Policy Research Journal
ISSN (E): 3006-7030 ISSN (P) : 3006-7022 Volume 4, Issue 2, 2026

MARITIME GOVERNANCE IN THE 21ST CENTURY: LEGAL AND POLICY CHALLENGES IN 2025-26

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DOI: https://doi.org/10.5281/zenodo.18738869

Keywords
Governance, Maritime, International Relations, Policy, State.

Article History
Received: 02 February 2026
Accepted: 18 February 2026
Published: 21 February 2026

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Abstract
Maritime governance has become a critical component of international relations, reflecting the intersection of law, security, and economic strategy in the 21st century. With increasing competition over strategic sea lanes, territorial waters, and the blue economy, states face complex legal and policy challenges that demand effective governance frameworks. The study addresses these contemporary issues, focusing on the evolving dynamics of maritime law, state responsibility, and regional cooperation in 2025-26. The purpose of this research is to examine how legal frameworks, including international conventions and national maritime laws, shape governance and strategic decision-making, while assessing the challenges posed by emerging security threats, climate change, and technological developments. The study aims to identify gaps in current governance mechanisms and offer insights for policy improvement. A qualitative case study examines key maritime regions and chokepoints, analyzing treaties, national laws, policies, and organizational reports to evaluate governance frameworks and legal responses. The findings highlight that while international law provides a foundation for maritime governance, inconsistencies in national implementation, emerging security threats, and overlapping jurisdictions limit effectiveness. Effective governance requires enhanced cooperation, updated legal frameworks, and adaptive policies capable of responding to technological and environmental challenges. The study underscores the importance of integrating law, policy, and strategic foresight to ensure secure, sustainable, and cooperative maritime governance in the contemporary era.

Introduction

Maritime governance has become a central issue in international relations, reflecting the complex interplay between law, security, economic development, and environmental sustainability. Oceans are no longer merely spaces of navigation and trade; they are strategic assets whose control and management carry significant geopolitical, economic, and ecological implications. Strategic competition over maritime spaces has intensified, particularly in regions such as the South China Sea, the Strait of Hormuz, and the Bab el-Mandeb Strait, which serve as critical corridors for global commerce, energy transportation, and military operations (United Nations Convention on the Law of the Sea. These maritime regions are vital for ensuring the continuity of international shipping routes, access to fisheries, and exploration of offshore energy resources, underscoring the importance of effective governance. The legal architecture of maritime governance is anchored primarily in UNCLOS, which codifies state rights and obligations concerning territorial seas, exclusive economic zones (EEZs), continental shelves, and high seas governance. UNCLOS also establishes

mechanisms for dispute resolution and resource management, providing a comprehensive framework for regulating human activity at sea. However, the complexity of maritime law is compounded by overlapping claims, differing national interpretations, and the evolving norms of customary international law. While UNCLOS offers clarity in principle, practical enforcement often depends on political will, institutional capacity, and international cooperation, leaving gaps that can exacerbate disputes and hinder compliance.

At the same time, the expansion of the blue economy, the sustainable utilization of ocean resources for economic growth, livelihoods, and employment, has added new dimensions to maritime governance. Activities such as offshore energy development, deep-sea mining, aquaculture, and maritime technology innovation present significant economic opportunities but also raise environmental and regulatory challenges. The sustainable development of these sectors requires robust legal frameworks and governance mechanisms capable of balancing economic growth with the protection of marine ecosystems (United Nations Conference on Trade and Development (UNCTAD, 2022). International organizations play a pivotal role in supporting maritime governance. The International Maritime Organization (IMO) establishes technical standards for shipping safety, maritime security, and environmental protection, while UNCTAD provides guidance on trade facilitation, shipping economics, and capacity-building in developing countries (IMO, 2022). Together with UNCLOS, these institutions create the normative and operational scaffolding for contemporary maritime governance, enabling states and regional organizations to manage complex maritime spaces effectively.

Despite the existence of a comprehensive legal framework, maritime governance faces persistent challenges. Strategic competition over maritime territories continues to intensify, with overlapping claims creating potential flashpoints for conflict. Enforcement of international norms remains uneven, reflecting disparities in national capacity and political priorities. Environmental pressures, including climate change, coastal erosion, and the loss of marine biodiversity, further stress governance mechanisms, creating uncertainty over maritime boundaries and resource entitlements. Additionally, technological advancements, such as autonomous shipping and deep-sea resource extraction, introduce regulatory gaps and raise questions about liability, safety, and environmental protection. Collectively, these factors highlight the inadequacy of traditional maritime governance structures to address the evolving threats and opportunities of the 21st century.

This study is significant because it offers a contemporary analysis of maritime governance at the intersection of law, security, and policy. By examining strategic maritime regions, emerging legal and technological challenges, and regional institutional responses, the study identifies critical gaps in governance frameworks and provides practical recommendations for reform. It contributes to the broader discourse on international law, regional cooperation, and sustainable ocean management by highlighting the need for integrated approaches that address legal, economic, and environmental considerations simultaneously. The research outcomes are relevant for policymakers, legal practitioners, regional organizations, and international institutions seeking to enhance the effectiveness, resilience, and sustainability of maritime governance in an era of rapid geopolitical, technological, and environmental change.

Literature Review

Modern maritime governance scholars are rooted in the post–World War II transformation of the law of the sea. Early doctrinal debates focused on the tension between the traditional freedom of the seas principle and expanding coastal state jurisdiction. The adoption of the United Nations Convention on the Law of the Sea (UNCLOS) marked a watershed moment, widely described as the "constitution for the oceans." It consolidated customary rules and introduced comprehensive maritime zones, including the territorial sea, exclusive economic zone (EEZ), continental shelf regime, and high seas governance. Churchill and

Lowe (1999) provided one of the foundational doctrinal analyses of the law of the sea, examining how UNCLOS codified and progressively developed international law. Their work emphasized the balance between navigational freedoms and coastal state rights, setting the stage for later governance debates. Similarly, Tanaka (2019) conceptualized ocean governance as an integrated legal order, highlighting dispute settlement mechanisms and environmental obligations embedded within UNCLOS. Over time, scholars evolved beyond doctrinal interpretation toward governance-oriented analysis. Rather than viewing maritime law solely as a static legal framework, scholars began assessing implementation, compliance, and institutional effectiveness. This shift reflects broader trends in international relations theory, particularly regime theory and liberal institutionalism, which examine how international institutions shape state behavior. The law of the sea regime is increasingly analyzed not only as a legal instrument but also as a dynamic governance system influenced by geopolitical, environmental, and economic pressures. Contemporary scholars recognize that maritime governance operates within a complex matrix of global institutions, including the International Maritime Organization (IMO) and the International Tribunal for the Law of the Sea (ITLOS). These institutions contribute to rule development, interpretation, and enforcement, yet debates persist regarding their capacity to address emerging challenges. Thus, the evolution of maritime governance scholars reflects a transition from codification and jurisdictional analysis to broader considerations of compliance, sustainability, and strategic competition.

Maritime governance is deeply intertwined with geopolitical rivalry. Realist scholars emphasize sea power as a determinant of global influence, arguing that control of maritime chokepoints and sea lines of communication remains central to national security. Till (2018) highlights the continuing relevance of naval strategy in shaping global order, noting that maritime dominance affects trade security, energy flows, and deterrence dynamics. Recent literature has increasingly focused on contested maritime spaces such as the South China Sea, where overlapping territorial claims and freedom of navigation operations illustrate tensions between legal norms and power politics. Scholars debate whether UNCLOS effectively constrains great power behavior or whether strategic interests undermine compliance. The 2016 arbitration award issued under UNCLOS mechanisms demonstrated the potential of legal dispute settlement; however, limited enforcement underscores structural weaknesses in the regime. Beyond traditional naval rivalry, maritime security scholars now address "grey-zone" operations, hybrid warfare, and non-state actors. Piracy in strategic waterways and maritime terrorism have prompted renewed examination of flag state responsibility and port state control. The literature suggests that while legal frameworks exist, enforcement gaps and fragmented jurisdiction complicate effective governance. Importantly, geopolitical competition increasingly intersects with economic strategy. Infrastructure development initiatives, maritime militias, and strategic port investments blur the lines between commercial expansion and security projection. Consequently, maritime governance is no longer solely about law and navigation; it is embedded within broader strategic rivalries shaping international order in 2025–26.

The concept of the blue economy has become central to contemporary maritime governance discourse. It emphasizes sustainable use of ocean resources for economic growth, improved livelihoods, and environmental protection. Bennett et al. (2019) critically examined "blue growth" narratives, arguing that economic expansion often risks marginalizing coastal communities and exacerbating environmental degradation if governance frameworks are weak. International organizations such as the United Nations Conference on Trade and Development have promoted maritime trade and ocean-based industries as drivers of global development. However, scholars caution that regulatory regimes often lag behind economic ambitions. Fisheries depletion, marine pollution, and biodiversity loss reveal tensions between exploitation and sustainability. Deep seabed mining represents one

of the most controversial dimensions of blue economy governance. The International Seabed Authority (ISA), mandated under UNCLOS to regulate mineral activities in the Area, faces criticism regarding transparency, environmental safeguards, and equitable benefit-sharing. Academic debate centers on whether existing regulatory frameworks sufficiently protect marine ecosystems or prioritize economic interests. The sustainability discourse also intersects with social justice concerns. Blue economy strategies may disproportionately benefit developed maritime powers, leaving small island developing states vulnerable to environmental harm and economic dependency. Thus, literature increasingly calls for inclusive governance mechanisms that integrate environmental stewardship with equitable economic development.

Climate change introduces unprecedented legal uncertainty into maritime governance. Rising sea levels threaten to alter coastal baselines, potentially affecting the measurement of maritime zones under UNCLOS. Rayfuse (2010) explored the implications of disappearing coastlines for statehood and maritime entitlements, arguing that traditional interpretations of baselines may prove destabilizing in the context of climate-induced geographic transformation. Recent assessments by the Intergovernmental Panel on Climate Change confirm accelerating sea-level rise and increasing ocean temperatures, intensifying concerns about boundary stability. Scholars debate whether maritime boundaries should remain fixed to preserve legal certainty or shift dynamically with changing coastlines. Fixed-baseline approaches aim to maintain stability and protect vulnerable states, whereas ambulatory baselines reflect a strict textual interpretation of UNCLOS provisions. Additionally, climate change affects navigational routes and resource accessibility. Melting Arctic ice has opened new shipping corridors and intensified continental shelf claims in the Arctic region. These developments challenge existing governance mechanisms and heighten competition over maritime resources. The literature underscores that climate change is not merely an environmental issue but a structural challenge to the foundations of maritime legal order.

Technological advancements pose emerging governance challenges inadequately addressed in existing legal frameworks. Autonomous vessels, maritime cyber-attack threats, and digital navigation systems raise questions about liability, safety standards, and jurisdiction. While the International Maritime Organization has initiated regulatory discussions on Maritime Autonomous Surface Ships (MASS), scholars argue that UNCLOS lacks explicit provisions addressing such technologies. Technological innovation also transforms maritime domain awareness through satellite surveillance, artificial intelligence, and data analytics. These developments enhance enforcement capacity but also create new vulnerabilities, particularly in the form of cyber-attacks on port infrastructure and shipping networks. Existing conventions primarily address physical threats, leaving digital risks unregulated. The literature identifies a regulatory lag between technological innovation and international legal adaptation. Without updated norms, inconsistencies in national implementation may undermine maritime safety and security. Scholars therefore advocate for proactive legal reform and harmonized standards to address emerging technological realities.

Gaps Analysis

Despite several gaps remaining. First, much literature examines maritime governance through isolated lenses of security, environmental law, or economic policy without integrating these dimensions into a holistic framework. Second, enforcement mechanisms under UNCLOS and related conventions receive insufficient empirical assessment, particularly regarding compliance by major powers. Third, technological and cyber-attacks challenges remain under-theorized within traditional law of the sea scholarship. Moreover, relatively limited research systematically compares regional institutional responses to emerging challenges. As maritime governance becomes increasingly complex in 2025–26, there is a pressing need for interdisciplinary analysis that bridges legal doctrine, geopolitical strategy, and

sustainability concerns. This study seeks to address these gaps by integrating legal analysis, policy evaluation, and comparative case studies to assess the evolving effectiveness of maritime governance frameworks in the contemporary era.

Theoretically Framework

A theoretical and legal framework provides the conceptual foundation for analyzing maritime governance in the twenty-first century. The theoretical framework explains how states behave, cooperate, and compete in maritime spaces, while the legal framework outlines the formal rules, institutions, and obligations that regulate state conduct at sea. Together, these frameworks enable a comprehensive understanding of how international law interacts with power politics, institutional cooperation, and evolving global challenges. In the context of maritime governance in 2025–26, the theoretical lens clarifies why states comply with or challenge legal norms, while the legal architecture demonstrates how those norms are codified and implemented. This section first defines the principal international relations theories relevant to maritime governance and then examines the legal regime that structures state conduct in maritime domains.

Liberal institutionalism argues that international cooperation is possible even in an anarchic international system because institutions reduce uncertainty, facilitate communication, and create expectations of reciprocal behavior. According to Keohane (1984), institutions help states achieve mutual gains by lowering transaction costs, increasing transparency, and promoting rule-based interaction. Rather than relying solely on power, states use institutions to coordinate policies and manage interdependence. Applied to maritime governance, liberal institutionalism explains the creation and durability of multilateral frameworks such as the United Nations Convention on the Law of the Sea (UNCLOS). Maritime spaces are inherently interconnected; sea lanes, fisheries, and environmental systems transcend national boundaries. Institutions such as the International Maritime Organization (IMO) and the International Tribunal for the Law of the Sea (ITLOS) facilitate cooperation by establishing shared standards for safety, environmental protection, and dispute resolution. From this perspective, maritime governance is evidence that states recognize mutual dependence in ocean affairs. Even rival powers benefit from stable shipping routes, predictable maritime boundaries, and regulated resource exploitation. Liberal institutionalism, therefore, helps explain why most states continue to operate within the UNCLOS framework despite geopolitical tensions.

Realism presents a contrasting view of international politics. It assumes that the international system is anarchic, states are the primary actors, and survival is their foremost objective. Power—particularly military capability is central to state behavior. Mearsheimer (2001), representing offensive realism, argues that great powers seek regional hegemony and maximize their relative power to ensure security. Within maritime governance, realism highlights the strategic importance of sea control, naval power, and maritime chokepoints. Oceans are not merely legal spaces but arenas of geopolitical competition. Disputes in regions such as the South China Sea illustrate how states may prioritize strategic interests over legal rulings. Freedom of navigation operations, naval deployments, and militarization of contested features reflect realist dynamics where power politics can override institutional constraints. Realism, therefore, questions the effectiveness of international maritime law when major powers perceive core security interests to be at stake. It helps explain instances of selective compliance with UNCLOS provisions and the limited enforcement capacity of international tribunals.

Regime theory bridges elements of realism and liberal institutionalism. It focuses on the role of international regimes defined as sets of principles, norms, rules, and decision-making procedures around which actor expectations converge in a given issue area. Regimes do not eliminate power politics but structure interactions within specific domains. The law of the sea constitutes a classic example of an international regime. It provides detailed rules governing maritime zones, navigation rights, environmental obligations, and

resource management. Regime theory emphasizes that even powerful states often operate within these established norms because regimes reduce uncertainty and provide predictability. In maritime governance, regime theory helps explain the persistence of UNCLOS as a comprehensive framework despite geopolitical rivalry. It also highlights how sub-regimes such as marine environmental protection, fisheries management, and seabed mining interact within the broader ocean governance architecture.

Together, these theoretical approaches provide a multidimensional understanding of maritime governance. Liberal institutionalism explains cooperation and institutional development; realism accounts for strategic rivalry and enforcement limitations; and regime theory clarifies how structured norms shape expectations and behavior. Maritime governance in 2025–26 reflects the interaction of all three dynamics: institutional cooperation, geopolitical competition, and rule-based regimes coexisting within a complex global system.

Legal Architecture of Maritime Governance

1. The UNCLOS Regime

The legal foundation of contemporary maritime governance is the United Nations Convention on the Law of the Sea. Adopted in 1982 and entering into force in 1994, UNCLOS codifies customary international law and establishes a comprehensive framework governing maritime zones and activities.

UNCLOS defines:

- The territorial sea,
- The contiguous zone,
- The exclusive economic zone (EEZ),
- The continental shelf regime, and
- The legal status of the high seas.

It balances coastal state sovereignty with navigational freedoms and introduces obligations for environmental protection and marine scientific research. Importantly, UNCLOS establishes dispute settlement mechanisms to ensure legal predictability. The Convention is often described as the "constitution for the oceans" because it integrates economic rights, security interests, and environmental responsibilities within a unified framework. However, contemporary challenges, including climate change, seabed mining, and autonomous shipping, test its adaptability.

2. Institutional Roles in Maritime Governance

The UNCLOS regime is supported by specialized institutions that interpret and implement its provisions. Among the most significant is the International Tribunal for the Law of the Sea (ITLOS), established to adjudicate disputes concerning the interpretation and application of the Convention. ITLOS contributes to legal clarity through advisory opinions and binding judgments. Other institutional actors include the IMO, which develops technical standards for maritime safety and pollution prevention, and the International Seabed Authority (ISA), responsible for regulating mineral activities in the deep seabed beyond national jurisdiction. These institutions operationalize the legal framework by translating treaty principles into regulatory practice.

Institutional roles are critical in ensuring compliance, monitoring state behavior, and adapting governance mechanisms to emerging challenges. However, their authority ultimately depends on state consent and cooperation.

3. State Responsibility and Jurisdiction

A central component of maritime governance is the doctrine of state responsibility. Under international law, states are responsible for ensuring that activities under their jurisdiction or control comply with treaty obligations. In maritime contexts, this principle manifests in three primary forms of jurisdiction:

- **Flag state jurisdiction**, whereby a state exercises authority over vessels flying its flag.
- **Coastal state jurisdiction**, involving sovereign rights within territorial seas and EEZs.
- **Port state control** allows states to inspect foreign vessels in their ports to ensure compliance with international standards.

These jurisdictional layers aim to prevent regulatory gaps. However, challenges arise when flag states fail to enforce standards or when overlapping claims generate disputes. The effectiveness of maritime governance, therefore,

depends not only on legal codification but also on consistent implementation and enforcement.

The theoretical and legal framework demonstrates that maritime governance operates at the intersection of power politics, institutional cooperation, and legal regulation. Liberal institutionalism explains the development of cooperative regimes; realism highlights strategic competition; and regime theory illustrates how norms structure expectations. Legally, UNCLOS provides the foundation of ocean governance, supported by institutions such as ITLOS and the ISA. Yet the effectiveness of this architecture ultimately depends on state responsibility, compliance, and adaptability to emerging challenges. In 2025–26, maritime governance reflects both the resilience of international legal regimes and the enduring influence of geopolitical rivalry.

Research Methodology

This study adopts a qualitative research design grounded in doctrinal legal analysis and comparative case study methodology to examine maritime governance in 2025–26. Qualitative methods are appropriate because maritime governance involves legal interpretation, institutional evaluation, and geopolitical analysis that cannot be adequately measured through quantitative techniques. The research integrates normative legal analysis, policy analysis, comparative regional case studies, and institutional review. Doctrinal legal analysis focuses on examining treaties, interpreting customary international law, and reviewing dispute settlement decisions, particularly those under the United Nations Convention on the Law of the Sea, as well as decisions from the Permanent Court of Arbitration and judgments of the International Tribunal for the Law of the Sea. The comparative case study method analyzes strategically significant regions—the South China Sea, Strait of Hormuz, Arctic Ocean, and Bab el-Mandeb selected based on strategic importance, active legal disputes, environmental vulnerability, and geopolitical relevance. Data are collected from primary sources, including international treaties, arbitration awards, national legislation, and official reports from the International Maritime Organization, International Seabed Authority, and Intergovernmental Panel on Climate Change, as well as secondary scholarly literature. The analysis employs thematic evaluation, Vienna Convention principles of treaty interpretation, cross-case comparison, and policy gap assessment, focusing on compliance gaps, institutional capacity, and enforcement mechanisms, and emerging regulatory needs. Validity is ensured through triangulation and reliance on authoritative sources, while limitations include reliance on publicly available data and evolving geopolitical conditions. Ethical standards are maintained through proper APA 7 citation and exclusive use of public materials.

Strategic Maritime Regions and Case Studies

Strategic maritime regions play a central role in shaping contemporary maritime governance. These regions illustrate how legal norms, institutional mechanisms, and geopolitical competition intersect in practice. By examining the South China Sea, the Strait of Hormuz, Arctic governance, and the Red Sea–Bab el-Mandeb corridor, this section evaluates how international law operates under conditions of strategic rivalry, environmental change, and security volatility.

A. South China Sea

The South China Sea represents one of the most contested maritime regions in the world. It is strategically significant due to its vast shipping lanes, abundant fisheries, and potential hydrocarbon reserves. Multiple coastal states, including China, the Philippines, Vietnam, Malaysia, and Brunei, assert overlapping claims over islands, reefs, and maritime zones. The disputes center primarily on sovereignty over maritime features and the legal entitlements they generate under the United Nations Convention on the Law of the Sea. A major legal development occurred in 2016 when the Permanent Court of Arbitration issued its award in the case initiated by the Philippines against China. The Tribunal concluded that China's "nine-dash line" claim had no legal basis under UNCLOS and clarified the status of certain maritime features (Permanent

Court of Arbitration (PCA, 2016). The ruling reaffirmed the Convention's provisions on exclusive economic zones and clarified that certain contested features did not qualify as islands capable of generating full maritime entitlements. Despite its legal significance, the ruling exposed enforcement limitations within the law of the sea regime. China rejected the award, illustrating the tension between legal norms and geopolitical power. From a realist perspective, the case demonstrates the limits of legal adjudication when major powers perceive core strategic interests at stake. However, from a regime theory perspective, the award contributed to clarifying legal standards and strengthening normative expectations within the international community. The South China Sea case thus reflects the broader challenge of maritime governance: while UNCLOS provides a structured legal framework, compliance depends heavily on political will and diplomatic engagement. The region remains a focal point for freedom of navigation operations and regional diplomatic initiatives, underscoring the continuing interaction between law and strategy.

B. Strait of Hormuz

The Strait of Hormuz is one of the most critical maritime chokepoints in the global energy system. Connecting the Persian Gulf to the Gulf of Oman and the Arabian Sea, it facilitates the transit of a significant proportion of the world's oil exports. The strategic importance of this narrow passage makes it highly sensitive to geopolitical tensions, particularly between Iran and Western powers. Under UNCLOS, straits used for international navigation are subject to the regime of transit passage, which guarantees the continuous and expeditious movement of vessels and aircraft. However, tensions in the region have periodically raised concerns about the security of navigation. Incidents involving the seizure or harassment of commercial vessels highlight vulnerabilities in maritime governance when geopolitical confrontation escalates. The Strait of Hormuz demonstrates the importance of balancing coastal state security concerns with the international community's interest in uninterrupted navigation. While legal provisions provide a clear framework for transit rights, enforcement depends on naval presence, diplomatic engagement, and confidence-building measures. This case illustrates how legal regimes function within a broader security environment shaped by deterrence, regional alliances, and power projection.

C. Arctic Governance

The Arctic Ocean has emerged as a region of growing strategic and environmental significance. Climate change has accelerated ice melt, opening new maritime routes such as the Northern Sea Route and increasing accessibility to hydrocarbon and mineral resources. These developments have intensified interest among Arctic coastal states, including Russia, Canada, Norway, Denmark (via Greenland), and the United States. Arctic governance operates within the UNCLOS framework, particularly regarding continental shelf claims and exclusive economic zones. Coastal states have submitted claims to extend their continental shelves beyond 200 nautical miles, relying on scientific evidence to support their submissions. While UNCLOS provides procedures for such claims, geopolitical rivalry has heightened concerns about militarization and strategic competition in the region. Institutionally, the Arctic Council plays a central role in regional cooperation. Established in 1996, it facilitates dialogue on environmental protection, sustainable development, and scientific collaboration. Although the Council does not address military security, it has been instrumental in fostering cooperation among Arctic states. However, recent geopolitical tensions have tested the resilience of Arctic cooperation mechanisms. The Arctic case underscores how environmental transformation interacts with legal and strategic considerations. Climate change not only alters physical geography but also reshapes governance priorities. The region demonstrates the adaptability of UNCLOS procedures but also highlights the need for sustained institutional dialogue to prevent conflict escalation.

D. Red Sea and Bab el-Mandeb

The Red Sea and the Bab el-Mandeb form a vital maritime corridor linking the Mediterranean Sea,

via the Suez Canal, to the Indian Ocean. This route carries substantial volumes of global trade, making it strategically indispensable. However, the region has been affected by political instability, armed conflict, and maritime security threats. The Bab el-Mandeb Strait is subject to the transit passage regime under UNCLOS, ensuring freedom of navigation for international shipping. Nonetheless, non-state actors and regional conflicts have threatened commercial vessels, raising concerns about maritime terrorism and supply chain disruption. These developments illustrate how maritime governance must address not only interstate disputes but also asymmetric threats. Regional and international naval coalitions have been deployed to safeguard shipping lanes, reflecting a cooperative security approach consistent with liberal institutionalism principles. However, sustained instability in surrounding states complicates long-term governance solutions. The Red Sea corridor demonstrates that maritime governance requires integration of legal norms, security operations, and regional diplomacy.

The examination of these four strategic maritime regions reveals recurring patterns in contemporary maritime governance. First, UNCLOS provides a comprehensive legal framework applicable across diverse geopolitical contexts. Second, enforcement challenges persist when legal rulings conflict with strategic interests. Third, environmental change and non-traditional security threats increasingly shape maritime policy decisions. Collectively, these case studies demonstrate that maritime governance in 2025–26 is characterized by both legal continuity and strategic uncertainty. While international law offers mechanisms for dispute resolution and cooperation, its effectiveness ultimately depends on state compliance, institutional resilience, and adaptive policy responses.

Emerging Legal and Policy Challenges

The contemporary maritime environment faces a growing array of legal and policy challenges that complicate governance frameworks established under the United Nations Convention on the Law of the Sea (UNCLOS). These challenges arise from evolving security threats, environmental pressures, technological advancements, and economic exploitation of ocean resources. While UNCLOS and related institutions provide a robust legal foundation, the rapid pace of change in the 21st century has exposed gaps and ambiguities, necessitating adaptive governance approaches.

A. Maritime Security Threats

Maritime security remains a central concern for states, international organizations, and commercial actors. Traditional security threats, such as interstate conflict over territorial waters and strategic sea lanes, persist alongside non-traditional challenges including piracy, terrorism, and illicit trafficking. Regions such as the Gulf of Aden, the Strait of Malacca, and the Red Sea remain particularly vulnerable due to a combination of strategic location and political instability. Non-state actors have increasingly exploited weak governance and enforcement gaps to threaten commercial shipping. Piracy off the Horn of Africa, maritime militias in the South China Sea, and terrorist attacks on critical infrastructure illustrate the limitations of existing legal frameworks in preventing or mitigating such threats. UNCLOS provides for flag state and port state responsibilities, but enforcement often depends on the political will, resources, and operational capacity of individual states. Consequently, maritime governance in 2025–26 must integrate legal provisions with multilateral security cooperation, intelligence sharing, and coordinated naval patrols to address complex threats.

B. Climate-Induced Legal Instability

Climate change presents a growing challenge to the legal stability of maritime boundaries. Rising sea levels, coastal erosion, and the disappearance of low-lying islands threaten to alter baselines used to determine territorial seas, exclusive economic zones, and continental shelves. Such environmental changes have profound implications for sovereignty, resource entitlements, and dispute resolution mechanisms under UNCLOS. Scholars emphasize that fixed

baselines may preserve legal certainty but could disadvantage states facing submergence of their coastlines. Conversely, adaptive approaches that recalibrate baselines to reflect environmental changes risk creating overlapping claims and heightened tensions. Furthermore, climate-driven migration, the loss of coastal infrastructure, and disruptions to fisheries and marine ecosystems introduce additional governance challenges. International law currently lacks comprehensive provisions to address these dynamic risks, necessitating policy innovation and regional cooperation to maintain maritime stability.

C. Deep Seabed Mining Governance

The exploitation of seabed mineral resources beyond national jurisdiction, commonly referred to as "the Area"—has emerged as a significant governance challenge. The International Seabed Authority (ISA), established under UNCLOS, is tasked with regulating deep seabed mining to ensure equitable resource sharing and environmental protection. Recent interest in polymetallic nodules, cobalt-rich crusts, and hydrothermal vent deposits reflects the growing economic and strategic importance of these resources. However, regulatory and environmental frameworks are still developing. Concerns include inadequate environmental impact assessments, potential harm to deep-sea ecosystems, and unclear benefit-sharing mechanisms between developed and developing states. Scholars argue that effective governance will require not only robust ISA regulations but also enhanced transparency, scientific collaboration, and adaptive monitoring to balance resource extraction with environmental sustainability.

D. Autonomous Shipping and Cybersecurity

Technological innovation, particularly the rise of autonomous shipping, presents both opportunities and regulatory gaps in maritime governance. Maritime Autonomous Surface Ships (MASS) promise efficiency, cost reduction, and safety improvements. However, existing legal frameworks, including UNCLOS and IMO conventions, lack specific provisions addressing the operation, liability, and accident response for unmanned vessels. Simultaneously, cybersecurity has emerged as a critical dimension of maritime governance. Increasing reliance on digital navigation, port management systems, and communication networks exposes maritime infrastructure to cyberattacks. These risks have the potential to disrupt global trade, compromise sensitive information, and threaten national security. Current international legal instruments provide limited guidance, highlighting the need for updated regulations, industry standards, and cooperative cybersecurity frameworks. The convergence of autonomous technology and digital vulnerability underscores the broader challenge of aligning maritime law with rapid technological change. Governance mechanisms must be proactive, integrating legal innovation, risk management, and multilateral coordination to maintain operational safety, legal clarity, and resilience against emerging threats.

Emerging legal and policy challenges in the maritime domain reflect the intersection of security, environmental, technological, and economic pressures. Maritime security threats, climate-induced legal instability, deep seabed mining, and autonomous shipping collectively reveal limitations in current governance structures. Addressing these challenges requires adaptive legal frameworks, enhanced institutional cooperation, and forward-looking policies that can respond to evolving risks. Effective maritime governance in 2025–26 will depend not only on the durability of UNCLOS but also on the ability of states and international organizations to innovate, enforce, and harmonize rules in a rapidly changing global ocean environment.

Regional and Institutional Responses

Maritime governance in the 21st century is shaped not only by international law but also by regional institutions and cooperative frameworks. While global treaties such as the United Nations Convention on the Law of the Sea (UNCLOS) establish the overarching legal architecture, regional organizations play a critical role in implementing, interpreting, and supplementing these norms. Regional and institutional responses are particularly relevant in addressing emerging

challenges, including maritime security threats, environmental change, technological innovation, and economic exploitation of maritime resources. This section examines the roles of the Association of Southeast Asian Nations (ASEAN), the European Union (EU), and the African Union (AU) in fostering maritime governance and regional cooperation.

A. Association of Southeast Asian Nations (ASEAN)

ASEAN plays a pivotal role in promoting regional stability and cooperation in Southeast Asian waters, particularly in the South China Sea. The organization facilitates dialogue among member states, promotes conflict prevention, and encourages adherence to international law. The 2002 ASEAN–China Declaration on the Conduct of Parties in the South China Sea exemplifies its role in establishing normative expectations for peaceful dispute resolution, resource management, and confidence-building measures. ASEAN operates on the principle of consensus, which enables inclusive decision-making but can also limit rapid action. Despite these constraints, the organization has advanced cooperative initiatives such as joint maritime patrols, capacity-building for coastal states, and information-sharing platforms to address piracy, smuggling, and other security threats. From a legal perspective, ASEAN complements UNCLOS by translating its broad principles into regional agreements, thereby fostering compliance and mitigating tensions. Moreover, ASEAN's institutional engagement reflects liberal institutionalism principles, demonstrating how regional regimes can reduce uncertainty and facilitate cooperation even among states with competing territorial claims. However, ASEAN's effectiveness is challenged by the asymmetry of power among members, external influence from major powers, and the evolving strategic assertiveness of non-member states in the region.

B. European Union (EU)

The European Union represents a highly institutionalized regional actor with substantial capacity to implement maritime governance policies. The EU's Integrated Maritime Policy provides a comprehensive framework addressing security, environmental protection, sustainable resource use, and technological innovation across member states' waters. Additionally, the EU has established the European Maritime Safety Agency (EMSA) and the European Fisheries Control Agency to ensure compliance with international and regional standards. The EU's governance model emphasizes regulatory harmonization, monitoring, and enforcement. By aligning national laws with regional directives, the Union ensures consistency in maritime safety, pollution control, and fisheries management. In the context of emerging challenges, the EU has invested in cybersecurity frameworks for port infrastructure, developed policies on autonomous shipping, and actively participated in climate adaptation strategies affecting European waters. Furthermore, the EU engages in international diplomacy to extend its governance model beyond regional borders. Through cooperation with organizations such as the IMO, the EU promotes capacity-building in developing states and supports multilateral dispute resolution mechanisms. The EU's approach demonstrates how robust institutional frameworks can operationalize legal norms, provide technical expertise, and integrate economic, security, and environmental objectives into a coherent regional strategy.

C. African Union (AU)

The African Union addresses maritime governance challenges across the continent's vast coastline and strategic waterways, including the Red Sea, the Gulf of Guinea, and the Bab el-Mandeb strait. Maritime security, piracy, illegal fishing, and environmental degradation are pressing concerns for many African states. The AU, in collaboration with sub-regional organizations such as the Economic Community of West African States (ECOWAS) and the Intergovernmental Authority on Development (IGAD), seeks to enhance regional coordination and institutional capacity. Key AU initiatives include the Yaoundé Code of Conduct, which focuses on combating piracy and armed robbery in the Gulf of Guinea, and broader strategies to

promote maritime surveillance, resource management, and legal harmonization. These measures aim to ensure that states comply with international law while developing collective security and sustainable management practices. The AU's role underscores the importance of regional solutions in contexts where national capabilities are limited. By pooling resources, sharing intelligence, and coordinating law enforcement, African states can mitigate threats that transcend borders. Nevertheless, challenges persist, including limited technical capacity, political instability, and the need for stronger integration between continental and sub-regional governance structures.

Linking Regional Responses to Global Governance

ASEAN, the EU, and the AU illustrate how regional and institutional actors complement the international legal framework of UNCLOS. Each organization translates global norms into actionable policies adapted to local conditions, providing mechanisms for dispute resolution, capacity-building, and cooperative security. These institutions also facilitate policy innovation in response to emerging challenges, including climate change, technological advancement, and deep-seabed resource management. Regional governance demonstrates the interaction between law, policy, and strategy. While international treaties provide the normative foundation, regional organizations operationalize these rules through monitoring, enforcement, and cooperative initiatives. However, effectiveness depends on institutional capacity, political cohesion, and alignment with broader geopolitical realities. In 2025–26, regional institutions remain indispensable for enhancing compliance, resolving disputes, and ensuring sustainable and secure use of maritime spaces.

Regional and institutional responses are essential complements to global maritime law. ASEAN provides mechanisms for dialogue and conflict prevention in Southeast Asia; the EU exemplifies institutionalized legal and regulatory integration; and the AU addresses security and governance challenges in Africa's maritime corridors. Collectively, these actors enhance the resilience, adaptability, and effectiveness of maritime governance frameworks. Their experiences highlight the critical role of regional institutions in bridging the gap between international law and local enforcement, ensuring that emerging challenges are addressed in a coordinated and sustainable manner.

Governance Gaps and Policy Recommendations

Despite the robust legal framework provided by the United Nations Convention on the Law of the Sea (UNCLOS) and the growing role of regional institutions, contemporary maritime governance continues to face critical gaps. These gaps limit the effectiveness of legal and policy frameworks in addressing evolving challenges such as maritime security threats, climate-induced instability, technological innovation, and the exploitation of ocean resources. Addressing these gaps requires targeted reforms, harmonization of legal norms, and the development of adaptive governance mechanisms that can respond to both current and emerging threats.

A. Reform of Enforcement Mechanisms

One of the most significant governance gaps is the limited enforcement capacity of existing legal regimes. While UNCLOS establishes the rights and obligations of states, enforcement depends on national implementation and cooperative monitoring. Cases such as the South China Sea arbitration illustrate the difficulty of enforcing international rulings when major powers reject tribunal decisions (Permanent Court of Arbitration, 2016). Policy reforms should focus on enhancing multilateral enforcement mechanisms. Strengthening the authority of institutions like the International Tribunal for the Law of the Sea (ITLOS) and improving coordination among flag states, port states, and regional security coalitions can ensure that violations are detected and addressed promptly. Additionally, integrating technological tools such as satellite monitoring and real-time vessel tracking can improve compliance verification and reduce enforcement gaps.

B. Harmonization of Maritime Laws

National variation in maritime legislation creates inconsistencies that undermine governance objectives. Differences in environmental regulations, resource management policies, and navigational standards complicate compliance and increase the potential for disputes. Harmonization of maritime laws across regions is therefore critical to promoting legal certainty and facilitating cooperation. International organizations and regional institutions can play a leading role in this process. For example, the European Union has successfully implemented standardized directives across member states, demonstrating that coordinated regulatory frameworks can improve compliance and operational efficiency (European Union, 2014). ASEAN and the African Union similarly provide platforms for aligning national policies with international norms. Developing model legal frameworks that integrate UNCLOS provisions with regional realities can reduce fragmentation and improve governance coherence.

C. Climate-Resilient Boundary Interpretation

Climate change poses a unique challenge to maritime governance, particularly regarding the stability of baselines used to define territorial seas, exclusive economic zones, and continental shelves. Rising sea levels threaten to submerge low-lying islands and erode coastlines, creating uncertainty over maritime entitlements (Rayfuse, 2010). Governance reforms should consider climate-resilient approaches to boundary interpretation. Fixed baseline methodologies may be adopted to preserve legal certainty and protect vulnerable states, while adaptive approaches could allow for adjustments in cases of significant environmental change. International legal guidance and regional agreements can help establish clear rules that balance stability, equity, and environmental realities, reducing the potential for conflict arising from climate-induced boundary shifts.

D. Maritime Cybersecurity Framework

The increasing reliance on digital navigation systems, port management software, and autonomous vessels has introduced vulnerabilities that are not fully addressed in current maritime law. Cybersecurity threats can disrupt commercial shipping, compromise sensitive information, and pose risks to national security (Bennett et al., 2019). Developing a comprehensive maritime cybersecurity framework is essential. Such a framework should include standardized protocols for digital vessel operation, risk assessment procedures, incident reporting mechanisms, and international cooperation to combat cyber-attacks. The International Maritime Organization (IMO) has begun to address these issues through guidelines for Maritime Autonomous Surface Ships (MASS) and cyber risk management, but more binding regulations and coordinated enforcement are needed to ensure operational resilience.

E. Institutional Reform for Seabed Mining

Deep seabed mining represents one of the most complex governance challenges in the contemporary maritime domain. The International Seabed Authority (ISA) is responsible for regulating activities in the Area, yet current institutional structures face criticism for insufficient transparency, weak environmental safeguards, and unclear benefit-sharing arrangements (Bennett et al., 2019). Institutional reform should focus on enhancing ISA's capacity to oversee sustainable resource exploitation. Reforms could include greater stakeholder participation, strengthened environmental monitoring, and the integration of scientific advisory mechanisms. Ensuring equitable distribution of benefits, particularly for developing states, will improve legitimacy and compliance. Additionally, harmonizing ISA regulations with national laws and regional agreements can reduce overlaps and conflicts, facilitating a more coherent governance framework.

Addressing governance gaps in maritime law and policy requires coordinated, multi-level reform. Strengthening enforcement mechanisms, harmonizing national legislation, adopting climate-resilient boundary interpretations, developing comprehensive cybersecurity standards, and reforming institutions for seabed mining are essential steps to ensure effective

governance in 2025–26. These measures must be implemented collaboratively by international organizations, regional institutions, and national governments to create a resilient, adaptive, and sustainable maritime governance system. By combining legal reform with technological innovation and institutional capacity-building, states can enhance compliance, reduce disputes, and safeguard the oceans for future generations.

Conclusion

Maritime governance in the 21st century has emerged as a critical intersection of law, security, economics, and environmental stewardship. This study examined the evolving legal and policy landscape of maritime governance in 2025–26, analyzing theoretical foundations, strategic maritime regions, emerging challenges, and institutional responses. The findings underscore that while international law, particularly the United Nations Convention on the Law of the Sea (UNCLOS), provides a robust normative framework, its effectiveness depends on state compliance, institutional capacity, and adaptive policy responses. The literature review revealed that maritime governance scholarship has evolved from focusing primarily on sovereignty and security to encompassing broader concerns such as environmental sustainability, economic exploitation, and technological innovation. Theoretical analysis demonstrated the relevance of liberal institutionalism, realism, and regime theory: institutions facilitate cooperation, power politics shape compliance behavior, and regimes structure expectations for state conduct. Case studies of strategic regions South China Sea, the Strait of Hormuz, the Arctic Ocean, and Bab el-Mandeb, highlighted the interplay of law, strategy, and institutional action. In the South China Sea, arbitration rulings clarified legal entitlements but revealed enforcement limitations (Permanent Court of Arbitration, 2016). The Strait of Hormuz demonstrated the importance of balancing transit rights with regional security concerns, while the Arctic highlighted the dual challenge of environmental change and strategic competition. The Red Sea and Bab el-Mandeb emphasized the vulnerability of critical maritime corridors to asymmetric threats and the need for cooperative security measures. Emerging challenges, including maritime security threats, climate-induced boundary instability, deep seabed mining, autonomous shipping, and cybersecurity, underscore the need for adaptive governance mechanisms. Regional and institutional responses from ASEAN, the EU, and the AU illustrate the critical role of sub-global actors in translating legal norms into actionable policies, building capacity, and fostering cooperation. Governance gaps persist in enforcement, legal harmonization, climate adaptation, cybersecurity, and seabed resource management, requiring targeted reforms. The study underscores several key implications for international law. First, UNCLOS continues to serve as the foundational legal regime for maritime governance, providing clarity on territorial entitlements, navigational freedoms, and resource management. However, its effectiveness is contingent upon the willingness of states to comply and the capacity of institutions to enforce norms. Second, emerging environmental and technological challenges reveal that international law must evolve to remain relevant. Climate-induced boundary changes, deep-sea resource exploitation, and autonomous shipping necessitate innovative legal interpretations and adaptive regulatory mechanisms. Third, regional institutions complement global law by operationalizing norms, fostering cooperation, and providing localized enforcement and dispute resolution mechanisms. This multi-level governance approach highlights the interdependence of international law, regional policy, and state practice.

Looking beyond 2026, maritime governance is likely to evolve along several trajectories. First, enforcement mechanisms will need to integrate advanced technologies such as satellite surveillance, autonomous monitoring, and artificial intelligence to enhance compliance verification. Second, climate-resilient legal frameworks will become essential to manage shifting baselines, disappearing coastlines, and Tran's boundary environmental impacts. Third, the governance of deep-seabed mining and other high-seas economic activities will require stronger

institutional coordination, transparent regulatory frameworks, and equitable benefit-sharing mechanisms. Fourth, cybersecurity and autonomous shipping regulation will become central to maritime safety, necessitating coordinated international standards and protocols. Furthermore, regional institutions are expected to play an increasingly prominent role in mediating disputes, coordinating security operations, and promoting sustainable development. ASEAN, the EU, and the AU will likely expand capacity-building initiatives, harmonize legal standards, and foster cooperative maritime security networks. The intersection of law, policy, and strategy will continue to shape maritime governance, requiring states, institutions, and stakeholders to adopt forward-looking approaches that balance security, economic, and environmental objectives.

In conclusion, maritime governance in 2025–26 demonstrates both the resilience of international law and the challenges posed by geopolitical, environmental, and technological transformations. Effective governance requires a combination of legal certainty, institutional coordination, technological innovation, and adaptive policymaking. By addressing enforcement gaps, harmonizing laws, adopting climate-resilient practices, and integrating cybersecurity and seabed resource management frameworks, the international community can ensure secure, sustainable, and cooperative use of the oceans for decades to come. The future of maritime governance will be defined by its ability to reconcile competing interests while safeguarding the oceans as a global commons.

References

African Union. (2013). *The Yaoundé Code of Conduct: Regional cooperation to curb piracy and armed robbery at sea in the Gulf of Guinea*. African Union Commission.

Arctic Council. (1996). *Declaration on the establishment of the Arctic Council*.

Association of Southeast Asian Nations. (2002). *Declaration on the conduct of parties in the South China Sea*.

Bennett, N. J., Blythe, J., White, C. S., & Campero, C. (2019). Blue growth and blue justice: Ten risks and solutions for the ocean economy. *Marine Policy, 107*, 103–110. https://doi.org/10.1016/j.marpol.2019.02.019

Churchill, R., & Lowe, A. (1999). *The law of the sea* (3rd ed.). Manchester University Press.

European Union. (2014). *Integrated maritime policy for the European Union*. European Commission. https://ec.europa.eu/maritimeaffairs

Intergovernmental Panel on Climate Change. (2023). *Sixth Assessment Report*. https://www.ipcc.ch

International Maritime Organization. (2022). *IMO and sustainable maritime governance*. https://www.imo.org

Keohane, R. O. (1984). *After hegemony: Cooperation and discord in the world political economy*. Princeton University Press.

Mearsheimer, J. J. (2001). *The tragedy of great power politics*. W. W. Norton.

Permanent Court of Arbitration. (2016). *The South China Sea arbitration (The Republic of the Philippines v. The People's Republic of China), Award*.

Rayfuse, R. (2010). International law and disappearing states: Maritime zones and the criteria for statehood. *Environmental Policy and Law, 40*(6), 281–287.

Tanaka, Y. (2019). *The international law of the sea*. Cambridge University Press.

Till, G. (2018). *Seapower: A guide for the twenty-first century*. Routledge.

United Nations Conference on Trade and Development. (2022). *Review of maritime transport 2022*. https://unctad.org/publication/review-maritime-transport-2022

United Nations Convention on the Law of the Sea. (1982). 1833 U.N.T.S. 397.