climate change narratives of small island developing states. *Island Studies Journal, 13*(1), 149–166.

Kittinger, J. N., Finkbeiner, E. M., Glazier, E. W., & Crowder, L. B. (2012). Human dimensions of coral reef social-ecological systems. *Ecology and Society, 17*(4), 17.

Lester, S. E., Costello, C., Halpern, B. S., Gaines, S. D., White, C., & Barth, J. A. (2013). Evaluating tradeoffs among ecosystem services to inform marine spatial planning. *Marine Policy, 38*, 80–89.

McLeod, E., Moffitt, R., Timmermann, A., Salm, R., Mahanes, R., & Salm, K. (2009). Warming seas in the Coral Triangle: Impacts on marine ecosystems and communities. *Regional Environmental Change, 9*, 215–224.

Muawanah, U., Pomeroy, R., & Marlessy, C. (2018). Revisiting fisheries governance in Indonesia. *Marine Policy, 91*, 65–73.

Novaczek, I., Harkes, I., Sopacua, J., & Tatuhey, M. (2011). An institutional analysis of sasi laut in Maluku. *Ocean & Coastal Management, 54*(5), 345–352.

Nurse, L. A., McLean, R. F., Agard, J., Briguglio, L., Duvat, V., Pelesikoti, N., Tompkins, E., & Webb, A. (2014). Small islands. In *Climate Change 2014: Impacts, Adaptation, and Vulnerability*. Cambridge University Press.

Pomeroy, R., Arango, C., Lomboy, C. G., & Box, S. (2019). Fish wars: Conflicts and management in small-scale fisheries. *Marine Policy, 100*, 123–130.

Robinson, S. A., & Shine, T. (2018). Achieving climate justice through climate action. *Georgetown Environmental Law Review, 31*, 1–22.

Schlosberg, D. (2013). Theorising environmental justice: The expanding sphere of a discourse. *Environmental Politics, 22*(1), 37–55.

Schlosberg, D., & Collins, L. B. (2014). From environmental to climate justice. *Wiley Interdisciplinary Reviews: Climate Change, 5*(3), 359–374.

Silver, J. J., Gray, N. J., Campbell, L. M., Fairbanks, L. W., & Gruby, R. L. (2015). Blue economy and competing discourses. *Journal of Environment & Development, 24*(2), 135–160.

Siry, H. Y. (2011). Governance and management of coastal resources in Indonesia. *Ocean & Coastal Management, 54*(3), 239–248.

Stacey, N., Karam, J., Jackson, M., Kennard, S., & Pannell, D. (2013). Rights and responsibilities in marine conservation. *Marine Policy, 39*, 1–8.

Sultana, F. (2022). Critical climate justice. *The Geographical Journal, 188*(1), 118–124.

Tengö, M., Hill, R., Malmer, P., Raymond, C. M., Spierenburg, M., Danielsen, F., Elmqvist, T., & Folke, C. (2017). Weaving knowledge systems in IPBES. *Current Opinion in Environmental Sustainability, 26–27*, 17–25.

Thomas, A., Baptiste, A., Martyr-Koller, R., Pringle, P., & Rhiney, K. (2020). Climate change and small island developing states. *Annual Review of Environment and Resources, 45*, 1–27.

United Nations. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*.

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