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Securing the Seas

A Comprehensive Assessment of Global Maritime Security

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The United Nations Institute for Disarmament Research (UNIDIR) is a voluntarily funded, autonomous institute within the United Nations. One of the few policy institutes worldwide focusing on disarmament, UNIDIR generates knowledge and promotes dialogue and action on disarmament and security. Based in Geneva, UNIDIR assists the international community to develop the practical, innovative ideas needed to find solutions to critical security problems.

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Reference

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Note

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Acronyms & Abbreviations

AU	African Union
DOALOS	Division for Ocean Affairs and the Law of the Seat (of the Office of Legal Affairs of the United Nations Secretariat)
EEZ	Exclusive economic zone
EU	European Union
FAO	Food and Agricultural Organization
GMCP	Global Maritime Crime Programme of the Office on Drugs and Crime
IBM	Immigration and Border Management Division of the International Organization for Migration
IMO	International Maritime Organization
IOM	International Organization for Migration
ISPS	International Ship and Port Security Code
ITLOS	International Tribunal for the Law of the Sea
IUU FISHING	Illegal, unreported and unregulated fishing
MDA	Maritime Domain Awareness
MPA	Marine Protected Areas
NGO	Non-governmental organization
RFMO	Regional Fisheries Management Organization
SDG	Sustainable Development Goal
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environment Programme
UNCLOS	United Nations Convention on the Law of the Sea
UNODC	United Nations Office on Drugs and Crime

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Foreword

As we navigate an increasingly interconnected and multipolar world, the security of our maritime spaces is emerging as a critical issue for global stability. For millennia, control of the seas has been synonymous with power, commerce, and security. Today, the complexity of maritime security extends well beyond securing trade routes or deterring piracy; it encompasses environmental protection, digital infrastructure, and even the broader disarmament and arms control agendas that underpin international security.

Maritime zones are increasingly vulnerable to conventional and non-conventional threats, including the proliferation of missile and drone technologies, the illicit flow of arms, and the challenges of protecting critical maritime infrastructure from an increasingly complex threat landscape. This highlights the pressing need for a stronger integration between maritime governance and the international frameworks aimed at promoting disarmament, arms control, and cooperative security.

The recently adopted Pact for the Future reflects an urgent commitment to enhancing international cooperation in this domain. In particular, Action 22 of the Pact calls for more coordinated global efforts to secure our oceans through stronger maritime governance, environmental stewardship, and measures to prevent the escalation of conflicts at sea. With increasing threats from climate change, geopolitical tensions, and technological developments, we must act swiftly and decisively to prevent further destabilization of our maritime environments.

While past efforts to address maritime threats, such as piracy in Somalia or the Gulf of Guinea, have yielded successes, these have often been reactive and localized. What is urgently required now is a more coherent and comprehensive approach—one that aligns regional efforts with international governance frameworks, harnesses new technology, and integrates the protection of biodiversity with human and national security imperatives. The security of the maritime domain is inextricably linked to broader international peace and security goals, making it an essential area for diplomatic engagement and action.

This report marks UNIDIR's first comprehensive exploration of contemporary maritime security and provides an essential baseline for understanding these diverse and complex challenges, setting the context for future in-depth studies.

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Executive Summary

Objectives

Maritime security is a paramount feature not only of international peace and security, but also of the development, human rights and environmental agendas. Global trade, energy security, food security, sustainable development, and global communications depend on safe and secure oceans.

This report has three objectives:

1. It provides a systematic and synthetic overview of how maritime security matters and how it is currently addressed within the United Nations system. The report provides an essential map of the patchwork of United Nations entities and related institutions addressing maritime security. It offers guidance for engaging with the United Nations to enhance maritime security. Yet, it also reveals challenges, such as the lack of overarching strategy or coordinating body.
2. The report identifies the key items on the maritime security agenda. It reviews the persistent challenges that define the current agenda, but also outlines 20 emerging risks, threats and regulatory deficits that must be addressed. Many of these are related to new technologies, the acceleration of maritime activities, and the link between maritime security and the environment.
3. The report outlines institutional pathways for addressing the arising matters on the agenda, but also improving the quality of the United Nations's maritime security governance overall.

The importance of maritime security

Since the 1990s, societies' reliance on the sea has grown significantly. Maritime activities have intensified, leading to the increasing industrialization of the oceans. These activities include shipping, resource exploitation, energy production, fishing, aquaculture, underwater digital systems, and conservation efforts among others.

Threats from transnational organized crime, terrorism, attacks by non-State actors, spillover from armed conflict, acts of sabotage, cyber-attacks, and the proliferation of weapon systems, including uncrewed systems and naval mines, undermine and challenge maritime stability.

As emphasized in Sustainable Development Goal 14: Life under Water, ocean economies are vital in sustainable development. Maritime security threats, including piracy, smuggling or illicit fishing, undermine the human security of costal populations and the seafaring profession and put global trade and digital communications at risk.

> Maritime security intersects with all major issues and agendas of the United Nations system, and hence **must be treated as a cross-cutting concern.**

Pollution caused by maritime security incidents, such as deliberate attacks on shipping, is a direct threat to the marine environment and puts substantial pressure on marine protection and restoration efforts.

Coordinating a patchwork: The global governance of maritime security

Maritime security is an important priority for a wide range of United Nations bodies. The Security Council has recurrently addressed maritime security issues, such as piracy or attacks on shipping and infrastructure, albeit in an ad hoc manner.

Five United Nations agencies – the International Maritime Organization, the Food and Agriculture Organization, the United Nations Environment Programme, the United Nations Office on Drugs and Crime and the International Organization for Migration – run substantial maritime security programmes under different mandates. At least 24 other United Nations agencies and related bodies also shape global maritime security.

Through bodies such as UN-Oceans, the United Nations coordinates its strategies and projects dealing with ocean development and marine protection. However, no United Nations body explicitly coordinates maritime security. Efforts, such as the Delivering as One initiative, are limited.

A growing number of formal and informal regional organizations, as well as industry bodies, private security companies, and non-governmental organizations, are also actively involved in aspects of maritime security. This makes maritime security a highly complex field.

This report provides a detailed map of organizations involved in maritime security. This map allows stakeholders to better navigate the complexity of maritime security governance and to identify engagement opportunities and convergences. It also reveals a high risk of fragmentation and lack of coherence, which suggests the need for better coordinated strategies and approaches at United Nations level.

Ongoing challenges: Armed conflict, terrorism and crime at sea

The report identifies several challenges which currently define the agenda and are addressed by maritime security actors. These, however, will require continuing efforts, notably in capacity-building, security sector reform and peacebuilding.

Most current responses focus on maritime (or 'blue') crimes, including piracy, smuggling of arms, narcotics, contraband and people, or illicit fishing. Despite substantial efforts over the past two decades, these issues are persistent and call for more effective strategies and projects.

Emerging challenges that will define the future of security at sea

The report identifies 20 pressing challenges that will define the maritime security agenda of the future. These are poorly understood and have not been fully addressed by the international community.

Many are linked to technological developments, including cyber technology, sensors, and the proliferation of low-cost uncrewed systems.

Others are linked to the nexus between climate change, biodiversity loss, the need for environmental protection and maritime security.

Recommendations: New pathways for multilateral solutions

The report concludes with four recommendations to provide better guidance and identify solutions and effective responses:

1. The United Nations system requires a more coherent approach to maritime security. It is recommended that a high-level panel evaluate the options for implementing a coordinated maritime security strategy at United Nations level.
2. Global assessments and reporting are required to better evaluate the state of maritime security in individual countries and regional seas. This will allow technical assistance to be better targeted and assist with the identification of trends and risks.
3. Challenges such as maritime cyber security, critical infrastructure protection or sanction evasion, call for systematic and formal clarification and reconsideration of the law of the sea.
4. Efforts are required to enhance maritime security at the level of regional seas. It is necessary to move beyond informal regional networks, utilizing, for instance, regional seas Conventions as a solid legal basis.

UNIFIL Maritime Task Force Fleet Conducts Exercise outside Port of Beirut, February 2020. Credit: UN Photo/Pasqual Gorriz.

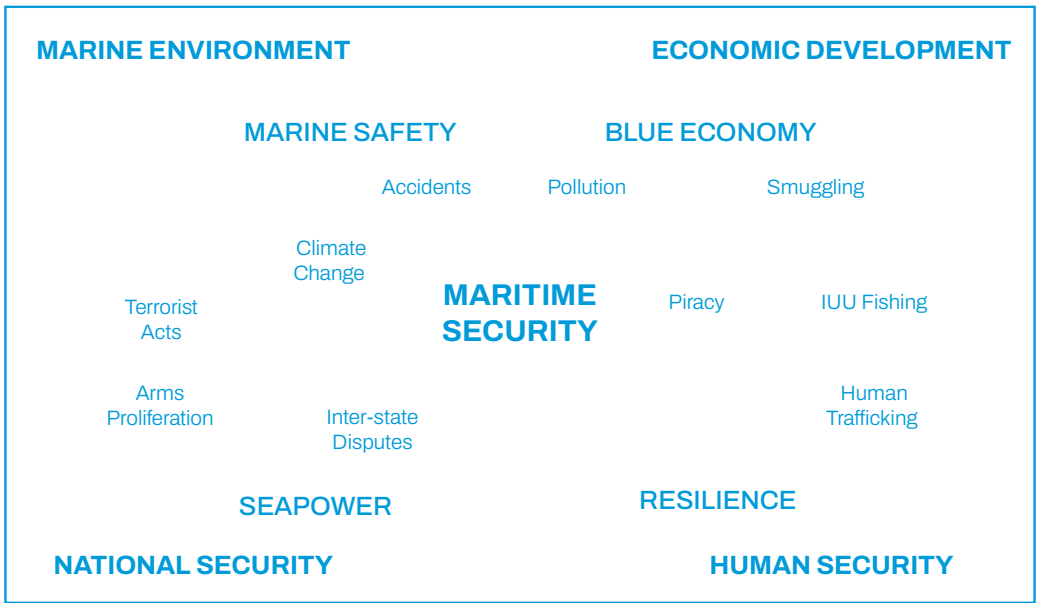
1. What is maritime security?

Maritime security is about safeguarding maritime activities and the marine environment from security threats such as terrorism, piracy and illicit activities. Since the late 1990s, maritime security has increasingly climbed up the international security agenda and is frequently discussed in the Security Council.[1] Several United Nations agencies have developed maritime security programmes, and a variety of States and regional organizations address it in dedicated strategies.

Contemporary maritime security includes goals of good order at sea, sustainable development, crisis prevention, environmental protection, and climate change mitigation. This report takes stock of two decades of evolving maritime security issues to identify ongoing and emerging challenges and lays out opportunities for global and collective security responses.

FIGURE 1.

Maritime Security Matrix



Source: *Christian Bueger, 'What Is Maritime Security?', Marine Policy 53 (March 2015): 161,* **doi:10.1016/j.marpol.2014.12.005**.

In line with the Secretary-General's approach, this report draws on a holistic reading of security as a pillar integrated with sustainable development and human rights that requires a focus on the prevention of crisis and the participation of a broad range of actors. Maritime security here refers to the oceanic component of this agenda and incorporates issues of marine safety, blue economy, ocean health, climate change mitigation, sustainable ocean development and the human security of marine users, as indicated in figure 1.

[1] The roots of the maritime security debate reach back well into the 1970s when problems such as piracy or narcotic smuggling started to be recognized on the international agenda.

Security Council Adopts Resolution on Maritime Security in Gulf of Guinea, May 2022. Credit: UN Photo/Loey Felipe.

Overview

This report is structured as follows. Chapter 2 explains how maritime security matters. It explores its links to key United Nations priorities, as expressed in the Charter, the Sustainable Development Goals, the law of the sea, and international conventions on transnational organized crime, human rights, environment protection and climate change.

Chapter 3 reviews the current global governance system for maritime security. It reveals a patchwork of organizations and projects at global and regional levels. It also shows a lack of coordination and oversight among these initiatives.

While coordination attempts exist under the One United Nations initiative, authority and responsibilities are dispersed and distributed across various organizations, with no central steering mechanism or strategy in place at United Nations level. Moreover, many issues on the maritime security agenda are dealt with through informal rather than formal governance formats. These can provide pragmatic solutions but lack formal rules and accountability mechanisms. Attempts to better organize, formalize and institutionalize the global response to maritime security have had limited success so far.

Chapter 4 considers the challenges that defined the maritime security agenda in its first two decades. It investigates issues such as armed conflict, peacebuilding and security sector reform, maritime terrorism, maritime piracy and other expressions of organized crime at sea. The chapter shows that an increasingly commonly accepted and standardized set of tools for maritime security has been developed. These provide important mechanisms for addressing the challenges yet require ongoing attention and optimization.

Chapter 5 identifies new and emergent challenges to maritime security today. These are characterized by their novelty and uncertainty, and a relative immaturity of understanding in terms of how they should be addressed. Twenty distinct challenges are outlined, and prospective solutions or processes indicated.

This report concludes by providing four key recommendations on how the United Nations system and wider global governance of maritime security can be made fit to deal with ongoing but also emerging challenges in the maritime domain.

2. Why maritime security matters

Maritime security is an intrinsic part of ocean governance, and the oceans are vital for sustainable development, human rights, peace, stability, and global health. The vast acceleration of the use of the oceans for peaceful purposes, enabled in part by the 1982 United Nations Convention on the Law of the Sea (UNCLOS), presents opportunities for the sustainable development of blue economies. Yet it has also brought with it new challenges for peace and security and ocean health.

This chapter reviews the importance of maritime security by first providing an overview of how humans' use of the oceans has accelerated rapidly in recent years. It then demonstrates how maritime security is an integral part of ocean governance. The chapter proceeds to specify the role of maritime security in sustainable development, environmental protection, and human rights.

2.1. Blue acceleration: The industrialization of the maritime domain

The oceans are the lifeline of the global economy and communications. In the past three decades, maritime economic activities and infrastructures have increased rapidly. The oceans have become densely industrialized spaces that are central to modern societies and human life. [2]

> The oceans are the **lifeline of the global economy** and communications. In the past three decades, maritime economic activities and infrastructures have increased rapidly.

For example, shipping traffic has increased rapidly since the rise of globalization and containerization in the 1980s, and today about 80 per cent of world trade is shipped by a fleet of 100,000 large merchant vessels.[3] The oceans are also major source of energy with up to 30 per cent of oil and gas currently being produced in offshore fields. Marine wind parks are also proliferating and technologies to harvest wind and tidal energy in deep water environments are advancing rapidly.[4]

Increasing investments in such green energy projects will be vital to address climate change and realize the global energy transition.

Global communication depends on 1.3 million kilometres of undersea fibre-optic cables. These are much cheaper and more reliable than satellites and transport up to 99 per cent of international telecommunication data.[5]

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[2] Jouffray, Jean Baptiste, Robert Blasiak, Albert V. Norström, Henrik Österblom, and Magnus Nyström. 2020. The Blue Acceleration: The Trajectory of Human Expansion into the Ocean, One Earth 2 (1): 43–54.

[3] United Nations Conference on Trade and Development (UNCTAD). 2023. Review of Maritime Transport 2023, UNCTAD/RMT/2023, Geneva: UNCTAD.

[4] Maribus 2021. The Ocean, Guarantor of Life – Sustainable Use, Effective Protection, World Ocean Review 7, Malta: International Ocean Institute. US Energy Information Administration. Offshore production nearly 30% of global crude oil output in 2015. 25 October 2016, https://www.eia.gov/todayinenergy/detail.php?id=28492.

[5] Kavanagh, Camino. 2023. Wading murky waters. Subsea Communication Cables and Responsible State Behaviour. Geneva: UNIDIR.

Global energy markets, meanwhile, rely on a growing underwater network of gas and oil pipelines as well as power cables to connect offshore wind parks to customers and regional energy networks.

The oceans are a major source of local livelihoods. It has been estimated that more than one billion people depend on the ocean as their primary source of food and that 260 million people work in the global marine fishing industry. Some studies suggest that the global blue economy is worth USD 1.5 to 2.5 trillion per year.[6]

Beyond this economic value, the oceans are also an important site to preserve the world's historical and cultural heritage.[7]

The importance of the oceans to the global economy is well illustrated by the Ever Given incident of March 2021. The Ever Given, one of the largest container ships in the world, ran aground in the Suez Canal during a sandstorm, causing it to block all traffic through one of the world's busiest maritime routes. The incident caused significant disruption to global supply chains, with hundreds of ships carrying trade stuck at either end of the canal. The grounding of the Ever Given has been described as a 'world loss event', costing global trade up to USD 10 billion.[8]

2.2. Maritime security, ocean governance and the law of the sea

Developing rules, rights and responsibilities to safeguard maritime activities and ensure the equitable distribution of income from the sea has been a cornerstone of the United Nations since its inception.

These goals were reflected in the creation of International Maritime Organization (IMO) in 1948[9] to regulate shipping and maritime transportation and the establishment of the Food and Agricultural Organization (FAO) in 1945, whose mandate includes fisheries issues. Today, many other United Nations agencies address the oceans in one way or another, including environmental protection, pollution and economic development. However, there is currently no dedicated United Nations agency with maritime peace and security as its core objective.

Negotiations for a comprehensive treaty for the oceans started in the 1950s and cumulated with the adoption of UNCLOS in 1982. The treaty, which is widely regarded as the 'constitution of the oceans', entered into force in 1994. Although UNCLOS was conceived as a direct contribution to the maintenance of global peace, maritime security was not integrated into the broader United Nations architecture and until recently has not been a core feature of international security debates.

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[6] Paolo, Fernando, et al. 2024. Satellite Mapping Reveals Extensive Industrial Activity at Sea, Nature 625 (7993): 45.

[7] Henderson, Jon. 2019. Oceans without History? Marine Cultural Heritage and the Sustainable Development Agenda, Sustainability 11 (18): 5080.

[8] Mary-Ann Russon, "The cost of the Suez Canal blockage." BBC, 29 March 2021. https://www.bbc.com/news/business-56559073; Lee, Jade Man-yin, and Eugene Yin-Cheung Wong. 2021. Suez Canal Blockage: An Analysis of Legal Impact, Risks and Liabilities to the Global Supply Chain, MATEC Web of Conferences 339: 01019; Fan, Shiqi, Zaili Yang, Jin Wang, and John Marsland. 2022. Shipping Accident Analysis in Restricted Waters: Lesson from the Suez Canal Blockage in 2021, Ocean Engineering 266 (P5): 113119.

[9] Originally named Intergovernmental Maritime Consultative Organization.

The *Agenda for Peace* of 1992,[10] for instance, did not contain a reference to UNCLOS or the oceans, although, as observers at the time pointed out.[11] In the 1990s, high hopes were based on integrating multilateral maritime Zones of Peace into non-proliferation, denuclearization and regional comprehensive security arrangements with the regional seas conventions.[12] However, these ambitions never came to fruition.

It was the counter-terrorism response in the 2000s and subsequent Security Council actions on international maritime crimes of the late 2000s and early 2010s that eventually led to the building of a closer relationship between ocean governance and peace and security institutions.[13] Yet, the major subsequent Secretary-General initiatives and reports on peace and security did not feature the oceans and excluded maritime security from United Nations security debates in the same way that the *Agenda for Peace* had done.[14] More recent documents, including the 2023 *A New Agenda for Peace* and the draft *Pact for the Future*, have little if anything to say about the maritime domain.[15]

2.3. Maritime security and the environment

Marine environmental stressors such as pollution have been on the international agenda since the 1970s, when large oil spills showed the high level of environmental damage that shipping can cause. These were addressed through the IMO as well as a series of regional seas conventions under the auspices of the United Nations Environment Programme (UNEP; see chapter 3.2).

The fight against illicit fishing, likewise, has become a growing priority under the environmental agenda, recognizing how crimes in the fisheries sector can lead to rapidly declining fish stocks and biodiversity loss. Initially, the United Nations's climate change and biodiversity regimes engaged only lightly with ocean issues. Yet this has changed in recent years. Today, United Nations agencies pay a lot of attention to issues such as ocean acidification, pollution, human hazards and other environmental harms at sea.[16]

Marine spatial planning processes, the establishment of marine protected areas (MPAs) and the decarbonization of maritime activities are currently the most important measures to reduce environmental stressors at sea. The

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[10] Boutros Boutros-Ghali. 1992. An agenda for peace: preventive diplomacy, peacemaking and peace-keeping: report of the Secretary-General pursuant to the statement adopted by the Summit Meeting of the Security Council on 31 January 1992, DPI/1247, New York: United Nations.

[11] Borgese, Elisabeth Mann (ed.). 1997. Peace in the Oceans. Ocean Governance and the Agenda for Peace. The Proceedings of Pacem in Maribus XXIII, Costa Rica, 3–7 December 1995. UNESCO.

[12] Borgese, Elisabeth Mann. 1998. The Oceanic Circle: Governing the Seas as a Global Resource. Tokyo, New York, Paris: United Nations University Press.

[13] Bueger, Christian and Timothy Edmunds. 2024. Understanding Maritime Security. Oxford: Oxford University Press.

[14] E.g. A more secure world: Our shared responsibility. Report of the Secretary-General's High-level Panel on Threats, Challenges and Change (2004) contains no reference to oceans and seas.

[15] United Nations. 2023. A New Agenda for Peace, Our Common Agenda Policy Brief 9, July 2023. New York: United Nations; United Nations 2024. Zero Draft of the Pact for the Future, New York: United Nations.

[16] Chan, Nicholas. 2021. Linking ocean and climate change governance, WIREs Climate Change 12 (4): e711.

new biodiversity target to protect 30 per cent of the planet by 2030 (known as 30 by 30),[17] as well as the recently concluded treaty on areas beyond national jurisdiction that foresees the creation of MPAs in international waters[18] have given these tools major impetus in 2023. All these measures depend in one way or the other on law enforcement at sea. Indeed, as has been noted by observers, MPAs risk becoming inefficient 'paper parks' that have limited on the ground conservation outcomes, if they cannot draw on appropriate law enforcement and surveillance capacities.[19]

Maritime insecurities, moreover, directly threaten many conservation and restoration efforts. This is most obvious in the case of illicit fishing, which can have devasting consequences for biodiversity.[20] Incidents off the coast of Yemen, where attacks have led to the sinking of vessels and the spillage of pollutants, illustrate the direct nexus between armed conflict and environmental risks.[21]

Lastly, maritime security forces play a role in climate change mitigation and adaptation. Navies are major carbon dioxide emitters that need to reduce their footprint through technological innovation. Military resources can be vital in disaster responses and preparedness, but they can also contribute to mitigation measures, such as the reforestation of wetlands.

2.4. Maritime security, sustainable development, and the blue economy

The importance of ocean development has long been noted in the United Nations system. Many of the UNEP regional seas conventions included development goals, and part of the mandate of the United Nations Conference on Trade and Development (UNCTAD) is to ensure that less developed countries benefit from ocean-borne trade. Development, including through the collective advancement of marine science and technology transfer, is moreover enshrined as a principle in UNCLOS. The Sustainable Development Goals (SDG) include a goal explicitly dedicated to the oceans (SDG 14: Life below Water) and refer to the oceans as a dimension of sustainable development throughout.

Sustainable economic development discussions are today captured in the concept of 'blue economy' – a term that is widely used in ocean

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[17] Convention on Biological Diversity. 2023. Kunming-Montreal Global Biodiversity Framework, https://www.cbd.int/gbf.

[18] United Nations 2023. Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction, New York: United Nations, https://www.un.org/bbnjagreement/en.

[19] Rife, Alexis N., Brad Erisman, Alexandra Sanchez and Octavio Aburto-Oropeza. 2013. When good intentions are not enough … Insights on networks of 'paper park' marine protected areas, Conservation Letters 6 (3): 200–212.

[20] High Level Panel for a Sustainable Ocean Economy. 2020. Organised Crime in the Fisheries Sector. Washington, DC: World Resources Institute. https://oceanpanel.org/blue-papers/organised-crime-associated-fisheries. United Nations. 2022. Our ocean, our future, our responsibility, Political Declaration, 2022 UN Ocean Conference, Lisbon, https://sdgs.un.org/sites/default/files/2022-06/UNOC_political_declaration_final.pdf.

[21] Bueger, Christian and Giacomo Persi Paoli. 2024. Navigating the Depths: Unravelling the Complexity of Contemporary Maritime Security, UNIDIR, https://unidir.org/navigating-the-depths-unravelling-the-complexity-of-contemporary-maritime-security/.

debates across the United Nations system and among donors and regional organizations.[22] The blue economy concept refers to integrated cross-sectoral policies that aim to create economic growth and employment opportunities, while contributing to environmental sustainability.

This often implies developing new sectors outside the traditional ocean economy such as sustainable tourism, aquaculture, or green offshore energy production. Many States and regional organizations, including small island development States, have outlined plans and strategies drawing on the concept, or have created dedicated ministries for ocean development.

Blue economy and maritime security intersect in many ways. High levels of maritime insecurity can lead to direct economic losses. This is well documented for the case of Somali piracy, which the World Bank estimated costs the global economy up to USD 18 billion annually due to losses in marine shipping, tourism, and fishing.[23] Maritime insecurities also imply a less conducive environment for blue economy investments.

Conversely, a lack of blue economy development and employment opportunities can feed maritime insecurities, for example by creating incentives for coastal populations to engage in or support maritime crime. The income from blue economy activities, moreover, is vital for many States to enable investments in maritime security capacities.

These interlinkages can lead to downward spirals in which higher levels of maritime insecurity lower economic development opportunities and reduce funding for maritime security activities to protect the blue economy. To move to an upwards spiral thus requires policies and strategies that pay attention to the interlinkages between maritime security and the blue economy.

2.5. Maritime security, human security and human rights at sea

The improvement of working conditions for seafarers and fishermen has been a long-standing concern of the International Labour Organization and the FAO. Yet humanitarianism, human security and human rights debates have only more recently started to recognize the maritime dimensions of these issues.

Human rights and human security at sea are deeply intertwined with the maritime security agenda. A lack of human security can lead to coastal communities engaging in or supporting illicit activities or extremist groups. Indeed, human insecurities and injustice have been identified as a major driver of maritime security threats, such as piracy.[24]

Human rights violations can lead to irregular migration and create humanitarian emergencies, as witnessed in the case of the Rohingya refugees, or in the irregular migration waves in

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[22] WWF. 2015. Principles for a Sustainable Blue Economy. WWF Baltic Ecoregion Programme. https://wwfint.awsassets.panda.org/downloads/15_1471_blue_economy_6_pages_final.pdf; Bueger, Christian and Felix Mallin. 2023. Blue Paradigms. Understanding the intellectual revolution in global ocean politics, International Affairs 99 (4): 1719–1739.

[23] World Bank. 2023. The Pirates of Somalia. Ending the Threat, Rebuilding the Nation. Washington: The World Bank. https://documents1.worldbank.org/curated/en/840211468188347064/pdf/76713-v2-Box393223B-PUBLIC-pirates-of-somalia-executive-summary-web.pdf.

[24] Bueger, Christian. 2015. Learning from Piracy: Future Challenges of Maritime Security Governance, Global Affairs 1 (1): 33-42; Klein, Axel. 2013. The moral economy of Somali piracy: Organised criminal business or subsistence activity? Global Policy 4 (1): 94–100.

An inflatable boat filled with migrants approaches the north coast of the Greek island of Lesbos, October 2015. Credit: Joel Carillet / istockphoto.

the Mediterranean. The delivery of humanitarian aid depends on sea transport, and maritime insecurities such as piracy or armed attack might mean that the costs of transporting humanitarian goods substantially rise, or delivery is fully halted. Moreover, maritime insecurity impacts on global trade markets, and thus can lead to higher food or energy prices, implying food and energy insecurities for less developed countries.

Finally, human rights might be directly violated at sea, whether this is through bonded labor and slavery onboard vessels, irregular migration at sea, or through the environmental hazards created through maritime trade. Human rights and maritime security are thus closely interlinked.

2.6. Conclusion

Maritime security intersects with all major issues and agendas of the United Nations system, and hence must be treated as a cross-cutting concern. Maritime security should be understood as a core element of the United Nations' peace and security architecture. Yet it also affects all the other key areas of United Nations activity too. This calls for a holistic approach to maritime security and for better integrating it in other United Nations agendas, such as the *New Agenda for Peace*. It also needs be better incorporated into the development, environmental, and human rights work of the United Nations system.

3. The global governance of maritime security – A map

This chapter maps the global governance system for maritime security. A synthetic, non-exhaustive overview is provided of who does what to address maritime security. Showing which international bodies are responsible for aspects of the issue area provides a useful map for navigating the system and identifying opportunities to further strengthen global maritime security governance.

Yet, this review also reveals a lack of coordination and oversight within the global governance architecture for maritime security. Authority and responsibilities are dispersed and distributed across different organizations and mandates, with no central steering mechanism or strategy in place at United Nations level.

> Maritime security is addressed through a **complex system of formal and informal** governance arrangements and organizations. However, the limitations of this system are increasingly apparent.

Moreover, many of the issues on the maritime security agenda are dealt with in informal international governance formats. These can provide pragmatic solutions, but they lack formal rules and accountability mechanisms. Attempts to better organize, formalize and institutionalize the global response to maritime security have had limited success so far.

The review starts with a mapping of the United Nations system and related international organizations. It proceeds to discuss formal and informal regional mechanisms with maritime security functions, including regional economic communities and mechanisms facilitated by United Nations agencies. Finally, the scope of non-State actors in maritime security governance is discussed.

3.1. The United Nations system

Maritime security is firmly anchored in the 1982 UNCLOS and its institutions. The General Assembly item "Oceans and the Law of the Sea" provides important sites for the discussion of specific maritime security issues. The Security Council has been the primary site for deliberations and decisions on maritime security under the United Nations's peace and security architecture.

A wide range of United Nations agencies and programmes also address specific maritime security challenges – with five agencies in the lead: the IMO, the FAO, UNEP, the United Nations Office on Drugs and Crime (UNODC) and the International Organization for Migration (IOM).

The United Nations has established a general coordination mechanism for ocean governance concerns and activities, UN-Oceans, but this mechanism does not include peace and security concerns, and the United Nations has not created an alternative instrument to address maritime security issues. To date, the United Nations has not developed an integrated maritime security strategy or structure comparable, for example, to the encompassing

strategy in counter-terrorism.[25] The Security Council has held discussions on how to streamline and provide coherence to the United Nations's maritime security work.[26] However, these efforts have remained inconclusive.

3.1.1. The Security Council

The Security Council has recurrently reacted to maritime security issues. The predominating items are the spillover of armed conflict to the sea, sanctions and proliferation, piracy off the Coast of Somalia and the Gulf of Guinea, as well as armed attacks on shipping. Throughout these meetings, statements and resolutions, the Council has assumed a central role in maritime security (and wider ocean governance). Indeed, a study published in 2018 shows that there has been a steady increase of Security Council resolutions and statements addressing maritime security over time.[27]

The first opportunity for the Security Council to discuss maritime security comprehensively came at a 2021 open high-level debate sponsored by India.[28] Council members affirmed their view of the centrality of the oceans in peace and security and called for addressing root causes and enhancing sustainable development to reduce insecurity.

Importantly, most Council members agreed that environmental challenges, including illicit fishing and pollution from shipping, should be included in the Council's understanding of peace and security. Members also called for a better structuring of the international community's work on maritime security and a dedicated sub-body for the issue, but did not reach agreement.

Among the Security Council's subsidiary bodies, those in charge of monitoring United Nations sanctions regimes have addressed maritime security as pertaining to smuggling and sanctions violations in the maritime transport industry.[29]

3.1.2. The General Assembly

The General Assembly regularly reviews the state of the oceans as part of its standing agenda item "oceans and the law of the sea" within the "promotion of justice and international law" programme leading to an annual resolution.[30] The resolution draws on the Secretary-General's annual report on the topic, the work of related ad hoc committees, and submissions by United Nations-affiliated organizations and Member States.

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[25] Schindler, Hans-Jakob. 2020. United Nations and Counter-Terrorism, in Routledge Handbook of Deradicalisation and Disengagement, edited by Stig Jarle Hansen and Stian Lid. London: Routledge, 163-179; Von Einsiedel, Sebastian. 2016. Assessing the UN's Efforts to Counter Terrorism. United Nations University Centre for Policy Research Occasional Paper 8.

[26] Bueger, Christian. 2021. Does Maritime Security Require a New United Nations Structure? Global Observatory, 26 August 2021, https://theglobalobservatory.org/2021/08/does-maritime-security-require-a-new-united-nations-structure/.

[27] Wilson, Brian. 2018. The Turtle Bay Pivot: How the United Nations Security Council Is Reshaping Naval Pursuit of Nuclear Proliferators, Rogue States, and Pirates, Emory International Law Review 33 (1): 1–90.

[28] Letter dated 26 July 2021 from the Permanent Representative of India to the United Nations addressed to the Secretary-General and the President of the Security Council, S/2021/680-EN, Maintenance of international peace and security: Maritime security - Security Council, VTC Open debate, available at https://webtv.un.org/en/asset/k1d/k1dw6hz1mp and https://press.un.org/en/2021/sc14598.doc.htm.

[29] Biersteker, Thomas J. and Zuzana Hudáková. 2021. UN targeted sanctions: historical development and current challenges, in Research Handbook on economic Sanctions, edited by Peter A.G. van Bergeik, Edward Elgar, 107-124.

[30] As documented at https://www.un.org/depts/los/; see also Corell, Hans. 2015. The United Nations: A Practitioner's Perspective. In The Oxford Handbook on the Law of the Sea, edited by Donald R. Rothwell, Alex G. Oude Elferink, Karen N. Scott, Tim Stephens, Oxford: Oxford University Press, 346-372.

The resolutions contain a dedicated chapter on "marine safety and security", within which matters on the IMO agenda as well as transnational organized crimes at sea feature extensively. In past resolutions up to half of the paragraphs referred to maritime security in one way or another.[31]

The work of the General Assembly on oceans and the law of the sea is based on three main groups, comprising:

1. the Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction;
2. the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea which investigates a particular annual theme; and
3. the Ad Hoc Working Group of the Whole on the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects.

In addition, there are also regionally oriented ad hoc groups, established under the Zone of Peace concept, including the Ad Hoc Committee on the Implementation of the Declaration of the Indian Ocean as a Zone of Peace (see chapter 3.2).

The General Assembly committees do not focus on maritime security as an independent standing item, nor have working groups directly devoted to it. Maritime security issues have, however, been discussed frequently in the First Committee, including in its work on State conflicts and disputes (e.g. the dispute over the Chagos archipelago between the United Kingdom and Mauritius), small arms smuggling, non-proliferation, and counter-terrorism.

3.1.3. The Secretariat

The Secretariat is firstly active in maritime security through its support to the Security Council. This has included regular briefings on maritime security issues, including a series of annual reports on piracy off the coast of Somalia from 2008 to 2022,[32] as well as regular reports on conflicts in Somalia, Yemen, Mozambique, and Libya that have significant maritime security components. There are also annual reports of the Secretary-General to the General Assembly on oceans and the law of the sea and on sustainable fisheries that address aspects of maritime security.[33]

Within the Secretariat, the Office of Legal Affairs hosts the Division for Ocean Affairs and the Law of the Sea (DOALOS), which is the secretariat of UNCLOS.[34] DOALOS acts as repository for territorial claims and engages in capacity-building activities on the law of the sea. DOALOS is also the focal point and secretariat of the inter-agency United Nations coordination mechanism UN-Oceans installed by the General Assembly in 2003 to coordinate the ocean-related

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[31] See e.g. A/RES/78/69 (2023), A/RES/77/248 (2022), A/RES/76/72 (2021).

[32] Security Council Report. 2023. UN Documents for Piracy: Secretary General's Reports. Available at: https://www.securitycouncilreport.org/un_documents_type/secretary-generals-reports/?ctype=Piracy&cbtype=piracy.

[33] As documented at https://www.un.org/depts/los/; see also Corell, Hans. 2015. The United Nations: A Practitioner's Perspective. In The Oxford Handbook on the Law of the Sea, edited by Donald R Rothwell, Alex G Oude Elferink, Karen N Scott, Tim Stephens, Oxford: Oxford University Press, 346-372.

[34] As documented at https://www.un.org/depts/los/; see also Corell, Hans. 2015. The United Nations: A Practitioner's Perspective. In The Oxford Handbook on the Law of the Sea, edited by Donald R Rothwell, Alex G Oude Elferink, Karen N Scott, Tim Stephens, Oxford: Oxford University Press, 346-372.

activities of United Nations bodies.[35] While coordinating environmental and development activities, UN-Oceans does not address maritime security specifically.

DOALOS also organizes the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects, known as "World Ocean Assessment". The first World Ocean Assessment was published in 2015,[36] the second in 2021,[37] and a third is currently being prepared. The report provides an extensive expert environmental assessment of marine ecosystems and biodiversity. The 2015 assessment included chapters on coastal communities and ocean industries. Yet neither peace nor security or crime are concepts that are used in the report, besides references to food and bio security. The assessment, however, includes short chapters on the environmental impacts of shipping (three paragraphs), piracy (one paragraph) and a larger chapter on illicit fishing.

The Department for Social and Economic Affairs' Sustainable Development Unit is in charge of the implementation of SDGs. It hosts the office of a Special Envoy for the Ocean, which is tasked with the promotion of SDG 14: Life Below Water and organizes the bi-annual UN Ocean Conference to review progress.[38] The office of the Special Envoy has emphasized the importance of maritime security for sustainable development of ocean resources in speeches. Yet the office prioritizes fisheries crimes,[39] and none of the communities of ocean actions that it convenes to coordinate commitments have a maritime security focus.[40]

Besides its traditional focus on nuclear non-proliferation, which includes denuclearization of the seabed[41], the United Nations Office for Disarmament Affairs has developed work on information and outer-space security. It has not developed a dedicated focus on maritime security, but it discusses maritime issues in its work on the proliferation of weapons, where smuggling via maritime routes is a key challenge.

The United Nations Office of Counter-Terrorism coordinates the implementation of the United Nations Global Counter-Terrorism Coordination Compact. Under its Border Security and Management Programme, the Office also runs a series of capacity-building activities, which have included guidance on new technologies or on the detection of radiological/nuclear materials at maritime ports. The Office also organizes dialogues on these issues between national counter-terrorism centres.[42]

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[35] United Nations Oceans & Law of the Sea. UN-Oceans. https://www.un.org/depts/los/coop_coor/un_oceans.htm.

[36] United Nations Division for Ocean Affairs and the Law of the Sea. The Second World Ocean Assessment (WOA II). https://www.un.org/regularprocess/content/first-world-ocean-assessment.

[37] United Nations Division for Ocean Affairs and the Law of the Sea. The Second World Ocean Assessment (WOA II). https://www.un.org/regularprocess/woa2launch.

[38] United Nations Department of Economic and Social Affairs. Peter Thomson UN Secretary-General's Special Envoy for the Ocean. https://sdgs.un.org/topics/oceans-and-seas/SpecialEnvoy.

[39] E.g. Thomson, Peter. 2019. The Ocean is in Trouble. Horizons: Journal of International Relations and Sustainable Development 14: 158-167.

[40] United Nations Department of Economic and Social Affairs. Communities of Ocean Action for Supporting Implementation of SDG 14. https://sdgs.un.org/topics/oceans-and-seas/coas.

[41] Nayan, Rajiv. 2020. The United Nations and Nuclear Issues. Strategic Analysis 44 (5): 438–50.

[42] United Nations Office of Counter-Terrorism. UNCCT Annual Report: A report under the UNOCT Strategic Plan and Results Framework 2022-2025. https://www.un.org/counterterrorism/sites/www.un.org.counterterrorism/files/uncct_annaul_report_2022_web.pdf.

3.1.4. Institutions under the United Nations Convention on the Law of the Sea

The entry into force of UNCLOS in 1994 not only provided an overarching legal framework for maritime security,[43] but also led to the establishment of new institutions for ocean governance, in addition to DOALOS, as discussed above.[44]

Since its inauguration in 1996, the International Tribunal for the Law of the Sea (ITLOS) has become one of the key international bodies for resolving maritime disputes between States if these cannot be addressed through bilateral negotiations. Under UNCLOS, States have agreed to resolve their disputes peacefully, including by using the different procedures provided by ITLOS. To date, ITLOS has addressed 33 cases, including judgments and advisory opinions on the Chagos dispute between the United Kingdom and Mauritius, the maritime boundary between Bangladesh and Myanmar, and small island States and climate change.[45]

The International Seabed Authority was created under UNCLOS to govern and manage the resources outside of national jurisdiction on the seabed under the common heritage of humankind principle. Mainly directed towards the regulation of deep-sea mining operations, the Authority does not currently have a peace and security focus. Yet it could have one in the future to deal with disputes between States over mining of deep-sea minerals many of which are seen as of strategic importance.

UNCLOS has a Meeting of States Parties to the Convention. However, the mandate of this annual meeting is limited to administrative questions, such as the appointment of judges and the approval of budgets. The meeting does not review UNCLOS or comment on its interpretation or application. This has at times been controversial and is often seen as a major gap in the treaty.[46]

UNCLOS is nearly universal in its application, but not all United Nations members are party to the treaty. As of 2024, the convention has been ratified by 169 parties, which includes 165 United Nations Member States plus the Observer State Palestine and non-member the Cook Islands and Niue and the European Union. An additional 14 United Nations Member States have signed but not ratified the Convention, including the Islamic Republic of Iran, the Democratic People's Republic of Korea, and the United States, while 14 United Nations Members States, such as Israel, Peru, the Syrian Arab Republic and Türkiye, have neither signed nor ratified the agreement.

3.1.5. Other United Nations bodies and functional commissions

The Human Rights Council has started to engage with maritime security through the work of its Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous

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[43] Klein, Natalie. 2011. Maritime Security and the Law of the Sea. Oxford: Oxford University Press.

[44] See Harrison, James. 2015. The Law of the Sea Convention Institutions, in The Oxford Handbook on the Law of the Sea, edited by Donald R. Rothwell, Alex G. Oude Elferink, Karen N. Scott, Tim Stephens, Oxford: Oxford University Press, 373-393.

[45] International Tribunal for the Law of the Sea. https://www.itlos.org/en/.

[46] Corell, Hans. 2015. The United Nations: A Practitioner's Perspective. In The Oxford Handbook on the Law of the Sea, edited by Donald R. Rothwell, Alex G. Oude Elferink, Karen N. Scott, Tim Stephens, Oxford: Oxford University Press, 346-372.

substances and wastes.[47] The rapporteur investigated a maritime incident in Mauritius, the 2021 Wakashio disaster, which was discussed at the Human Rights Council.[48] They also delivered a comprehensive report to the General Assembly which extensively sets out the environmental and human rights impact of the shipping industry and the limitations of how these are currently address and mitigated in the IMO.[49]

The *Peacebuilding Commission* has hardly considered the maritime dimension of peacebuilding in its work. This is partially an outcome of its focus on landlocked States like the Sudan, Mali, and the Central African Republic. In June 2021 the Commission convened a meeting on maritime security for the first time when it held an event on piracy in the Gulf of Guinea.[50] It received subsequent briefings by the UNODC and submitted written advice to the Security Council on piracy and armed robbery at sea in the Gulf of Guinea in 2022.[51]

The *Commission on Crime Prevention and Criminal Justice*, established by the Economic and Social Council, acts as the principal policymaking body of the United Nations in the field of crime prevention and criminal justice. Since 2006, it also functions as the governing body of UNODC. Overseeing UNODC's Global Maritime Crime Programme (see chapter 3.1.6), it has discussed issues of transnational organized crime at sea extensively.

3.1.6. The Big Five: United Nations bodies with extensive maritime security programmes

The organization coordinating the United Nations's ocean work – UN-Oceans – lists 31 United Nations entities as members.[52] In the 2022 consultative process for the Secretary-General's report on oceans and the law of the sea, 40 United Nations entities submitted information, out of which 13 are regional in focus.[53] With the introduction of the SDGs, which includes SDG 14 on the oceans, all United Nations agencies were asked to consider the importance of the oceans in their work.

This indicates the substantial numbers of United Nations entities with the potential to be involved in ocean governance issues. However, the number of United Nations agencies which explicitly consider maritime security issues as one of their core tasks is narrower. Five agencies are most important in this regard: the IMO, FAO, UNEP, UNODC, and the IOM.

> **Five agencies** are most important in this regard: the IMO, FAO, UNEP, UNODC, and the IOM.

[47] Special Rapporteur on toxics and human rights. https://www.ohchr.org/en/special-procedures/sr-toxics-and-human-rights.

[48] A/HRC/51/35/Add.1.

[49] A/HRC/54/25/Add.2, A/78/169.

[50] Annual report, A/76/678, S/2022/89, para 18.

[51] Annual report, A/77/720, S/2023/86, para 21.

[52] UN-Oceans. https://www.un.org/depts/los/coop_coor/ptcptn_en.htm.

[53] Contributions from United Nations agencies, programmes and bodies, as well as other intergovernmental organizations to the report of the Secretary-General on oceans and the law of the sea to the seventy-seventh session of the General Assembly. https://www.un.org/depts/los/general_assembly/contributions77.htm.

FIGURE 2.

The big five United Nations Agencies

UNITED NATIONS AGENCY	BODIES & PROGRAMMES	MANDATE	NATIONAL STAKEHOLDERS
International Maritime Organization (IMO)	MSC & FAL Committees, Technical Cooperation Programme	Marine Safety, Ship & Port Security	Maritime Authorities, Ministries of Transport
Food and Agricultural Organization (FAO)	RFMOs	Illicit Fishing	Fishing Authorities, Ministries of Agriculture
United Nations Environment Programme (UNEP)	Regional Seas Conventions	Marine Protection, Pollution	Coastguards, Ministries of Environment
United Nations Office on Drugs and Crime (UNODC)	Global Maritime Crime Programme (GMCP)	Transnational Organized Crime	Coastguards, Police, Prosecutors, Ministries of interior
International Organization for Migration (IOM)	Immigration and Border Management (IBM) Division	Border Management	Border Guards, Coast Guards, Ministries of Interior & Labour

International Maritime Organization

The International Maritime Organization (IMO) is based in London and regulates maritime transportation activities. It is the oldest United Nations maritime organization dealing with maritime security. The IMO is the guardian of a series of conventions relevant to maritime security, and two of its five committees, the Facilitation Committee (FAL) and the Maritime Safety Committee (MSC), are important venues to identify and discuss maritime security challenges related to ship and port security.

The IMO has discussed issues such as narcotics smuggling or stowaways in the FAL Committee since the late 1960s and addressed piracy since the 1980s, including incident recording and providing guidance to flag States. The IMO assumed a central role in maritime security with the adoption of the International Ship and Port Security Code (ISPS), which was part of the response to international terrorism.[54]

The MSC has discussed maritime security challenges extensively, especially those that directly concern the shipping industry. This includes piracy off the coast of Somalia and in the Gulf of Guinea, the proliferation of irregular migration in the Mediterranean, and sanctions evasion and the rise of a 'parallel' fleet involved in such activities. The MSC has also been instrumental in discussing and regulating the use of private armed guards on board merchant vessels, which became a standard practice in response to piracy off the coast of Somalia.

The IMO works closely with maritime authorities and ministries of transport around the world to ensure compliance with the ISPS and to enhance national maritime security governance structures more generally. As part of this

[54] Eruaga, Osato Anastasia. 2024. The role of the IMO in promoting maritime security, in The Elgar Companion to the Law and Practice of the International Maritime Organization, edited by Laura Carballo Piñeiro and Maximo Q. Mejia Jr, Elgar, 155-177.

capacity building work, the IMO also facilitates regional coordination projects, such as the Djibouti Code of Conduct in the Western Indian Ocean (discussed below). The IMO's capacity-building work is organized in its Technical Cooperation Programme.

Food and Agricultural Organization

The Food and Agricultural organization (FAO) is based in Rome and was created to eliminate hunger and improve nutrition standards and living conditions by increasing agricultural productivity. Mandated to address all aspects of food production, the FAO is the most important agency to address fisheries and aquaculture. The FAO assists States with the regulation of national fisheries and runs the secretariat for Regional Fisheries Monitoring Organizations (RFMOs).[55]

The FAO and the RFMOs are important in maritime security for addressing the challenge of illicit fishing. The FAO offers guidance and capacity-building to address the challenge, while the RFMOs maintain lists of vessels engaged in illicit behaviour. This is important for informing maritime law enforcement operations.

The most crucial vehicle is FAO's International Plan of Action to Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing under which the FAO supports national fisheries authorities and develops methodologies and guidelines for assessing and responding to illicit fishing activities.[56]

United Nations Environment Programme

The United Nations Environment Programme (UNEP) has an essential role in managing 18 regional seas conventions and action plans (see chapter 3.2.2). While these regional arrangements differ in their content and structure, they commonly include the fight against deliberate pollution, search and rescue, salvage, marine heritage protection and cooperation and information-sharing among regional maritime law enforcement agencies.

In supporting these regional mechanisms, UNEP provides technical assistance with a focus on environmental monitoring, restoration, and incident responses. UNEP works closely with environmental regulators and protection agencies, which can include coast guards, but usually not naval forces.

United Nations Office on Drugs and Crime

The United Nations Office on Drugs and Crime (UNODC) runs the most extensive maritime security programme in the United Nations system, with a focus on the prevention of transnational organized crime at sea. The Global Maritime Crime Programme (GMCP) began in 2009 as a small-scale initiative to support the prosecution of Somali piracy suspects in East Africa. It has since expanded to become UNDOC's largest programme with a budget of over USD 230 million, and some 170 personnel based in 26 States with teams focusing on the Indian Ocean, the Atlantic and Pacific Oceans, Latin America and the Caribbean, the Gulf of Aden and the Red Sea, and the Mediterranean and the Black Sea.[57]

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[55] FAO. 2018. Regional Fishery Body Secretariat's Network. Rome: FAO, https://openknowledge.fao.org/handle/20.500.14283/ca0183en.

[56] FAO. 2024. Implementation of the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing 1. Methodologies and indicators for the estimation of the magnitude and impact of illegal, unreported and unregulated fishing: 1.4 Developing and using indicators of performance. Rome. https://openknowledge.fao.org/items/42f9fc79-9292-43cb-919a-1c3eb7d974d6.

[57] Waly, Ghada. 2021. United Nations Security Council High Level Virtual Open Debate "Enhancing Maritime Security: A case for international cooperation". 9 August 2021. https://www.unodc.org/unodc/en/speeches/2021/unsc-maritime-090821.html.

The UNODC provides capacity-building and support for legal reform and prisons. It also trains prosecutors and establishes maritime training centres that conduct training in areas such as boarding or evidence collection. The programme also increasingly offers support for national maritime security strategies, information-sharing and surveillance, and port security. In addition, the UNODC convenes a range of informal regional forums for maritime security professionals.

International Organization for Migration

The International Organization for Migration (IOM) addresses maritime security as a border management problem and aims to facilitate the safe, orderly and regular movement of goods and persons across maritime borders.[58]

Its Immigration and Border Management (IBM) Division supports States in the enhancement of maritime security by providing technical guidance on policy development, legislation, administrative structures and operational systems.

IOM's goal is to both strengthen humanitarian concerns among the States it works with, while enhancing border security the same time.[59]

Inter-agency competition and lack of concerted actions.

United Nations agencies are encouraged to coordinate their projects and activities through the 'Delivering as One' approach, facilitated by the United Nations System Chief Executives Board for Coordination. Yet this will be difficult to achieve without a central information-sharing and coordination body dedicated to maritime security and is therefore dependent on individual initiatives by national and regional offices.

In some cases, important coordination attempts have been made through ad hoc donor conferences – including one led by the UNODC for the Gulf of Guinea region to harmonize capacity-building[60] – through informal contact groups (such as the Contact Group on Piracy off the Coast of Somalia), or through mechanisms such as the Djibouti Code of Conduct facilitated by the IMO (reviewed below).

Stronger coordination is vital to ensure that United Nations bodies do not compete over donor funding for projects and to avoid duplication and overlap that can arise if the same issue is addressed under different mandates. Coordination at strategic and headquarters levels moreover needs to take place before programming and implementation in order to ensure joint learning, the exchange of best practices and work towards common standards for maritime security.

3.1.7. Other United Nations bodies and international organizations

A range of other United Nations bodies are also actively engaged in ocean work, as we detail in figure 3. These organizations are important considering the link between maritime security and the other pillars of the United Nations, but they have not set up dedicated maritime security programmes. However, they often engage with maritime security challenges on an

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[58] International Organization for Migration. 2024. Maritime Security and Border Management, available at https://www.iom.int/maritime-security-and-border-management.

[59] Frowd, Philippe M. 2017. Developmental Borderwork and the International Organization for Migration, Journal of Ethnic and Migration Studies 44 (10): 1656–72.

[60] Asamoah, Humphrey. 2020. How to improve the delivery of capacity building? Insights from a coordination meeting, SafeSeas Commentary, https://www.safeseas.net/how-to-improve-the-delivery-of-capacity-building-insights-from-a-coordination-meeting/.

ad hoc basis. Entities such as the World Bank, for instance, have produced studies on the economic costs of piracy, or on the economic impact of shipping disruptions.

FIGURE 3.

United Nations-related bodies and programmes with relevance to maritime security

AGENCY	FOCUS
International Atomic Energy Agency (IAEA)	Energy, nuclear waste disposal at sea
International Labour Organization (ILO)	Safety, fair treatment, abandonment and working and living conditions of seafarers, including fishers
International Mobile Satellite Organization (IMSO)	Oversight of Global Maritime Distress and Safety System
International Telecommunication Union (ITU)	Underwater communication infrastructure
United Nations Conference on Trade and Development (UNCTAD)	Analysis of maritime transport sector and shipping
United Nations Educational, Scientific and Cultural Organization (UNESCO)	Oceanography, underwater maritime heritage
United Nations Framework Convention on Climate Change (UNFCCC)	Ocean and climate change
United Nations High Commissioner for Refugees (UNHCR)	Protection of refugees at sea
United Nations Human Settlements Programme (UN-Habitat)	Protection of coastal populations, including e.g. mitigation of sea level rise
United Nations Industrial Development Organization (UNIDO)	Port infrastructure, blue economy strategies and human security
United Nations Institute for Training and Research (UNITAR)	Short courses and educational programmes on maritime security
United Nations Interregional Crime and Justice Research Institute (UNICRI)	Capacity-building on blue crime and terrorism
United Nations Mine Action Service (UNMAS)	Clearance of sea mines
United Nations Office for Disaster Risk Reduction (UNDRR)	Frameworks for disaster risk mitigation and resilience, incl. shipping disasters, critical infrastructure resilience.
United Nations Regional Economic Commissions	Regional blue economy strategies
UN-Energy	Coordinates United Nations energy activities, including offshore energy and renewables, such as wind and solar
World Bank	Funding for blue economy projects, research
World Health Organization (WHO)	Health issues related to the oceans, e.g. pollution
World Meteorological Organization (WMO)	Weather data for maritime activities

Several important bodies in ocean governance are not part of the United Nations system but have observer status. These can have key functions in maritime security. For example, the International Hydrographic Office (IHO) certifies charts for navigation and hence facilitates marine safety. Figure 4 lists the most important entities and their role.

FIGURE 4.

International Organizations relevant to maritime security, which are not part of the United Nations system

AGENCY	FOCUS
International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA)	Standards for aids to navigation external to ships
International Cable Protection Committee (ICPC)	Guidelines for subsea cable protection
International Hydrographic Office (IHO)	Certification and standardization of navigational charts
International Organization for Standardization (ISO)	Standardization of port security (ISO20858) and supply chain security (ISO 27000), incl. private security
International Union for Conservation and Nature (IUCN)	Marine protection programmes, endangered species
International Criminal Police Organization (INTERPOL)	Information-sharing and exercises on blue crimes
International Organization of Airport and Seaport Police (INTERPORTPOLICE)	Information-sharing and guidance on port security
International Whaling Commission (IWC)	Regulates whaling
World Customs Organization (WCO)	Standardization of container security and border control

3.2. Regional governance mechanisms

The United Nations lacks a coherent framework for maritime security aimed at ensuring the consistency of technical assistance and uniform norms and standards. To fill this gap, regional organizations have advanced comprehensive strategies and policies for their member States.

In particular, the European Union has developed a comprehensive maritime security strategy and institutions. It also engages with international military forces abroad and funds significant international capacity-building initiatives. Likewise, organizations such as the African Union or the Association of Southeast Asian Nations have developed significant policies, though further work is required to follow through on these.

Regional seas conventions and RFMO address specific aspects of regional maritime security challenges, but do not provide comprehensive outlooks.

To compensate for such deficiencies, several regions have advanced informal frameworks for maritime security cooperation based on information-sharing centres, regular professional forums, and mechanisms such as Contact Groups – many of which are supported by United

Nations agencies and donor funding. However, these frameworks often remain limited because they lack a solid legal or institutional basis. They can also lead to a diffuse set up of overlapping and competing regional constructs.

3.2.1. Regional organizations

Regional organizations have identified maritime security as an important problem and developed strategies and services for their members to address it.

The European Union (EU) has developed the densest forms of cooperation. It operates three agencies with maritime security functions that have mandates beyond territorial waters: the European Maritime Safety Agency, the European Fisheries Control Agency and the European Border and Coast Guard Agency (known as Frontex). It also runs a comprehensive information-sharing system for its member States. With its declared goal to be a global maritime security provider, the EU runs naval maritime security operations and capacity-building missions in the Gulf of Guinea and the Western Indian Ocean. The EU also has a dedicated maritime security strategy and supports maritime security globally under its international ocean governance policy, focusing on regional seas basins but also the United Nations.[61]

Regional organizations have identified **maritime security as an important problem** and developed strategies and services for their members to address it.

The African Union has incorporated maritime security through two documents:[62] (1) the 2050 African Integrated Maritime Strategy and (2) the legally binding African Charter on Maritime Security and Safety and Development in Africa of 2016 (known as Lomé Charter) which has been signed by 35 States, but only ratified by 3 and hence has not yet entered into force. All the subsidiary regional organizations have addressed maritime security in one way or the other.

The Association of Southeast Asian Nations runs a series of dialogues and formats to strengthen maritime security cooperation.[63] However, these programmes have not yet led to the establishment of maritime security agencies and many responses are handled through informal layers of cooperation or mini-lateral programmes. An example is the Malacca Straits Patrol under which Indonesia, Malaysia, and Singapore coordinate law enforcement and monitoring in the straits.[64]

The Pacific Island Forum has developed a series of strategies and plans under its ocean

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[61] Bueger, Christian and Timothy Edmunds. 2023. The European Union's quest to become a global maritime security provider, Naval War College Review 76(2): article 6; Riddervold, Marianne. 2018. The Maritime Turn in EU Foreign and Security Policies: Aims, Actors and Mechanisms of Integration, Cham: Palgrave MacMillan.

[62] Brits, Pieter and Michelle Nel. 2018. African maritime security and the Lomé Charter: Reality or dream? African Security Review 27 (3-4): 226-244.

[63] Edwards, Scott. 2022. Fragmentation, Complexity and Cooperation: Understanding Southeast Asia's Maritime Security Governance, Contemporary Southeast Asia 44 (1): 87-121.

[64] Ikrami, Hadyu. 2018. Sulu-Sulawesi Seas Patrol: Lessons from the Malacca Straits Patrol and Other Similar Cooperative Frameworks, The International Journal of Marine and Coastal Law 33: 799–826.

policies and general security ambitions.[65] Most notably, it operates a shared fisheries agency, the Forum Fisheries Agency, which closely monitors illicit fishing activities in the South Pacific and organizes joined operations.

Other regional organizations that have developed maritime security programmes include the Indian Ocean Commission, which operates an EU-funded information-sharing centre and a regional coordination centre for operations under a programme known as MASE;[66] the Indian Ocean Rim Association, which has a working group devoted to the subject;[67] and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation, which develops a maritime security strategy.[68] The Arctic Council, the Council of the Baltic Sea States, and the Union for the Mediterranean focus on maritime safety, search and rescue and marine protection.

3.2.2. Regional seas conventions, fisheries organizations and zones of peace

A set of conventions and organizations provide regional ocean governance structures. These include 18 regional seas conventions under the auspices of UNEP, and 17 RFMOs supported by FAO. Focusing on large maritime ecosystems, these organizations are important in going beyond the terrestrial boundaries of regional organizations and offer means of cooperation among neighbouring States, ocean users and international organizations. However, the high hopes of the 1990s[69] that these formal legal forums of regional seas cooperation could integrate maritime security on their agenda and build links to the security and disarmament concerns of maritime 'Zones of Peace' declarations never came to fruition.

Regional Seas Conventions

Regional seas conventions started to be negotiated in the 1970s to complement the universal aspirations of the UNCLOS negotiations. Recognizing that the challenges across regional seas environments differ substantially, and that regional States have divergent priorities for closer cooperation beyond UNCLOS, the approach was introduced to provide more flexible forms for legally binding agreements corresponding to the needs of States.

Since their establishment in 1974, 146 States have joined 18 regional seas conventions and related regional arrangements.[70] These do not explicitly address conventional peace and

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[65] Bergin, Anthony. 2023. Strengthening Law and Order at Sea for the Blue Pacific, in Maritime Cooperation and Security in the Indo-Pacific region, edited by John F. Bradford, Jane Chan, Stuart Kaye, Clive Schofield and Geoffrey Till, Leiden & Boston: Brill Nijhoff, 204-219.

[66] Bueger, Christian and Jan Stockbruegger. 2022. Maritime security and the Western Indian Ocean's militarisation dilemma, African Security Review 31 (2): 195-210.

[67] Weligamage, Theshani. 2023. Countering Maritime Crime in the Indian Ocean: Evaluating the Effectiveness of IORA, Policy Paper, Lakshman Kadirgamar Institute of International Relations and Strategic Studies (LKI), https://lki.lk/publication/countering-maritime-crime-in-the-indian-ocean-evaluating-the-effectiveness-of-iora/.

[68] Khurana, GS. 2018. BIMSTEC and maritime security: Issues, imperatives and the way ahead. New Delhi: National Maritime Foundation, https://maritimeindia.org/wp-content/uploads/2020/05/BIMSTEC-and-maritime-security-issues-imperatives-and-way-ahead.pdf.

[69] Borgese, Elizabeth Mann. 1998. Oceanic Circle: Governing the Seas as a Global Resource. Tokyo, New York, Paris: United Nations University Press; Borgese, Elizabeth Mann (ed.). 1997. Peace in the Oceans. Ocean Governance and the Agenda for Peace. The Proceedings of Pacem in Maribus XXIII, Costa Rica, 3-7 December 1995. UNESCO.

[70] United Nations Environmental Programme. 2022. Contributions of Regional Seas Conventions and Action Plans to a Healthy Ocean. Nairobi. https://wedocs.unep.org/bitstream/handle/20.500.11822/38622/Regional_Seas_Conventions.pdf.

security concerns, such as maritime disputes, disarmament, or counter-terrorism. However, under a comprehensive understanding of maritime security, they contain important provisions, including monitoring of the marine environment, environmental crimes, such as deliberate pollution, or strengthening cooperation and the interoperability of coast guards and maritime law enforcement agencies.

Regional Fisheries Management Organizations

The main purpose of RFMOs is to monitor fish stocks and define fishing quotas in regional waters beyond national jurisdictions but including the boundaries of Exclusive Economic Zones.[71] These joint management approaches, supported by the FAO, are limited to members of the RFMOs and place enforcement responsibilities on flag States. RFMOs play a minor role in addressing fisheries crimes but maintain lists of vessels known to be or suspected of being engaged in such activities.[72]

Other noteworthy cooperative regional mechanisms

A range of other regional mechanisms are noteworthy for their ambition to provide maritime security in specific maritime zones or for their experimental characteristics.

The Cooperative Mechanism on Safety of Navigation and Environment Protection in the Straits of Malacca and Singapore (known as the Cooperative Mechanism) promotes dialogue and facilitates close cooperation among the littoral States, user States, shipping industries and other stakeholders in line with article 43 of UNCLOS on safety in international straits.[73]

In South-East Asia, increasing levels of piracy led to a formal treaty that established an institutional agreement to monitor the problem. The Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia has established a secretariat and an information-sharing centre in Singapore.[74] The main function of the centre is to compile piracy reports and issues alerts for the shipping industry.

During the Cold War, maritime zones of peace were declared and endorsed by the General Assembly for the Indian Ocean (1971), the Mediterranean (1981) and the South Atlantic (1986).[75] These were meant to limit proliferation of arms and limit geopolitical competition. Since the end of the Cold War, the zones have been frequently evoked rhetorically, but only the Zone of Peace and Cooperation of the South Atlantic (known as ZOPACAS) developed a programme of action. Established in 1986 by resolution 41/11, the agreement was revitalized by Brazil in 2019 to provide a framework for maritime security cooperation in the South Atlantic.[76]

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[71] Ewell, Christopher, John Hocevar, Elizabeth Mitchell, Samantha Snowden, and Jennifer Jacquet. 2020. An evaluation of Regional Fisheries Management Organization at-sea compliance monitoring and observer programs, Marine Policy 115: 103842.

[72] van der Marel, Eva R. and Mercedes Rosello. 2024. IUU Fishing Vessel Listing Cooperation and Current RFMO Practices, in International Fisheries Law, edited by Bjørn Kunoy, Tomas Heidar, Constantinos Yiallourides, London: Routledge, 125–46.

[73] Ba, Alice D. 2020. Governing the Safety and Security of the Malacca Strait, in Non-State Actors and Transnational Governance in Southeast Asia, edited by Shaun Breslin, Helen E.S. Nesadurai, London: Routledge. 66-91.

[74] Seta, Makoto. 2021. The Asian Contribution to the Development of International Law: Focusing on the ReCAAP, in Asian Yearbook of International Law, Volume 25 (2019), edited by Seokwoo Lee and Hee Eun Lee. Leiden: Brill Nijhoff, 65–83.

[75] For an overview of proposals for zones of peace and an evaluation of their success and legal status, see Macalister-Smith, P. 2009. Zones of Peace. In Max Planck Encyclopedia of Public International Law. Oxford: Oxford University Press.

[76] Abdenur, Adriana Erthal, Frank Mattheis, and Pedro Seabra. 2016. An Ocean for the Global South: Brazil and the Zone of Peace and Cooperation in the South Atlantic, Cambridge Review of International Affairs 29 (3): 1112–31.

3.2.3. Informal regional cooperation agreements

Informal regional cooperation is characterized by pragmatic and often experimental governance, usually without a legally binding and formally ratified treaty or a standing administrative body. Many informal bodies, however, rely on different forms of soft law, such as declarations or memorandums of understanding and have terms of reference or provisional administrative structures.

Regional Cooperation supported by IMO

The IMO has facilitated regional coordination in maritime security, with a focus on information-sharing, shared best practices and interoperability, and joint regional capacity-building activities. These activities have led to two important regional networks that operate on the basis of memoranda of understandings and declarations.

In West Africa, the IMO facilitates the Code of Conduct concerning the Repression of Piracy, Armed Robbery against Ships and Illicit Maritime Activity in West and Central Africa, known as Yaoundé Code of Conduct.[77] This is a cooperation between three African regional economic organizations – the Economic Community of West African States, the Economic Community of Central African States, and the Gulf of Guinea Commission.

In the Western Indian Ocean, the IMO facilitates a format that includes Eastern and Southern African States as well as the Arab Peninsula. This is known as the Djibouti Code of Conduct.[78] The Code initially focused exclusively on piracy. However, it was later amended to cover other forms of maritime insecurity (known as the Jeddah Amendments).

Working with maritime authorities and ministries of transport, both formats organize a regular programme of training activities and high-level meetings with senior officials from the authorities and ministries. Efforts are under way to give these mechanisms a formal legal basis.

Issue-specific formats

A plethora of additional informal formats was developed to deal with specific regional maritime security challenges.

For example, in the Western Indian Ocean two formats – the Shared Awareness and Deconfliction forum and the Contact Group on Piracy off the Coast of Somalia – were instrumental in addressing piracy, leading to the end of the piracy crisis in 2012.[79] Both formats continue to exist, albeit as looser formations with fewer regular meetings. The Contact Group broadened its focus to address all forms of maritime crimes and changed its name to Contact Group on Illicit Maritime Activities.[80]

To address piracy in the Gulf Guinea, a new mechanism known as the Group of Friends of the Gulf of Guinea was created in 2013 to

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[77] IMO. https://www.imo.org/en/OurWork/Security/Pages/West-and-Central-Africa.aspx; Yücel, Hüseyin. 2021. Sovereignty and Transnational Cooperation in the Gulf of Guinea: How a Network Approach Can Strengthen the Yaoundé Architecture, Scandinavian Journal of Military Studies 4 (1): 146–57.

[78] DCoC. https://dcoc.org/about-us/; Bueger, Christian and Jan Stockbruegger. 2022. Maritime security and the Western Indian Ocean's militarisation dilemma, African Security Review 31 (2): 195-210.

[79] Bueger, Christian and Jan Stockbruegger. 2022. Maritime security and the Western Indian Ocean's militarisation dilemma, African Security Review 31 (2): 195-210.

[80] Bueger, Christian. 2024. Who secures the Western Indian Ocean? The need for strategic dialogue, The MOC, 19 September 2024. https://centerformaritimestrategy.org/publications/who-secures-the-western-indian-ocean-the-need-for-strategic-dialogue/.

organize military responses and capacity-building and to prepare Security Council discussions on the matter. [81]

Other noteworthy formats

Maritime security has become a pervasive feature of several informal regional mini-lateral formats. The Group of Seven, for example, has regularly discussed maritime security and issued statements concerning attacks on merchant shipping and other maritime security threats and issues.[82]

Initiatives such as the Quadrilateral Security Dialogue between Australia, India, Japan, and the United States (known as the Quad)[83] or the trilateral security partnership between Australia, the United Kingdom, and the United States (known as AUKUS)[84] have significant maritime security elements with a focus on the Indo-Pacific.

3.2.4. The global network of maritime domain awareness centres

Maritime domain awareness (MDA) initiatives from a second type of informal regional agreement. MDA is about monitoring and surveilling activities at sea, fusing data from different sources and identifying and tracking suspicious vessels, but also uncovering trends, such as patterns of piracy and smuggling.[85] Reports from MDA centres facilitate intelligence-led patrolling and multi-national security operations. Yet they are also influential in informing debates and in developing strategies and policies.

Regional MDA centres have been developed since the early 2000s when the Italian navy initiated a surveillance and information-sharing system for the Mediterranean. Since then, MDA centres have been launched in Singapore, focusing on South-East Asia, in Madagascar for the Western Indian Ocean, in India for the Indian Ocean, and in Peru for the South Pacific.[86] NATO and the EU have established similar initiatives for the North Atlantic. The South Atlantic is currently the only blind spot in this global network of regional MDA centres.

While differing in structure, most regional MDA centres are based on bilateral agreements with the host State and tend not to be formally linked to regional organizations (except those established by the EU and NATO). Extra-regional States also participate in many regional MDA centres. The core function of these centres is in developing a common operating picture for coordinating incident responses, developing

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[81] UKFCO. 2022. Policy paper. Group of Friends of the Gulf of Guinea (G7 ++ FoGG): 2nd Ministerial Session 2021, final report, 16 March 2022, https://www.gov.uk/government/publications/group-of-friends-of-the-gulf-of-guinea-g7-fogg-2nd-ministerial-session-2021-final-report.

[82] Bueger, Christian and Timothy Edmunds. 2024. Understanding Maritime Security. Oxford: Oxford University Press.

[83] Corben, Tom et al. 2023. Bolstering the QUAD: The Case for a Collective Approach to Maritime Security. Sydney: United States Studies Centre.

[84] Mckenzie, Simon, and Eve Massingham. 2023. AUKUS: The Regulation of the Ocean and the Legal Dangers of Working Together, Ocean Yearbook 37: 136–70.

[85] Often also referred to as Maritime Situational Awareness, which refers to the narrower task of supporting operations at sea, both terms are however often used interchangeably. Here 'domain awareness' is preferred as the more encompassing term of producing knowledge about the sea. See Brewster, David. 2018. Give Light, and the Darkness Will Disappear: Australia's Quest for Maritime Domain Awareness in the Indian Ocean, Journal of the Indian Ocean Region 14(3): 296–314.

[86] Bueger, Christian. 2020. A glue that withstands heat? The promise and perils of maritime domain awareness, in Maritime Security: Counter-Terrorism Lessons from Maritime Piracy and Narcotics Interdiction, edited by Edward R. Lucas, Samuel Rivera-Paez, Thomas Crosbie and Felix Falck Jensen, IOS Press, 235 – 245.

regular regional statistics, and facilitating communication among participating maritime security agencies and the maritime industries.

3.2.5. Professional forums of navies, coast guards and prosecutors

Other multi-national forums in which maritime security is discussed regularly are emerging rapidly and indicate there is demand for a sustained discussion and cooperative mechanisms on the topic. These forums have various degrees of institutionalization.

Navy-to-navy forums include the Western Pacific Naval Symposium and the Indian Ocean Naval Symposium. These are State-driven, membership-based arrangements comprising of a biannual conference with working groups that focus on issues such as humanitarian and disaster relief, information-sharing, joined training, interoperability, and maritime crimes. The Western Pacific Naval Symposium, for instance, was inaugurated in 1988 and today has 18 member States and four observers. It has developed a series of handbooks and standardized guidelines, including a Code for Unplanned Encounters at Sea.[87]

Several forums coordinate the activities of agencies with coast guard functions, which for some States includes military organizations. These coast guard forums focus on search and rescue and maritime safety, but also often discuss maritime crimes, such as smuggling. Coast guard coordination forums are usually linked to and supported by regional organizations. Examples include the European Coast Guard Function Forum, the Arctic Coast Guard Forum, the North Atlantic Coast Guard Forum, and the African Coast Guard Function Forum, which was proposed in 2023.

The UNODC has initiated a series of forums under its GMCP for professionals working on maritime crimes. These forums focus on prosecutors and maritime law enforcement agencies. They tend to depend on funding and organization from the UNODC and thus often lack formalized features such as terms of reference, membership criteria or provisions for chairpersons and secretariats. Examples include the Indian Ocean Forum on Maritime Crime, the Southern Route Partnership, and the Contact Group on Maritime Crime in the Sulu and Celebes Seas.

3.3. The landscape of non-governmental organizations

The spectrum of non-governmental organizations (NGOs), including civil society organizations, science-based organizations, and philanthropies that engage in ocean governance is considerable.[88] However, the number of organizations directly engaged in maritime security is more limited.

Most NGOs with a maritime remit work on specific issues, such as environmental crimes, fisheries crimes and irregular migration. Examples of globally operating NGOs include the Environmental Justice Foundation, Greenpeace, the World Wildlife Fund for Nature, and SkyTruth, which address environmental crimes at sea; and Global Fishing Watch, Oceana, Ocean Conservancy, Pew Charitable Trusts, The Sea Shepherd Conservation Society, Spyglass, or Too Big To Ignore, which address fisheries crimes. Irregular migration is addressed by NGOs such as the International

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[87] Western Pacific Naval Symposium, https://www.navy.gov.au/media-room/publications/semaphore-14-06.

[88] For instance, in the addition to the NGOs accredited to ECOSOC, 174 organizations were accredited to attend the 2022 UN Ocean conference, see https://sustainabledevelopment.un.org/content/documents/253312020_Ocean_Conference_Frst_Round_Final_List_Special_Accreditation.pdf.

Red Cross and Red Crescent Movement, Médecins Sans Frontières, Sea Watch and SOS Méditerranée. A strong human rights focus is pursued by the UK-based NGO Human Rights at Sea, while the Maritime Anti-Corruption Network focuses on reducing corruption in ports. Organizations such as the Transnational Initiative against Organized Crime address crimes more broadly, including maritime ones.

Several science-based organizations are vital in driving the maritime security debate. Cross-cutting and comprehensive research is carried out by research networks such as the Center for International Maritime Security, SafeSeas and the Yokosuka Council on Asia-Pacific Studies. Internationally active research institutions include the US NGO Stable Seas, which is developing a global maritime security index, the Korean Institute for Maritime Strategy, India's National Maritime Foundation and Observer Research Foundation, Sri Lanka's Pathfinder Foundation, the S. Rajaratnam School of International Studies in Singapore, the Australian National Centre for Ocean Resources & Security, the Institute for Security Studies in South Africa, as well as the IMO's International Maritime Law Institute and the World Maritime University.

Other think tanks and universities only address maritime security sporadically and most often do so as part of their regional programmes, or with a focus on military matters. For example, the Carnegie Endowment for International Peace addresses maritime security through programmes on the Baltic Sea, the Indian Ocean and the South China Sea. Institutes such as the International Institute for Security Studies or the Stockholm International Peace Research Institute have strong research areas on naval affairs but tend not to engage in maritime security comprehensively.

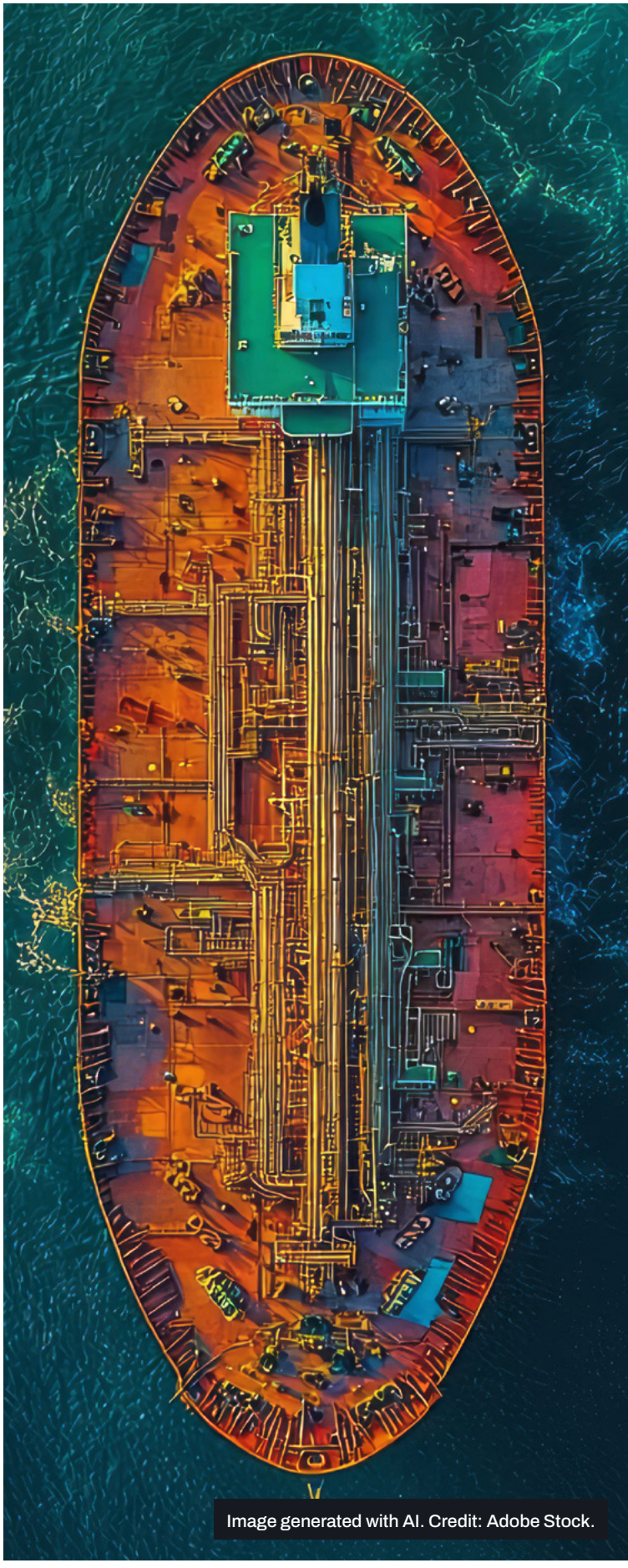

Image generated with AI. Credit: Adobe Stock.

3.4. The role of the industry and private security

The maritime transport industry has been obliged to implement security measures since the introduction of counter-terrorism initiatives such as the IMO's ISPS. These include contracting and employing dedicated security personnel.[89]

Self-protective measures by the shipping and offshore energy industries have become common. Piracy off the coast of Somalia between 2008 and 2012 led to extensive work in the industry to define best management practices for vessels transiting high-risk areas. First introduced in 2008, guidance documents for regional high-risk areas, including dedicated maritime security charts, have become a common practice. Piracy off the coast of Somalia also led to the creation of new standards for ship managers to employ private security advisors and armed guards on-board high-risk routes.[90]

Maritime industry associations and the marine insurance industry are important sources of regulation by providing standard contracts and guidelines for maritime cyber security and other challenges.[91] The industry also runs reporting centres such as the International Maritime Bureau, which records piracy incidents and alerts vessels and shipping companies operating in dangerous areas.[92]

Many companies rely on in-house security services, but a growing number of private companies also provide specialized protection and related services, including intelligence, trend analysis, and early warning – often commercialized versions of the public information available through MDA centres (discussed above). For example, several companies provide data services such as satellite-based ship tracking data or digital MDA platforms for data fusion, communications and analysis. Others provide on-board security and protection services including armed guards on vessels.

3.5. Conclusion: the risks of fragmentation

Maritime security is addressed through a complex system of formal and informal governance arrangements and organizations. However, the limitations of this system are increasingly apparent.

> This fragmentation risks **undermining the development of effective responses** to maritime insecurity.

The Security Council has been an important driver of the global response to maritime security challenges, in areas such as piracy or attacks on shipping and infrastructure. The Security Council's focus is, however, selective and focuses on high-level emergencies.

Several United Nations agencies address specific challenges of maritime security with a

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[89] Mensah, Thomas A. 2003. The Place of the ISPS Code in the Legal International Regime For the Security of International Shipping, WMU Journal of Maritime Affairs 3 (1): 17–30.

[90] Stockbruegger, Jan. 2021. US Strategy and the Rise of Private Maritime Security, Security Studies 30 (4): 578–602.

[91] Bueger, Christian and Timothy Edmunds. 2024. Understanding Maritime Security. Oxford: Oxford University Press.

[92] Bueger, Christian. 2015. From Dusk to Dawn? Maritime Domain Awareness in Southeast Asia, Contemporary Southeast Asia 17 (2): 157-182.

'big five' of organizations running extensive capacity-building programmes (IMO, FAO, UNEP, IOM, UNODC). These agencies are encouraged to coordinate their activities under the One United Nations initiative. Yet UN-Oceans – the coordination mechanism of the United Nations for the sea – has not yet addressed maritime security directly, and there is no alternative mechanism that can fill this gap. This runs the risk of inter-agency competition and duplication, while important challenges remain unaddressed.

The growing importance assigned to maritime security in the light of the acceleration of maritime activities and our increasingly dependency on the oceans has led to a plethora of bilateral and regional activities, many of which are informal rather than treaty based. Also, a growing range of NGOs and industry bodies is active in the maritime security domain.

Detailed assessments of which United Nations agencies address which challenges in which countries and regional seas and how much they complement bilateral, regional and informal mechanisms have not been conducted.

In summary, this analysis suggests that global maritime security lacks coordination and a comprehensive strategy comparable to other fields of international activity such as health or terrorism. This fragmentation risks undermining the development of effective responses to maritime insecurity.

UN Peacekeepers Guard against Piracy on DRC Lake, October 2012. Credit: UN Photo/Sylvain Liechti.

4. The established maritime security agenda and the role of the United Nations system

This chapter reviews the challenges that have defined the maritime security agenda since the 1990s. These are matters that are for the most part addressed within the current global governance system of maritime security, albeit in a manner that could be strengthened significantly.

They include issues of armed conflict, peacebuilding and security sector reform, maritime terrorism, maritime piracy and smuggling, and the diversity of environmental crimes at sea, as well as the responses to them.

A commonly accepted set of tools for maritime security has been developed in response to these challenges. These are increasingly standardized across countries and regions and provide important mechanisms for addressing insecurities at sea. However, they require further attention and development in the face of ongoing problems including piracy and smuggling, and the emerging challenges reviewed in chapter 5.

> Intra-State conflicts and civil wars often have a **direct or indirect maritime dimension.**

4.1. Civil wars, armed conflict and the sea

Intra-State conflicts and civil wars often have a direct or indirect maritime dimension. In such cases they are dealt with under the United Nations peace and security architecture. Key issues include direct military action by warring parties at or from the sea, and the direct targeting of international shipping and other maritime activities. Some combatant groups use the sea to fund and sustain their war efforts, for example by engaging in blue crimes such as smuggling or piracy. Finally, instability caused by civil war can create conditions in which a wide variety of maritime crimes are able to flourish.

4.1.1. Military action at sea

Several past and ongoing civil conflicts have involved direct military actions at sea.

The Sri Lankan civil war of 1983–2009 is an important example.[93] One of the conflicting parties, the Liberation Tigers of Tamil Eelam, also known as the Tamil Tigers, operated a separate maritime branch. The so-called Sea Tigers attacked ships of the Sri Lankan navy, using speedboats to conduct suicide bombings with considerable success. The group also used divers, submersibles and mines, and targeted merchant vessels as well as military ones.

More recently, during the civil war in Yemen, Houthi forces have carried out direct attacks at sea.[94] These have included missile and drone strikes against ships in port and at sea, raids on the maritime supply lines of the Yemini government and its allies, and the use of fast boats

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[93] Povlock, Paul A. 2011. A Guerilla War At Sea: The Sri Lankan Civil War, *Small Wars Journal*, September 2011, https://smallwarsjournal.com/jrnl/art/a-guerilla-war-at-sea-the-sri-lankan-civil-war.

[94] Devendra, Nagapushpa Nagarajan. 2018. Brewing Yemen Civil War and Its Implication on International Maritime Security, Journal of Maritime Research 15 (1): 15–19.

armed with rocket propelled grenades and mines to attack maritime targets. The attacks have also extended to neighbouring Saudi Arabia, including drone strikes on the port of Jeddah in 2020 and 2021. In 2023, Houthi maritime operations were expanded to include strikes on international shipping.[95]

Since 2022, ports and maritime supply lines have also been targeted in the context of the war in Ukraine.[96] Insurgent violence has also recently spilled over into the maritime domain in both south-eastern Nigeria and Mozambique.[97]

These examples imply the need to closely integrate the maritime domain into responses to armed conflict, including humanitarian assistance, conflict resolution and peacemaking efforts. In Yemen, the Security Council has repeatedly called for the maintenance of safe access to ports and the security of maritime supply lines to enable the continued supply of humanitarian relief and food aid.[98] In Ukraine, the Initiative on the Safe Transportation of Grain and Foodstuffs from Ukrainian ports of 2022–2023 – also called the Black Sea Grain Initiative – was established under United Nations auspices to facilitate the continued export of grain shipments from Ukraine for the purposes of ensuring global food security.[99] The UNODC's Global Maritime Crime Programme has also run capacity-building and support activities with both countries.

4.1.2. Wider destabilizing effects and responses

The maritime domain plays other roles in civil wars too. Maritime supply lines sustain armed conflicts because they are used in the licit and illicit trade in arms and military equipment, as well as food and energy supplies.

This issue has long been recognized and addressed through the United Nations sanctions regime. For example, the Security Council has imposed an arms embargo and restrictions on the sale of illicit oil from Libya, in response to ongoing violence and instability in the country since 2010.[100] These resolutions are not exclusively concerned with maritime routes though often include an explicit maritime dimension. For example, resolution 2046 (2014) authorizes Member States to inspect vessels on the high seas in pursuit of these aims.

The illicit maritime economy can provide an important source of revenue for non-State armed groups and extremist organizations. For example, the group known as the Islamic State in Iraq and the Levant has generated revenues from oil smuggling and the illicit trade in narcotics.[101] The Abu Sayyaf group in the Philippines

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[95] Denamiel, Thibault et.al. 2024. The Global Economic Consequences of the Attacks on Red Sea Shipping Lanes. Center for Strategic and International Studies, 22 January 2024, https://www.csis.org/analysis/global-economic-consequences-attacks-red-sea-shipping-lanes.

[96] Kormych, Borys and Tetyana Malyarenko. 2023. From gray zone to conventional warfare: the Russia-Ukraine conflict in the Black Sea, *Small Wars and Insurgencies* 37 (7): 1235-1270.

[97] David Brewster. 2021. The Mozambique Channel is the next security hotspot, The Interpreter, 19 March 2021, https://www.sadf.eu/wp-content/uploads/2021/05/iop_brewster_mozambique.pdf.

[98] See for example UNSCR 2216 (2015), 2722 (2024).

[99] United Nations, The Black Sea Grain Initiative: What it is, and why it's important for the world, UN News, 16 September 2022, https://news.un.org/en/story/2022/09/1126811.

[100] UNSCR 1970 (2011), 1973 (2011).

[101] Le Billon, Philippe. 2023. Oil and the Islamic State: Revisiting 'Resource Wars' Arguments in Light of ISIS Operations and State-Making Attempts, Studies in Conflict & Terrorism 46 (8): 1–23.

engaged in kidnap for ransom piracy in the Sulu and Celebes seas between 2016–2020 for similar reasons.[102] The Al-Shabab group operating in Somalia has been implicated in the smuggling of charcoal and other illicit goods in the Western Indian Ocean,[103] and indeed has been subject to targeted sanctions including a charcoal ban by the Security Council since 2012.[104]

Finally, conflict and instability in a particular country or region can lead to wider patterns of maritime insecurity. This may be because conflict and instability create new opportunities for maritime criminals such as arms smugglers and people traffickers. It might also be because weakened law enforcement and criminal justice capacities are conducive to a more generally permissive environment in which blue crimes and other maritime insecurities can flourish. This again points to the importance of incorporating maritime considerations into peacebuilding activities, in ways further discussed below.

4.2. Peacebuilding and maritime security

Conflicts on land can undermine the capacity of States to protect their maritime rights and territories by diverting attention and resources from maritime security into war-related activities, and by weakening institutions such as coast guards and maritime police and criminal justice systems.

This can lead to increased predation by outside actors such as illicit fishing vessels, the collapse of legitimate maritime economic activities such as fishing or tourism, and to the creation an environment in which blue crimes such as piracy and smuggling can thrive. In turn, insecurity at sea can further undermine security and State capacity on land. For these reasons, maritime security is an essential part of peacebuilding in conflict-afflicted coastal States.

While these connections between armed conflict, maritime security and peacebuilding have been recognized since the 1990s at least,[105] it was only in the late-2000s in Somalia that a dedicated focus on maritime security issues was incorporated into wider peacebuilding efforts.

United Nations agencies including the IMO and UNODC engaged in maritime security capacity-building in the country, and, in 2009, a Contact Group on Piracy off the Coast of Somalia was established in line with Security Council resolution 1851 to coordinate international efforts in this area (see chapter 3). These included initiatives aimed at strengthening the capacity of the Somali government and its constituent States to combat piracy and other forms of maritime insecurity in their waters.

Since then, the Security Council has recurrently stressed the need for maritime security sector reform in its resolutions on Somalia, Libya, and Guinea-Bissau, as well as on the

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[102] Curran, Meghan et al. 2020. Violence at Sea: How Terrorists, Insurgents, and Other Extremists Exploit the Maritime Domain, One Earth Future Foundation & Stable Seas, https://www.stableseas.org/post/violence-at-sea-how-terrorists-insurgents-and-other-extremists-exploit-the-maritime-domain.

[103] Petrich, Katharine. 2022. Cows, Charcoal, and Cocaine: Al-Shabaab's Criminal Activities in the Horn of Africa, Studies in Conflict & Terrorism 45 (5–6): 479–500.

[104] See most recently UNSCR 2713 (2023).

[105] Pugh, Michael. 1994. Maritime Security and Peacekeeping: A Framework for United Nations Operations. Manchester: Manchester University Press.

situation in the Gulf of Guinea.[106] The UNODC has active maritime security capacity-building programmes in numerous conflict-afflicted countries, including Libya, Mozambique, the Sudan, and Yemen. However, many peacebuilding programmes still pay only scant attention to maritime security.

Where specific initiatives on maritime security do exist, these are often stand-alone initiatives that are disconnected from wider peacebuilding efforts. Even in the Somali case above, for example, there was significant resistance to expanding the mandate of capacity-building to address the root causes of maritime security beyond the counter-piracy effort.[107] Similarly, the Peacebuilding Commission has not addressed the maritime domain systematically, though recognized its importance in a one-off meeting on peacebuilding in the Gulf of Guinea in May 2023 (see chapter 3).

4.3. Maritime terrorism

Maritime terrorism is not a new phenomenon. The Cold War period saw numerous, if sporadic, attacks on ships and ports by various extremist organizations the world over. Perhaps the most high-profile and impactful incident was the hijacking of the MS Achille Lauro cruise liner by the Palestine Liberation Front in 1985.[108] While the hijacking was eventually resolved, it highlighted the weakness of existing international law in dealing with terrorism at sea.

A new convention was negotiated under the auspices of the IMO. Signed in 1988, the Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation (known as the SUA or Rome Convention) obliges signatory States to introduce appropriate laws for offenses which take place on board ships and platforms on the high seas and regulates the extradition of suspects.[109] State actors also turned new attention to the counter-terrorism response at sea.

The threat of maritime terrorism was at the heart of the emergent maritime security agenda of the early 2000s. This was in part a response to the attack on the US guided missile destroyer USS Cole in October 2000 by an Al-Qaeda-affiliated group off the coast of Yemen. However, it was also part of the wider international counter-terrorism response to the attacks of 11 September 2001 on the United States, which showed that terrorist groups had the capability and intent to exploit vulnerabilities in transport infrastructure to attack military and civilian targets.

In response, a major new obligatory technical security standard – the International Ship and Port Security Code – was introduced.[110] A range of other maritime counter-terrorism measures – such as NATO's Operation Active Endeavour

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[106] UNSCR 2151 (2014), 2553 (2020).

[107] Alcock, Rupert. 2021. Somalia: Experiments in Knowing and Doing Capacity Building, in Capacity Building for Maritime Security: The Western Indian Ocean Experience, edited by Christian Bueger, Timothy Edmunds and Robert McCabe, Basingstoke: Palgrave, 249-280.

[108] Halberstam, Malvina. 1988. Terrorism on the High Seas: The Achille Lauro, Piracy and the IMO Convention on Maritime Safety, American Journal of International Law 82 (2): 269–310.

[109] Halberstam, Malvina. 1988. Terrorism on the High Seas: The Achille Lauro, Piracy and the IMO Convention on Maritime Safety, American Journal of International Law 82 (2): 269–310.

[110] Mensah, Thomas A. 2003. The Place of the ISPS Code in the Legal International Regime for the Security of International Shipping, WMU Journal of Maritime Affairs 3(1): 17–30.

naval mission[111] and the US-led Proliferation Security Initiative[112] – were also introduced around this time.

The threat of maritime terrorism remains an issue of significant concern. While terrorist attacks on ships have been relatively rare, their potential to cause disruption and loss of life remains significant. The sinking of the Philippine-flagged MV SuperFerry 14 by the Abu Sayyaf group in Manila Bay in 2004 for example, led to the deaths of 166 passengers.[113]

Terrorists and extremist groups can also use maritime transport to facilitate their activities, for example to move operatives or materiel across borders undetected. These risks were most starkly illustrated by the 2008 Mumbai attacks, where a militant group from Pakistan arrived in the city undetected on board a hijacked fishing vessel, subsequently killing around 164 people and wounding over 300 others.[114] As noted in chapter 4.1.2 above, extremist groups have also engaged in blue crimes to help fund their activities.

Maritime terrorism is one dimension within the broader United Nations counter-terrorism regime, including the United Nations Global Counter-Terrorism Strategy, the Office of Counter-Terrorism, the Security Council's Counter-Terrorism Committee, and the Global Counter-Terrorism Coordination Compact. Specific agencies such as the UNODC also run counter-terrorism initiatives in the maritime domain, including capacity-building and work to combat terrorist financing though blue crime.

4.4. Blue crime: Piracy and smuggling

Maritime – or 'blue' – crime has been most directly addressed within the United Nations system often under an explicit Security Council mandate. Recognizing the importance of maritime crimes, the Security Council also held a cross-cutting debate on 'transnational organized crime at sea as a threat to international peace and security' in February 2019.[115]

4.4.1. Piracy

Piracy is the blue crime which has had the most significant impact on the maritime security agenda. Piracy is clearly defined under UNCLOS as comprising "any illegal acts of violence or detention, or any act of depredation, committed for private ends" that take place "on the high seas" or "outside the jurisdiction of any State".[116]

It thus excludes attacks which take place in territorial waters, which are commonly referred to as 'armed robbery against ships' and subject to national laws and jurisdiction rather than the provisions of UNCLOS. In practice, piracy is often used as a catch-all term to refer to both types of activity.

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111 Shukri, Shazwanis. 2019. Combatting Terrorism at Sea: Assessing NATO's Maritime Operations in the Mediterranean, Journal of International Studies 15: 105–16.

112 Guilfoyle, Douglas. 2005. The Proliferation Security Initiative: Interdicting Vessels in International Waters to Prevent the Spread of Weapons of Mass Destruction?, Melbourne University Law Review 29(3): 733–64.

113 Banlaoi, Rommel C. 2006. The Abu Sayyaf Group: Threat of Maritime Piracy and Terrorism, in Violence at Sea, edited by Peter Lehr, London: Routledge, 121-138.

114 Cummings, Alan. 2014. The Mumbai Attack: Terrorism from the Sea, Center for International Maritime Security (CIMSEC), 29 July 2014, https://cimsec.org/mumbai-attack-terrorism-sea/.

115 Security Council 8457th Meeting, SC/13691, 5 February 2019.

116 UNCLOS, art. 101.

Piracy is an issue that has steadily climbed up the international security agenda. First concerns were raised at the IMO in the 1980s when the organization started to monitor and record incidents and developed global guidance documents. Most attacks in the 1980s up to the 2000s took place in the Malacca and Singapore straits. Counter-piracy hence focused on South-East Asia and identifying regional solutions, including the establishment of the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (see chapter 3).

Piracy was primarily seen as a problem that could be managed regionally or through IMO guidance. This changed with the rise of piracy off the coast of Somalia from 2005, when the IMO called for action from the Security Council for the first time, reiterating its concerns in 2007. Not only was Somali piracy distinguished by its intensity, but it also took place on the high seas and threatened one of the busiest shipping lanes in the world. Moreover, regional States lacked the capacity to address the problem themselves.

> "Piracy is the blue crime which has had the **most significant impact on the maritime security agenda**."

In consequence, piracy in the region quickly became an important international security concern. It was addressed through the Security Council, which in 2008 adopted resolution 1838 calling on States to actively take part in the fight against piracy on the high seas off the coast of Somalia, including by military means.[117]

In response a range of maritime security interventions were adopted, including the creation of novel international naval coalitions and coordination arrangements, new MDA and information-sharing mechanisms, a new system for the prosecution and incarceration of pirate suspects apprehended on the high seas, numerous maritime security capacity-building initiatives with regional States, and self-protection measures for merchant ships transiting the region including the use of armed guards.[118]

By 2012, these measures had been largely successful in containing piracy off the coast of Somalia, and today form the basis of a more widely adopted toolkit of solutions that is applied to maritime security more generally. Even so, the problem of piracy has continued. Piracy in the Gulf of Guinea region has been a particular concern, with the Security Council issuing resolutions on the issue in 2011, 2012, and 2022.[119]

The return of piracy attacks off the coast of Somalia have been seen in 2023–2024, illustrating the persistence of the problem and the difficulties of achieving its eradication rather than simply its suppression.[120]

4.4.2. The smuggling of contraband by sea

The seas are advantageous to the movement of illicit goods and cargos because they connect

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[117] UNSCR 1838 (2008).

[118] Bueger, Chrisitan and Timothy Edmunds. 2017. Beyond Seablindness: A New Agenda for Maritime Security Studies, International Affairs 93 (6): 1302-9.

[119] UNSCR 2018 (2011), 2039 (2012), and 2634 (2022).

[120] Bueger, Christian. 2024. Somali Pirates are back in Action: A Strong Global Response is Needed, SafeSeas Commentary, 19 January 2024, https://www.safeseas.net/piracy-2024/.

different parts of the world without hard borders or checkpoints, and exchanges of goods can take place outside the jurisdictional territories of States.

Of course, smuggling by sea requires departure and arrival points on land, which means that many goods must also pass through ports and customs posts. However, because larger ports today process such huge volumes of cargo, much of it containerized, they offer numerous opportunities for the onward movement of illicit goods without detection. Smugglers can also avoid these facilities altogether, making use of remote or unpoliced landing points on coastlines, close to shore drop-off locations, or smaller harbours with weaker or non-existent security measures in place.

A wide variety of goods are smuggled by sea. Many, such as narcotics, illicit arms, wildlife, or counterfeits, are explicitly illegal at the point of destination. Others, such as fuel, cigarettes, or waste products, may be legal, but are smuggled through illicit routes to avoid taxation, customs duties, or regulatory measures.

Maritime smuggling exhibits a diversity of scale, organization, and harms that reflects the range of goods being smuggled. For these reasons, smuggling is dealt with by a range of different international regimes, conventions, and agencies, including those on drug control, wildlife conservation, arms control, and sanctions. The UNCLOS regime forms the basis of the response, though beyond establishing the underlying zonal regime of maritime legal jurisdictions, it has little to say about smuggling specifically. The one exception is drug trafficking, where it gives special powers to States to cooperate in the suppression of such activities on the high seas.

Agencies such as the UNODC provide technical assistance in maritime law enforcement, while INTERPOL coordinates joined policing operations at sea. Countering the smuggling of goods such as narcotics is also a high political priority for many States. Even so, maritime trafficking remains a persistent problem and one that is highly resistant to eradication measures. It is also noteworthy that while smuggling has long been recognized as a transnational organized crime, it was only in the late 2000s that it came to be recognized as a distinct maritime issue and a key priority of the maritime security agenda.

A key maritime smuggling problem is the evasion of United Nations arms embargoes and the trafficking of weapons and small arms that fuel conflict. For example, the Security Council currently authorizes maritime interdictions against vessels involved in illicit weapons trafficking off Yemen, Somalia, and Libya. The Security Council also calls on States to enforce a United Nations ban on nuclear and missile technology transfers to the Democratic People's Republic of Korea, which are often shipped in vessels. Preventing weapons smuggling and upholding United Nations arms embargoes at sea is vital to ensure international peace, security, and stability. [121]

4.4.3. People smuggling and human trafficking

The smuggling of people along maritime routes is a common practice to avoid immigration restrictions or other border controls. Humans can also be trafficked against their will for the purposes of forced labour in agriculture, domestic service or the sex industry. Other types of smuggling are carried out to evade Security Council sanctions against States or extremist groups.

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[121] UNODC. 2014. Assessment of the Response to Illicit Weapons Trafficking in the Gulf of Aden and the Red Sea. United Nations Office on Drugs and Crime. Vorrath, Judith. 2024. UN Arms Embargoes under Scrutiny. SWP Research Paper. 2024/RP 12, 3 September 2024.

The sea is one of the main routes for irregular migration including by refugees and asylum seekers. The need to navigate often dangerous waters leaves many migrants vulnerable to people smugglers and human traffickers who often use overcrowded and unseaworthy boats without safety equipment. Smugglers also frequently abuse migrants and violate their basic human rights, through violence, torture and the withholding of adequate food and water. It has been estimated that over 30,000 migrants from Africa and Asia have perished in the Mediterranean while trying to enter Europe in the last 10 years.[122]

The United Nations response to maritime migration is led by the IOM, which supports Member States in the enhancement of maritime security by providing technical guidance on appropriate policies, administrative structures and operational systems through its Immigration and Border Management (IBM) Division. Other United Nations agencies dealing with maritime migration include the United Nations High Commissioner for Refugees, which initiated a Global Initiative on Protection at Sea in 2014 and tries to ensure that maritime migrants and refugees can disembark from vessels at a safe location. Moreover, a growing number of NGOs, including the International Committee of the Red Cross, have become active on the issue and often provide vital search and rescue services to save migrant lives at sea.

4.5. Blue crime and the environment

Crimes including illicit fishing, waste dumping at sea or into the sea from land, the discharge of ballast and wastewater from ships, unregulated breakage activities, the abandonment of ships and the illicit extraction of natural resources other than fish create direct harms to the marine environment. These crimes often have second order effects on people too. For example, pollution can damage human health, while biodiversity loss can impact food production and the income generated by fisheries or tourism.

The fight against environmental crime at sea is especially challenging because many activities which cause harm to the marine environment are only lightly criminalized, or may not be criminalized at all, depending on where they take place. Environmental crimes that are carried out on the high seas are subject to much looser forms of criminalization and regulation because they depend almost wholly on flag State legislation and enforcement.[123]

> “Crimes including illicit fishing, waste dumping at sea or into the sea from land, the discharge of ballast and wastewater from ships, unregulated breakage activities, the abandonment of ships and the illicit extraction of natural resources other than fish **create direct harms to the marine environment**.”

Nevertheless, the international regime against maritime environmental crime has strengthened since the 1980s. Key developments include the creation of legal and organizational arrangements to regulate illicit fishing, discussed in more detail below, but also measures to prevent marine pollution.

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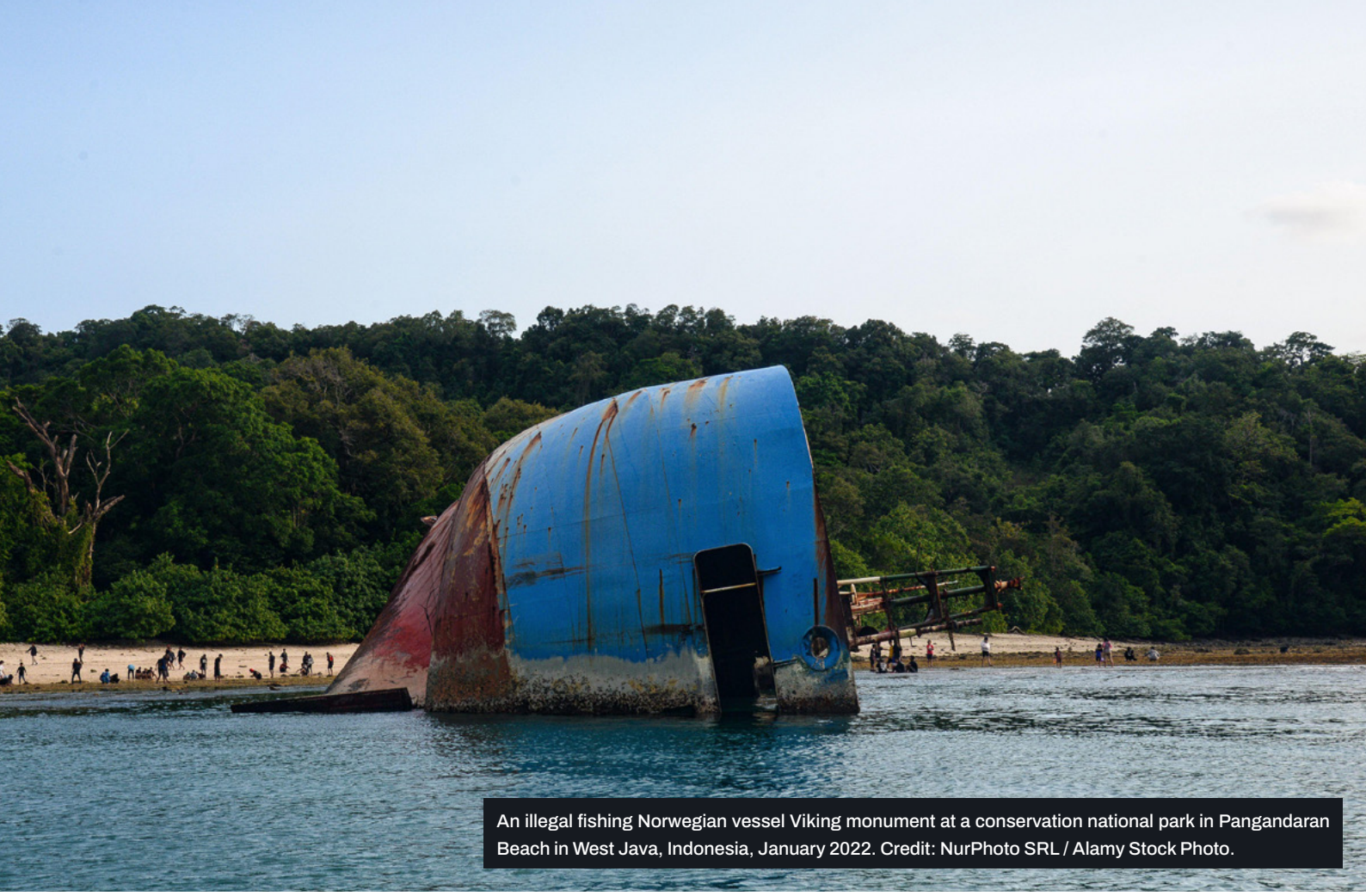
[122] Missing Migrants Project. 30,333 missing migrants since 2014. https://missingmigrants.iom.int/region/mediterranean.

[123] Stable Seas. 2021. What We Know about Maritime Environmental Crime. One Earth Future and Safe Seas. https://www.safeseas.net/wp-content/uploads/2021/09/What_We_Know_About_Maritime_Environmental_Crime.pdf.



An illegal fishing Norwegian vessel Viking monument at a conservation national park in Pangandaran Beach in West Java, Indonesia, January 2022. Credit: NurPhoto SRL / Alamy Stock Photo.

Here the role of the IMO was key. In 1973 it oversaw the adoption of the International Convention for the Prevention of Pollution from Ships, after a series of accidents involving oil tankers.[124] The focus at that time was on the prevention of accidents, with less attention paid to deliberate acts of marine pollution. These only entered the discussion later as regulations were tightened and broader understandings of what was considered pollution (such as the discharge of noxious substances from ships) came to the fore. Several annexes have since been added to the Convention, and other treaties, such as the Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal (the Basel Convention) of 1989, have come into force. Taken together, these regulations have de facto criminalized various forms of pollution at sea.

4.5.1. Illicit fishing

Illegal, unreported, and unregulated (IUU) fishing is a major problem that causes significant environmental and economic harms. At a time when as much as 90 per cent of the world's fish stocks are either depleted or overexploited, it has been estimated that IUU fishing activities account for between 15–30 per cent of the total global catch. It also undermines the legitimate maritime economy, with estimates suggesting a potential cost to the world economy of USD 23.5 billion per year.[125]

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[124] Tarelko, Wieslaw. 2012. Origins of Ship Safety Requirements Formulated by International Maritime Organization. Procedia Engineering 45: 847–56.

[125] National Intelligence Council of the United States. 2016. Global Implications of Illegal, Unreported and Unregulated (IUU) Fishing. National Intelligence Council of the United States, 3, https://irp.fas.org/nic/fishing.pdf.

The IUU concept was first formulated by the Conservation of Antarctic Marine Living Resources in 1997 to capture the variegated nature of illicit fishing activities and develop a comprehensive response. It was later adopted by the FAO and is now in common usage the world over. It incorporates *illegal fishing*, which takes place in contravention of national and regional fisheries management laws, including fishing conducted by vessels without nationality; *unreported fishing* which refers to catches that are not reported or misreported to relevant national authorities; and *unregulated fishing*, which refers to fishing that takes place outside of conservation or management measures.[126]

The international response to illicit fishing is led by the FAO. The FAO International Plan of Action to Prevent, Deter and Eliminate IUU Fishing of 2001 provides a common framework of action for States. The subsequent FAO Agreement on Port State Measures to Prevent, Deter and Eliminate IUU Fishing of 2009 focuses on measures to be taken in the ports where fish are landed. INTERPOL is also active in the fight against illicit fishing. It provides Investigative Support Teams to assist member States with criminal investigations into fisheries crimes. It also issues regular notices, which are formal requests for cooperation or alerts between States, for illicit fishing activities.

In addition, Regional Fisheries Management Organizations maintain blacklists of vessels known to engage in illicit fishing or suspected of doing so to inform regional maritime law enforcement actors. Various other regional information-sharing and surveillance initiatives enable the cross-national exchange of data and evidence on suspicious vessels and facilitate interceptions by enforcement agencies. A growing number of NGOs also support fisheries protection.

4.6. Maritime security strategies and maritime security sector reform

In the face of these continuing challenges, States are faced with the dilemma of how best to organize their responses. This is especially the case for those States for which security at sea has historically been a lower priority than security on land, and whose organizational structures and governance mechanisms for maritime security may be under-developed.

> An increasingly common consensus has emerged on the **core components** that are necessary to orchestrate a national maritime security response.

An increasingly common consensus has emerged on the core components that are necessary to orchestrate a national maritime security response. It comprises four elements.

- First, appropriate agency structures, such as coast guards or maritime police, to conduct maritime security tasks at sea.
- Second, a maritime security strategy that sets out goals and ambitions, identifies challenges, and specifies the roles and responsibilities of different agencies.
- Third, a cross-governmental coordination mechanism that reviews the strategy, works towards policy integration, and enables organizational coordination.

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[126] FAO. What is IUU fishing? https://www.fao.org/iuu-fishing/background/what-is-iuu-fishing/en/.

- Finally, an MDA and information-sharing mechanism that provides a coherent picture of maritime activities and incidents under national jurisdiction.

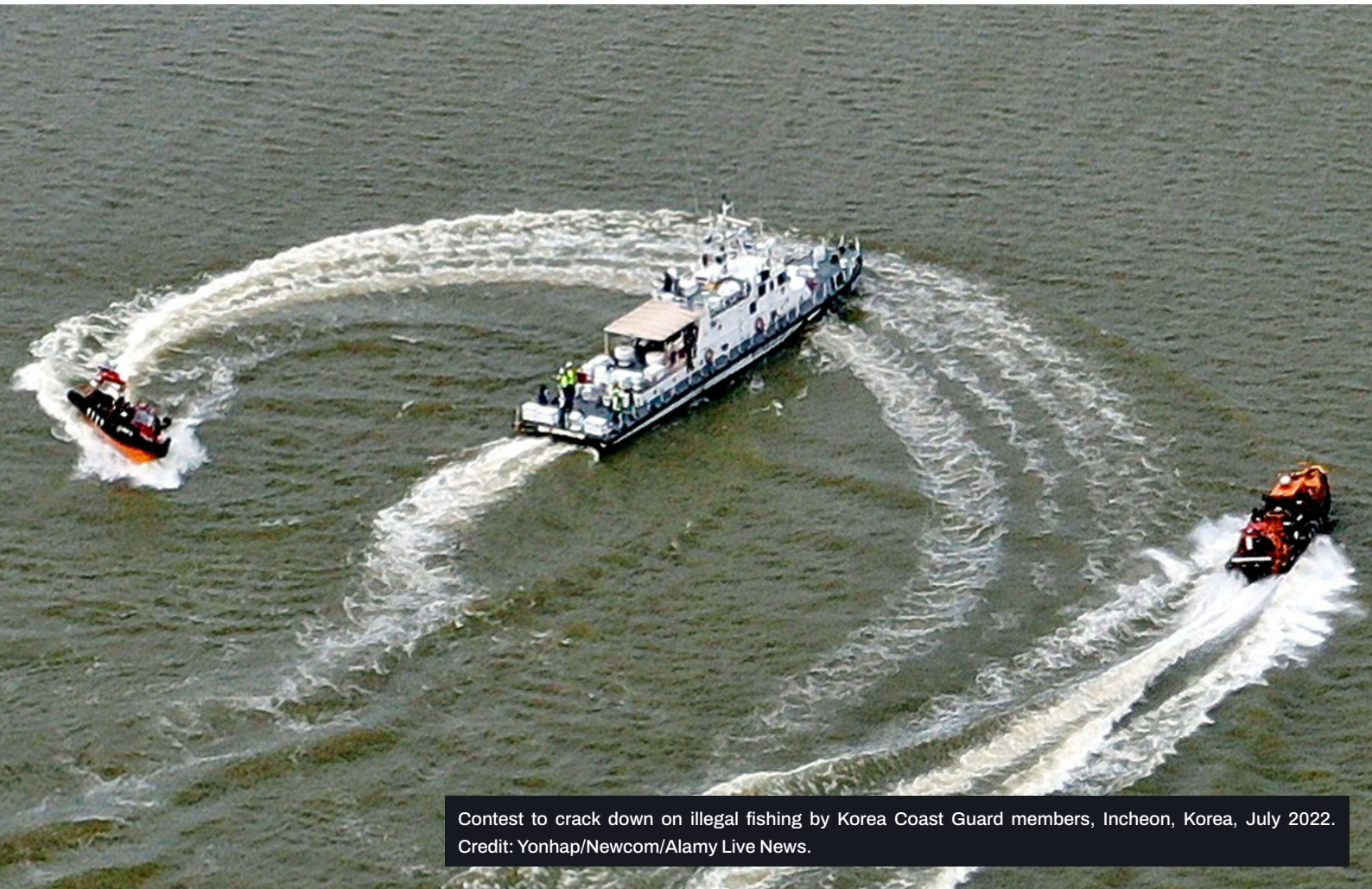
This process is commonly known as 'maritime security sector reform'. It is a key component of many capacity-building programmes and is supported and promulgated through the work of the IMO, UNODC, and others. For many States, and especially those classified as coastal Least Developed States or Small Island Developing States, the capacity deficit remains severe, and resourcing and sustaining maritime security sector reform over time is a common challenge.

Identifying workable mechanisms for pooling resources among States, as envisaged in the Yaoundé Code of Conduct and the EU MASE programme, potentially offers one solution. In addition, capacity-building can be made more effective and efficient by addressing common challenges such as an emphasis on short-term projects with easily measurable impacts over longer-term support packages, a lack of coordination among different capacity-building providers, and insufficient attention to local needs and circumstances.

4.7. Conclusion

The established and continuing challenges of maritime security have not gone away. They are increasingly recognized as important issues of national, regional, and international security, and are addressed through an increasingly mature toolbox of maritime security solutions, including capacity-building and maritime security sector reform, maritime domain awareness, and maritime security strategies.

However, significant capacity gaps, and challenges of coordination and coherence both among States, and among different agencies within States, remain. Further investments in and attention to maritime security will be required if these issues are to be addressed over the long term.



Contest to crack down on illegal fishing by Korea Coast Guard members, Incheon, Korea, July 2022. Credit: Yonhap/Newcom/Alamy Live News.

5. Challenges that will determine the future of security at sea

The maritime security agenda is constantly evolving. This chapter introduces 20 emerging challenges that are increasingly shaping this agenda, and look set to do so in future too. They are challenges to peace and security linked to the acceleration of ocean use, climate change, and the decline of ocean health. Yet they are also a product of emerging technologies and the rise of new military tactics and geostrategies at sea.

In contrast to the maritime security issues outlined in chapter four, these challenges are less established and less well understood. They are characterized by high strategic uncertainty, a lack of norms and accepted definitions, and limits of evidence and data. In consequence, discussions on possible global governance responses to these challenges tend to be at an early stage, making these issues priorities for further analysis.

While some of these challenges relate to familiar questions of non-proliferation, disarmament and conflict resolution, others are novel in the way that peace and security issues intersect with sustainable development and economic and social affairs.

Each challenge is introduced by outlining the nature of the problem, its significance, and both current and recommended approaches for addressing it.

5.1. Shadow fleets, sanction evasion and non-proliferation

The rise of the global 'dark', 'parallel' or 'shadow' fleet is a growing threat to marine safety and international security. Shadow vessels are aging vessels involved primarily in illicit sanctioned trade. They are registered through offshore shell companies and have opaque ownership structures. Shadow vessels 'flag hop' between permissive ship registries and turn off their positioning systems, such as the Automatic Identification System (AIS), to obscure their activities. Some experts estimate that up to 1,400 shadow vessels currently sail the world's oceans engaging in smuggling and other illicit activities.[127]

> The rise of the global 'dark', 'parallel' or 'shadow' fleet is a **growing threat** to marine safety and international security.

The shadow fleet is a major problem for the enforcement of United Nations sanctions against States including Libya, the Democratic People's Republic of Korea, Somalia and Yemen. For example, United Nations Panels of Experts have not only demonstrated how the Democratic People's Republic of Korea deploys shadow vessels to evade United Nations sanctions and sustain its nuclear proliferation programme,[128] but also

[127] Braw, Elizabeth. 2024. Russia's growing dark fleet: Risks for the global maritime order. Atlantic Council, 11 January 2024, https://www.atlanticcouncil.org/in-depth-research-reports/issue-brief/russias-growing-dark-fleet-risks-for-the-global-maritime-order/#shadow-fleet-incidents-and-accidents.

[128] See Security Council Committee established pursuant to resolution 1718 (2006), https://www.un.org/securitycouncil/sanctions/1718.

how terrorist groups in Yemen[129] and Somalia[130] benefit from the illegal trade in weapons and other goods across the Gulf of Aden.

Shadow vessels also pose considerable risk to seafarers and other ships and to the marine environment and blue economy of coastal States. Shadow vessels often do not comply with relevant IMO and marine safety regulations. They may lack oil spill insurance or conduct dangerous ship-to-ship oil transfers while turning off ship tracking systems.[131]

> Attacks on maritime shipping threaten maritime supply lines. This includes war at sea and attacks against vessels by armed political groups.

Several major accidents involving shadow tankers have already occurred, including the explosion of the MV Pablo off Malaysia in 2023, and the collision between the shadow tanker Andromeda Star and the cargo vessel Peace off Copenhagen in 2024.[132] High-risk areas for substandard shadow shipping activities include the Strait of Malacca and the waters off Malaysia, Indonesia, and other areas lacking the capacity to monitor their waters and respond to shipping accidents.[133]

Addressing shadow shipping risks requires a global response. These efforts are currently led by the Security Council, which has placed 59 vessels on its Designated Vessel Lists for violating sanctions on the Democratic People's Republic of Korea.[134] Yet the shadow fleet's safety and pollution risks are not yet addressed systematically. Other United Nations organizations, such as the IMO and the UNEP Regional Seas Programme, could fill this gap. The IMO could, for example, develop rules to ensure flag State control over vessels, and the UNEP Regional Seas Programme could help to establish information-sharing mechanisms about substandard shadow vessels as well as building regional capacities to deal with oil spills and other environmental disasters caused by substandard shadow vessels.

5.2. Warfare at sea and attacks on merchant shipping by armed groups

Attacks on maritime shipping threaten maritime supply lines. This includes war at sea and attacks against vessels by armed political groups, including in the Red Sea and in the Black Sea. An emblematic example are the

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129 See Security Council Committee established pursuant to resolution 2140 (2014), https://www.un.org/securitycouncil/sanctions/2140.

130 See Security Council Committee pursuant to resolution 2713 (2023) concerning Al-Shabaab, https://www.un.org/securitycouncil/sanctions/2713.

131 Stockbruegger, Jan. 2022. Russia's using 'dark' tankers to evade Western oil sanctions. Washington Post/Monkey Cage, 8 December 2022.

132 Maritime Executive. 2024. Report: Dark Fleet Tanker Had a Collision off Denmark. Maritime Executive, 19 March 2024. https://maritime-executive.com/article/report-dark-fleet-tanker-had-a-collision-off-denmark.

133 Stockbruegger, Jan and Vonintsoa Rafaly. 2023. Southeast Asian States Need to Tackle the Dangerous Shadow Tanker Activities in Their Waters. The Diplomat, 14 September 2023. https://thediplomat.com/2023/09/southeast-asian-states-need-to-tackle-the-dangerous-shadow-tanker-activities-in-their-waters/.

134 See 1718 Designated Vessels List, https://www.un.org/securitycouncil/sites/www.un.org.securitycouncil/files/1718_designated_vessels_list_final.pdf.

Houthi anti-ship ballistic missile hits M/V True Confidence, Gulf of Aden, March 2024. Credit: Associated Press / Alamy Stock Photo.

attacks by Houthi forces on merchant vessels off the coast of Yemen and in the Red Sea. These have disrupted maritime supply lines, killed seafarers, and led to dangerous accidents and environmental damage. In March 2024, for example, the MV Rubymar sank after being hit by a Houthi anti-ship ballistic missile, leaking its cargo of fertilizer into the sea.[135] Three seafarers were also killed in an attack on the cargo ship True Confidence off Yemen's coast.[136] In response, many shipowners have rerouted their vessels around the African continent, which has increased shipping costs and global oil and cargo prices.

Such attacks threaten not only vessels and seafarers but also global food supplies and economic activities, including in poor and middle-income developing countries. Many of these countries rely on food transported by sea, while energy imports sustain their domestic manufacturing and other industries. Rising global food and energy prices due to maritime insecurity and attacks on shipping lanes thus threaten their food security and economic growth and development prospects.

For example, attacks on shipping in the Black Sea have contributed to inflating food prices

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[135] Gambrell, Jon. 2024. A ship earlier hit by Yemen's Houthi rebels sinks in the Red Sea, the first vessel lost in conflict. Associated Press, 2 March 2024. https://apnews.com/article/yemen-houthi-rebels-rubymar-sinks-red-sea-fb64a-490ce935756337ee3606e15d093.

[136] Saul, Jonathan. 2024. 'True Confidence' Adrift After First Seafarer Fatalities from Houthis' Red Sea Attacks." GCaptain, 7 March 2024, https://gcaptain.com/true-confidence-adrift-after-first-seafarer-fatalities-from-houthis-red-sea-attacks/.

and caused shortages in African, Asian, and Middle Eastern countries including Sri Lanka, Egypt, and Iraq.[137] The United Nations has estimated an "increase of 47 million acutely hungry people due to the ripple effects of the war in Ukraine in all its dimensions".[138]

Developing countries are also increasingly part of global manufacturing supply chains that depend on maritime transportation. Rising shipping rates and freight costs due to maritime attacks thus threaten growth and jobs in their manufacturing sectors. For example, shipping costs more than doubled after Houthi rebels attacked commercial vessels in the Red Sea, thus contributing to slowing down China's exports and undermining its post-pandemic economic recovery.[139]

> The proliferation of cheap maritime weapons and dual-use military technologies is a **major threat to maritime security** and the safety of seaborne transportation.

The Security Council has taken these incidents seriously. For example, the Security Council has condemned "Houthi attacks on merchant and commercial vessels" in the Red Sea and demanded that the "Houthis immediately cease all such attacks"; it also authorized "Member States, in accordance with international law, to defend their vessels from attacks."[140] The United Nations also established a safe maritime corridor for Ukrainian grain shipments to ensure global food supplies known as the Black Sea Grain Initiative.[141]

Yet the Black Sea Grain Initiative failed, and attacks on merchant vessels in the Red Sea have continued, despite a growing international naval presence. A global maritime security response – such as the one to protect shipping against piracy attacks – has not yet emerged.

There is the urgent need to consolidate knowledge on how attacks on maritime trade impact on the global economy, humanitarian aid supply, as well as food security, but also to systematically feature the maritime dimension as a key element in conflict resolution and future peacekeeping efforts of the United Nations system.

5.3. Proliferation of low-cost weapon systems

The proliferation of cheap maritime weapons and dual-use military technologies is a major threat to maritime security and the safety of seaborne transportation. As the costs of these technologies decreases, and their availability increases, a growing number of State and non-State actors can develop sophisticated sea-denial capabilities and attack maritime trade and infrastructures. For example, the Houthis have used drones, sea mines, and

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[137] Lin, Faqin, et al. 2023. The Impact of Russia-Ukraine Conflict on Global Food Security. Global Food Security 36: 100661.

[138] United Nations. 2022. Global impact of war in Ukraine: Energy crisis. UN Global Crisis Response Group on Food, Energy, and Finance. August 2022. https://news.un.org/pages/wp-content/uploads/2022/08/GCRG_3rd-Brief_Aug3_2022_FINAL.pdf.

[139] Shen, Samuel, Casey Hall and Ellen Zhang. 2024. Red Sea shipping attacks pressure China's exporters as delays, costs mount. Reuters, 22 January 2024.

[140] S/RES/2722 (2024).

[141] United Nations. Black Sea Grain Initiative Joint Coordination Centre (JCC). https://www.un.org/en/black-sea-grain-initiative.

anti-ship missiles to attack commercial vessels, naval vessels and ports in the Red Sea,[142] and the Ukrainian armed forces are building a naval fleet of aerial drones and unmanned maritime surface vehicles in the Back Sea.[143]

States continue to pursue and refine various missile- and drone-related technologies. This includes improvements to the guidance, accuracy and manoeuvrability of unmanned aerial vehicles and surface and underwater drones. These developments will increase their military utility, contributing to their desirability, proliferation and use. The development of autonomous weapons systems based on artificial intelligence is another major area of concern in maritime security.

Less sophisticated technologies also continue to be a concern. Pirates and other violent non-State armed actors, for example, frequently use speedboats and small arms such as rocket-propelled grenades to attack maritime transport and fishing vessels. Moreover, malign actors can use commercially available systems to track vessel movements, identify targets, and plan and conduct maritime attacks on merchant shipping.

However, despite their political significance and negative impact on maritime security – including their record of indiscriminate use, and, increasingly, their role in armed conflict – global regimes and norms governing these maritime weapons and dual-use technologies are underdeveloped.[144] The existing maritime arms control regime focuses on nuclear weapons. This includes the 1971 Sea-bed Arms Control Treaty and the establishment of nuclear-weapon-free zones in the South Pacific, the Caribbean, and South-East Asia, among others.[145] Yet a maritime arms control agenda focusing on uncrewed vehicles and missile technologies has not yet emerged.

The United Nations Office for Disarmament Affairs, which is the key actor in multilateral arms control efforts, could be given a mandate to lead such a discussion as part of its broader effort to address the proliferation of missile and drone technologies.

5.4. The return of sea mine risks

The laying of sea mines has been a long-standing feature of naval warfare. Mines are indiscriminate weapons that threaten not only civilian coastal populations, fishermen, and merchant vessels, but also large marine mammals.[146] Because sea mines can remain in place long after they have served their strategic purpose, they also entail a long-term pollution challenge and potential risk to shipping.

The use of sea mines has made a remarkable comeback, which implies the need to re-envision the contributions of arms control as well as demining support, including through the United Nations Mine Action Service.

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[142] Haugstvedt, Håvard, and Jan Otto Jacobsen. 2020. Taking Fourth-Generation Warfare to the Skies? An Empirical Exploration of Non-State Actors' Use of Weaponized Unmanned Aerial Vehicles (UAVs—'Drones'). Perspectives on Terrorism 14 (5): 26–40.

[143] Chávez, Kerry. 2023. Learning on the Fly: Drones in the Russian-Ukrainian War. Arms Control Today 53 (1): 6–11.

[144] Fieldhouse, Richard W. (ed.). 1990. Security at Sea: Naval Forces and Arms Control. Oxford: Oxford University Press.

[145] Mendenhall, Elizabeth. 2020. Nuclear-Weapon-Free Zones and Contemporary Arms Control. Strategic Studies Quarterly 28 (2): 1–43.

[146] SGTN. 2019. Whale dies after hitting mine, SGTN, 26 December 2019, https://newsus.cgtn.com/news/2019-12-26/Whale-dies-after-hitting-mine-MJd4VTy7e0/index.html.

The Democratic People's Republic of Korea has used sea mines extensively.[147] The Houthi forces operating in Yemen have also laid a substantial number of sea mines, with reports indicating several drifting in the Red Sea.[148] The conflict between Ukraine and the Russian Federation has led to a proliferation of mines in the Black Sea, including mines deliberately set adrift.[149] This has already led to at least two incidents in which merchant vessels were damaged and crew injured.[150]

A recent report indicates that the "threat is increasing today. The number of countries with mines, mining assets, mine manufacturing capabilities, and the intention to export mines has grown dramatically over the past several decades".[151] Other analysts indicate that "there is considerable appetite for [mines] as defensive, offensive, and coercive tools", and see a rapid resurgence of mine warfare in regions, such as the Indo-Pacific.[152] Reports indicate that other States, such as Australia[153] and the United States,[154] are investing heavily in new generations of sea mines.

The Hague Convention VIII of 1907 relative to the Laying of Automatic Submarine Mines (Hague VIII) is the main body of formal international law governing the laying of mines. It forbids the use of floating mines, requires the declaration of safety zones in which mines are laid and commits States to the removal of mines after a conflict ends. Yet only 50 States are party to it. This calls for a systematic update of the Convention and a broad participative arms control process within the General Assembly.

5.5. Lawfare? Civil vessels for military purposes

Lawfare refers to "the instrumental use of legal tools to achieve the same or similar effects as those traditionally sought from kinetic military action".[155] It is a serious challenge that undermines principles of the peaceful use of the sea. Lawfare strategies are often rooted in legal loopholes and inconsistencies in the law of the sea. These problems need to be addressed to ensure maritime security and prevent conflict escalation at sea.

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147 Branigan, Tania. 2010. South Korea fears mine from north sank ship. The Guardian, 30 March 2010. https://www.theguardian.com/world/2010/mar/30/south-korea-ship-north-mine.

148 al-Tamimi, Nabil Abdullah. 2022. Floating death: Houthis' Red Sea mines pose lasting threat, Al_Mashareq, 10 June 2022, https://almashareq.com/en_GB/articles/cnmi_am/features/2022/06/10/feature-03.

149 Rothchild, Ben. 2023. Ukraine Symposium – "Damn the Torpedoes!": Naval mines in the Black Sea, Articles of War, 15 March 2023, https://lieber.westpoint.edu/damn-torpedoes-naval-mines-black-sea/.

150 Wesolowsky, Tony and Georgi A. Angelov. 2024. The battle to clear the Black Sea of Mines – Analysis, Eurasia Review, 15 January 2024, https://www.eurasiareview.com/15012024-the-battle-to-clear-the-black-sea-of-mines-analysis/.

151 Galdorisi, George. 2024. The Indispensable Ingredient for Victory: Defeating Deadly Sea Mines. CIMSEC, 2 July 2024. https://cimsec.org/the-indispensable-ingredient-for-victory-defeating-deadly-sea-mines/.

152 Huberman, Alia. 2020. Breaching The Surface: The Future of Sea Mines in the Indo-Pacific. Royal Australian Navy Sea Power Soundings 18. https://seapower.navy.gov.au/sites/default/files/documents/Soundings_Number_18.pdf.

153 Robson, Seth. 2023. Australia's sea-mine purchases aim to counter Chinese basing plans in region, experts say. Stars and Stripes, 24 January 2023. https://www.stripes.com/theaters/asia_pacific/2023-01-23/australia-sea-mines-china-aggression-8867056.html.

154 Trevithick, Joseph. 2021. U.S. Is Betting Big on Naval Mine Warfare with these New Sub-Launched and Air-Dropped Types. The Warzone, 28 June 2021. https://www.twz.com/25235/the-u-s-is-getting-back-into-naval-mine-warfare-with-new-sub-launched-and-air-dropped-types.

155 Kittrie, Orde. 2016. Lawfare: Law as a Weapon of War, Oxford: Oxford University Press, 11.

One important ambiguity in UNCLOS is the indeterminate status of foreign scientific research in the exclusive economic zone (EEZ) and territorial waters and whether such activities require the permission of the coastal State.[156] The problem relates to the relationship between scientific research and spying activities and the fact that platforms and data used for civilian research purposes sometimes have military applications. Some States, for example, use fishing or ocean research vessels to track military activities in foreign EEZs or to map the subsea for submarine operations, while others camouflage such military operations as purely scientific research endeavours.[157]

States also dispute the legality of military operations in the EEZ more broadly and whether foreign navies enjoy freedom of navigation for military exercises and spying activities in other States' EEZ. Some States view such activities as a major threat to their security and as an infringement of their sovereign rights. Others however view them as a standard State practice that is permissible under UNCLOS.[158]

Another problem emerges when States use civilian vessels to project power in contested waters. This includes, for example, the deployment of fishing and civilian coast guard vessels in maritime disputes in areas such as the South China Sea.[159] In the Artic Ocean, meanwhile, States use icebreakers and other civilian platforms to control shipping lanes, thus further blurring the line between civilian and military activities, and build military installations in the open sea to claim island territories.[160] How such platforms and activities should be regulated under UNCLOS remains unclear.

Addressing these legal challenges and ambiguities is a major problem that has so far been only partially addressed by ITLOS, which rules on maritime disputes between States. The involvement of other United Nations agencies is also required to clarify the legal status of civilian and military activities under UNCLOS and to help develop consensus on these questions among member States. The Intergovernmental Oceanographic Commission, for example, could lead discussions on scientific research vessels, the FAO could help clarify the status of fishing vessels, and the IMO's expertise is vital for establishing guidelines for the use of icebreakers and other civilian platforms in maritime security and surveillance.

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[156] Daud, Aidir Amin, Marthen Napang, and Marcel Hendrapati. 2022. The Violation of Sovereign Rights by Foreign Research Vessels: A Case Study of the Chinese Research Vessel Hai Yang Di Zhi 10, Journal of East Asia and International Law 15 (1): 155–64.

[157] Kraska, James. 2015. Putting Your Head in the Tiger's Mouth: Submarine Espionage in Territorial Waters, Columbia Journal of Transnational Law 54: 164–247; Haiwen, Zhang. 2010. Is It Safeguarding the Freedom of Navigation or Maritime Hegemony of the United States? - Comments on Raul (Pete) Pedrozo's Article on Military Activities in the EEZ, Chinese Journal of International Law 9 (1): 31–47; Ladden-Hall, Dan. 2023. Suspected Chinese Spy Ship Is Just a Research Vessel, South Africa Says. Daily Best, 6 April 2023. https://www.thedailybeast.com/suspected-chinese-spy-ship-is-just-a-research-vessel-south-africa-says.

[158] Pedrozo, Raul. 2010. Preserving Navigational Rights and Freedoms: The Right to Conduct Military Activities in China's Exclusive Economic Zone. Chinese Journal of International Law 9 (1): 9–29; Haiwen, Zhang. 2010. Is It Safeguarding the Freedom of Navigation or Maritime Hegemony of the United States? - Comments on Raul (Pete) Pedrozo's Article on Military Activities in the EEZ. Chinese Journal of International Law 9 (1): 31–47.

[159] Poling, Gregory B. 2022. On Dangerous Ground: America's Century in the South China Sea. Oxford: Oxford University Press.

[160] Sergunin, Alexander, and Gunhild Hoogensen Gjørv. 2020. The Politics of Russian Arctic Shipping: Evolving Security and Geopolitical Factors. Polar Journal 10 (2): 251–72.

5.6. Maritime cyber security attacks

The rapid and intensifying digitalization of the maritime industry in navigation, port management and supply chains, and remote management of offshore installations, exposes maritime activities to a growing range of cyber risks. The number of reported cyber incidents and attacks in the maritime sector has been rising dramatically over the years.[161] Major incidents have been linked to criminal groups, intelligence-gathering operations and network effects from direct attacks on maritime industries.

The maritime security implications of these activities are significant, with the potential to cause damage and disruption to maritime operations and logistics, supply chains, and energy systems, and to increase the risk of accidents at sea and in ports.[162] By far the most frequent cyber attacks on the sector are criminally motivated, with the aim of extorting ransoms, supporting smuggling operations, or stealing commercial secrets.[163] Vessel navigation systems can also be attacked to facilitate digital maritime piracy. Moreover, the sector is vulnerable to potential attacks from malign State actors or extremist groups.

While the largest shipping enterprises are huge multinational conglomerates with robust cybersecurity capacities, much of the sector is smaller and less prepared. Similarly, ports are distributed globally and vary significantly in their size, capacity, and cyber awareness and resilience. This diversity implies a significant 'digital divide' in the sector, with cyber vulnerabilities concentrated in the small operators, whose fleets and ports nevertheless make up a significant proportion. An estimated 70 per cent of shipping companies worldwide, for example, operate fewer than 15 vessels. A further issue is the prevalence of older vessels in the global fleet, whose on-board systems may not meet current cybersecurity standards.[164]

There is growing awareness of the importance of cybersecurity in the maritime domain. The IMO has issued a guidance document for maritime transport,[165] as has the shipping industry.[166] Cybersecurity is also a major issue in informal regional forums, such as the European Coast Guard Function Forum. Six major maritime States[167] have established an International Partnership for Maritime Cyber Security to encourage the sharing of best practices and lessons learned, but also drive forward international norms and standard setting at the IMO and elsewhere.

The United Nations's cybersecurity regime is evolving rapidly, yet with only limited attention to the maritime domain so far. The United Nations System Chief Executives Board for

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[161] DNV. 2023. Maritime Cyber Priority 2023. Staying Secure in an Era of Connectivity. Oslo: DNV. Li, Meixuan, Jianying Zhou, Sudipta Chattopadhyay, and Mark Goh. 2024. Maritime Cybersecurity: A Comprehensive Review. Journal of the ACM 11(1): 111.

[162] Bueger, Christian and Timothy Edmunds. Understanding Maritime Security. Oxford: Oxford University Press: 191-196.

[163] Hand, Marcus. 2022. $3 million – The average cyberattack ransom payment in shipping." Seatrade Maritime News, 22 March 2022, https://www.seatrade-maritime.com/maritime-technology/-3-million-the-average-cyberattack-ransom-payment-in-shipping.

[164] Bueger, Christian and Timothy Edmunds. 2024. Understanding Maritime Security. Oxford: Oxford University Press: 191-196.

[165] MSC-FAL.1/Circ.3/Rev.2 Guidelines on Maritime Cyber Risk Management.

[166] The Guidelines on Cybersecurity onboard Ships. Version 4. https://wwwcdn.imo.org/localresources/en/OurWork/Security/Documents/ANNEX%20Guidelines%20on%20Cyber%20Security%20Onboard%20Ships%20v.4.pdf.

[167] Australia, Denmark, the Netherlands, Singapore, the United Kingdom, and the United States.

Coordination established an Information Security Special Interest Group in 2011 to promote inter-agency cooperation and collaboration.[168] In 2020, the United Nations Counter-Terrorism Centre adopted the Global Counter Terrorism Programme on Cybersecurity and New Technologies to provide capacity-building support to member States and regional organizations.[169] The Secretary-General also held an open debate on cybersecurity in June 2024 and States agreed on a draft of a landmark new convention on cybercrime in August that year.[170] Since 2020, moreover, the United Nations Office for Disarmament Affairs has convened an Open-ended Working Group on information and communications technologies.[171]

However, the cybersecurity challenges of the maritime domain, including in the offshore energy sector, are less well understood and addressed in the United Nations system. This is due both to the specific vulnerabilities and characteristics of the sector, and to the unique framework of the oceans. A tailored response is therefore required to bridge between existing United Nations regimes on cybersecurity, maritime security and ocean governance

5.7. Vulnerability of digital communication and subsea data cables

Up to 95 per cent of transregional digital data today is transported by the global subsea data cable system. This system of thousands of optical fibre cables on the ocean floor not only connects countries and continents, it is the backbone of the Internet and of digital communication and economies. Yet, this network is vulnerable and open to failure and direct attack.[172] It is essential to ensure appropriate physical protection of data cables laid on the ocean floor that provide the backbone of the modern internet.

Data cables are frequently damaged through natural disasters and accidents with fishing gear or anchors of vessels. However, they can also be a target of deliberate sabotage. Not the least since the 2022 Nord Stream and 2023 Baltic Connector incidents, deliberate sabotage is an increasingly important threat scenario.[173]

The RubyMar incident of 2024 has also shown how other maritime security challenges can present threats to the cable network.[174] The RubyMar was damaged by Houthi forces in the Red Sea and subsequently abandoned. While drifting, it cut three subsea data cables

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[168] Information Security Special Interest Group. https://unsceb.org/unissig.

[169] UNCCT Cybersecurity and New Technologies. https://www.un.org/counterterrorism/cybersecurity.

[170] A/AC.291/L.15.

[171] UNODA. Group of Governmental Experts. https://disarmament.unoda.org/group-of-governmental-experts/.

[172] Bueger, Christian and Tobias Liebetrau. 2021. Governing hidden infrastructure: The security politics of the global submarine data cable network, Contemporary Security Policy, 42(3): 391-413; see also Bashfield, Samuel. 2024. Defending Seabed Lines of Communication. Australian Journal of Maritime & Ocean Affairs, 1–13. https://doi.org/10.1080/18366503.2024.2363607.

[173] Horton, Andrew. 2024. The Achilles' heel of a digital nation: Australia's dependence on subsea cables. Australian Strategic Policy Institute, 6 June 2024, https://www.aspistrategist.org.au/the-achilles-heel-of-a-digital-nation-australias-dependence-on-subsea-cables/.

[174] Bueger, Christian and Giacomo Persi Paoli. 2024. Navigating the Depths: Unravelling the Complexity of Contemporary Maritime Security, UNIDIR Commentary, 16 April 2024, https://unidir.org/navigating-the-depths-unravelling-the-complexity-of-contemporary-maritime-security/.

connecting Europe and Asia. The impact was felt in particular in India.

Most countries have high levels of resilience in their cable connections, which means that single cable failures generally only have a limited impact. However, this is not the case in all circumstances. Least developed countries as well as island States are often weakly connected, leading to substantial risks to their digital connectivity and economic security. In such cases a single cable failure can have dramatic consequences and even lead to the shutdown of the economy, as documented by several cable failures on the Pacific Island of Tonga where the tourism industry was severely affected.[175] The loss of cable connectivity can lead to the effective shutdown of financial transactions and the tourism industry. The protection of cables is thus an important part of ensuring digital equity and development.

General Assembly resolutions on the oceans and law of the sea have recurrently requested that States pay more attention to the problem of protecting subsea data cables. Already in 2014, the General Assembly was:

> "Recognizing that fibre-optic submarine cables transmit most of the world's data and communications and hence are vitally important to the global economy and the national security of all States, conscious that these cables are susceptible to intentional and accidental damage from shipping and other activities and that the maintenance, including the repair, of these cables is important, noting that these matters have been brought to the attention of States at various workshops and seminars, and conscious of the need for States to adopt national laws and regulations to protect submarine cables and render their wilful damage or damage by culpable negligence punishable offences".[176]

While the importance of subsea data cables has been recognized across the United Nations, little direct action has followed. There is a need to harmonize international law, including clarifying to what degree deliberate cable cuts can be criminalized and who is responsible for protecting subsea data cables outside of national waters. UNODC has started to offer some limited capacity-building support as part of its Global Maritime Crime Programme. However, no United Nations entity monitors damages and responses or is fully in charge of addressing the issue. Prospectively, the International Telecommunication Union in cooperation with United Nations partners could engage in the issue.

5.8. Securing the green energy transition at sea: resilient energy infrastructures

Subsea data cables are not the only critical maritime infrastructure that requires better protection. The green energy transition depends on the expansion of offshore installations, including wind farms, solar farms, and the ocean floor electricity grid that connects them.[177] Several States plan energy islands in their EEZs, cross-regional electricity cable

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[175] Bateman, Tom. 2022. Tonga is finally back online. Here's why it took 5 weeks to fix its volcano-damaged Internet cable, Euronews, 23 February 2022, https://www.euronews.com/next/2022/02/23/tonga-is-finally-back-online-here-s-why-it-took-5-weeks-to-fix-its-volcano-damaged-interne.

[176] A/RES/68/70 (2014), p. 4.

[177] Bueger, Christian and Tobias Liebetrau. 2023. Critical Maritime Infrastructure Protection: What's the trouble? Marine Policy 155: 105772.

systems are under construction and green hydrogen production and a related system of pipelines are in the planning stages. Carbon capture and storage projects utilizing former offshore gas fields are another emergent green maritime infrastructure.

This green energy infrastructure is set to increasingly replace the fossil fuel infrastructures of oil and gas platforms and pipelines that currently dominate many regional seas environments. The more the dependency on these offshore infrastructures increases, the higher the vulnerabilities and risks related to them.

Since the attacks on the Nord Stream pipelines in 2022 and on the Baltic Connector pipeline in 2023, the protection of these infrastructures has become a major item on the maritime security agenda. The need for better protection of maritime energy infrastructures has been highlighted and discussed in the General Assembly and the Security Council.[178] The 2023 General Assembly resolution, for instance,

> "Urges all States, in cooperation with the International Maritime Organization and other relevant international organizations and agencies, to improve the protection of offshore installations, submarine cables and pipelines and other critical infrastructure by adopting measures related to the prevention, reporting and investigation of acts of violence against such infrastructure".[179]

However, the protection of energy infrastructures has not yet been addressed systematically by relevant United Nations agencies and mechanisms such as UN-Energy and the regional seas conventions. A significant norm deficit exists, for example, in relation to the status of floating energy platforms in UNCLOS,

Image generated with AI. Credit: Adobe Stock.

[178] A/RES/78/69 (2023) and SC/15422 (2023).

[179] A/RES/78/69 (2023), para. 147.

and if and how freedom of navigation can be restricted in the vicinity of the expanding offshore installation through the concept of safety zones. Another concern is how subsea electricity cables and carbon capture projects can be protected in the EEZ or international waters.

As a cross-over issue, the protection of critical offshore energy infrastructures needs to be addressed within UN-Energy, the UNODC, and the counter-terrorism regime.

5.9. Seabed security and mining disputes

The protection of digital and energy infrastructures are part of a wider discussion on peace and security on the seabed. The problem of ensuring seabed peace and security is not new. The 1971 Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil thereof – the Sea-bed Arms Control Treaty mentioned in chapter 5.3 – is a major pillar of the global non-proliferation regime. Non-proliferation challenges, such as unexploded ordinances and mines, remain important seabed concerns. However, new challenges and sources of conflict have emerged that go beyond non-proliferation.[180]

One key source of conflict is the exploitation of mineral resources on the ocean floor. Many minerals that are vital for the green energy transition such as copper, manganese, cobalt, and zinc are found on the seabed. Consequently, efforts to access and mine these resources are increasing and proliferating rapidly.

Seabed mining is addressed in UNCLOS and governed by the International Seabed Authority. However, the Authority has so far not issued a binding code for seabed mining and licensing, and not all States are members of UNCLOS or participate in the Authority. This situation creates legal uncertainty and could lead to conflict over deep sea resources. How the Authority's regulations will be enforced to prevent theft and illegal mining activities is also unclear, as is the broader question of who will monitor seabed activities and their impact on the marine environment and biodiversity.

A related challenge is the protection of marine biodiversity and the global underwater cultural heritage, which includes "all traces of human existence of a cultural, historical, or archaeological nature".[181] This is a major concern of indigenous populations and coastal States and communities that depend on tourism and access to marine resources. Activists and environmental NGOs have already clashed with mining companies and used water cannons to obstruct deep sea mining exploration vessels.

Regulating seabed exploration and mining activities is vital to ensure peace and security at sea and protecting the marine environment. This includes, for example, enhancing the maritime security capacities of the International Seabed Authority to monitor subsea activities and enforce rules and protect the marine environment. Moreover, the 2001 Convention on the Protection of the Underwater Cultural Heritage, which is managed by the United Nations Educational, Scientific and Cultural Organization, provides an important tool to ensure subsea cultural heritage.

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[180] Zalik, Anna. 2018. Mining the Seabed, Enclosing the Area: Ocean Grabbing, Proprietary Knowledge and the Geopolitics of the Extractive Frontier beyond National Jurisdiction. International Social Science Journal 68 (229–230): 343–59.

[181] UNESCO, The 2001 Convention. https://www.unesco.org/en/underwater-heritage/2001-convention.

5.10. Artificial intelligence, autonomous vessels, and maritime security

The emergence of autonomous shipping, controlled by shore-based operators or by artificial intelligence, is changing the maritime security landscape. On one hand, 'maritime autonomous vehicles' offer significant advantages for enhancing maritime law enforcement operations. They can augment capabilities by providing constant surveillance, rapid response to incidents, and efficient patrolling of vast oceanic areas. However, the flip side of this technological advancement is the potential for criminals to exploit such vehicles for illicit activities. For example, armed non-State actors could deploy such vessels to attack merchant shipping, and criminal groups could use them to traffic drugs, weapons, and other illicit products.

Moreover, uncrewed vessels potentially lower the risk to criminals and other malign actors of engaging in illicit activities at sea, such as smuggling or piracy. In particular, the use or targeting of maritime autonomous vehicles could lower the likelihood of detection, injury or arrest, incentivize illicit activities at sea, and lead to an increase in maritime crime, terrorism, and grey zone activities.[182]

Policymakers, maritime authorities, and technology developers need to collaborate to implement robust regulatory frameworks, cybersecurity measures, and enforcement mechanisms, to address these challenges. This includes ensuring that autonomous ships are equipped with suitable surveillance and detection systems and incorporate encryption and authentication protocols to prevent hijacking or unauthorized control.

Multilateral cooperation is also essential to establish standardized protocols and plans for the operation and regulation of autonomous vessels across different jurisdictions. Maritime autonomous vehicles raise new regulatory challenges in relation to vessel safety and accident prevention, including ship collisions that could lead to catastrophic oil spills.

Addressing maritime security challenges associated with autonomous shipping and artificial intelligence is a cross-cutting issue that affects all United Nations institutions and agencies dealing with ocean governance. Yet the issue should also be addressed by the United Nations's growing artificial intelligence regime. This includes the multi-stakeholder High-level Advisory Body on Artificial Intelligence under the Secretary-General, which undertakes analysis and advance recommendations for the international governance of artificial intelligence.[183] UNESCO has produced the first-ever global standard on ethics in this space – the 'Recommendation on the Ethics of Artificial Intelligence'.[184] In March 2024, the General Assembly adopted a resolution on "Seizing the opportunities of safe, secure and trustworthy artificial intelligence systems for sustainable development".[185]

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[182] Sepehri, Arash, Hadi Rezaei Vandchali, Atiq W. Siddiqui, and Jakub Montewka. 2022. The Impact of Shipping 4.0 on Controlling Shipping Accidents: A Systematic Literature Review. Ocean Engineering 243: 110162; Petrig, Anna. 2023. Maritime Security in the Age of Autonomous Ships. In Autonomous Vessels in Maritime Affairs Law and Governance Implications, edited by Tafsir Matin Johansson, Jonatan Echebarria Fernández, Dimitrios Dalaklis, Aspasia Pastra, and Jon A. Skinner, Cham: Springer, 81-96.

[183] High-Level Advisory Body on Artificial Intelligence. https://www.un.org/techenvoy/ai-advisory-body.

[184] UNESCO. Ethics of Artificial Intelligence. https://www.unesco.org/en/artificial-intelligence/recommendation-ethics.

[185] A/78/L.49.

5.11. New sensors and standards for maritime domain awareness

Maritime Domain Awareness (MDA) is critical for maritime security. Promoted worldwide by organizations such as the IMO and the European Union it is a key solution, yet also a challenge. MDA activities aim to provide an effective understanding of activities in maritime spaces, including the detecting and tracking vessels suspected of being engaged in illicit behaviour. MDA is focused on the sharing, fusion and analysis of data from different sensors (terrestrial, surface, air, space), official records, such as from the IMO and flag State registries, as well as reporting by maritime users, including maritime transport and infrastructure industries and pleasure craft.[186]

MDA is vital for the detection of transnational crimes, the coordination of incident responses among agencies and States, but also for the compilation of global statistics and risk maps on maritime security threats. MDA is vital for formulating appropriate maritime security policies on national and international levels. Poor and emerging economies as well as small island developing States rely on MDA to protect their waters and resources against threats such as piracy, smuggling, and illegal fishing.[187] In contrast to global air traffic for instance, there is no international system and agreed standards and procedures for MDA.

Many States operate national MDA centres. A global network of centres provides regional MDA. MDA activities are increasingly sophisticated due to technological advancements in sensor and artificial intelligence technologies.

However, a lack of interoperability through common data-sharing standards and classifications is an important obstacle to effective MDA at regional and global levels. Most States and regional centres operate proprietary systems and classification standards – including the United States' Seavision platform and the European Union's IORIS platform, as well as several commercial providers – which leads to technological fragmentation and limited system interoperability.[188]

A process of standardization of data formats and system interfaces, and the agreement of global threat classifications that draw on international law, is required to address the problem. This should be led concertedly by the Intergovernmental Oceanographic Commission, IMO, and International Hydrographic Organization, in collaboration with the public and private platform and sensor technology providers.

5.12. Green defence: The role of navies in environmental security

Substantial efforts have been made to limit pollution from vessels and reduce carbon emissions. This includes efforts at the IMO to establish legally binding treaty instruments aimed at limiting carbon emissions and to support the adoption of green fuels and technologies in the maritime industry. These efforts

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186 Brewster, David, and Simon Bateman. 2024. Maritime Domain Awareness 3.0: The Future of Information and Intelligence-Sharing in the Indian Ocean. Australian National University and National Security College.

187 Chintoan-Uta, Marin, and Joaquim Ramos Silva. 2017. Global Maritime Domain Awareness: A Sustainable Development Perspective. WMU Journal of Maritime Affairs 16 (1): 37–52.

188 Okafor-Yarwood, Ifesinachi, Oliver Eastwood, Noleen Chikowore, and Lucas De Oliveira Paes. 2024. Technology and Maritime Security in Africa: Opportunities and Challenges in Gulf of Guinea. Marine Policy 160: 105976.

are, however, restricted to commercial and privately operated vessels. They do not address State-operated military or civilian law enforcement vessels. Data on the extent of pollution and emissions from military and civilian law enforcement vessels is limited. However, studies on the United States Navy[189] suggest that large-sized naval fleets – such as those of European States, China, India, and the Russian Federation – are major polluters.[190]

The concept of 'green defence' has recently been coined to limit the environmental impact of militaries.[191] Yet outside specific alliance structures and institutions, such as NATO, no common green naval standards or obligations have been introduced. Nevertheless, green defence issues are rapidly emerging as an important item on the maritime security agenda. Informal groupings, such as the Indian Ocean Naval Symposium for example, have started to discuss the problem and to work towards developing more concrete green standards and technology solutions for naval forces. Greening defence initiatives, if taken seriously, are likely to have capability implications, up to the degree of limiting deterrence or operational capacities and hence should be placed under the non-proliferation agenda. They also raise questions of technology transfer to empower less developed States to achieve green objectives.

Yet navies and coast guards can play an even greater role in environmental security. Military and civilian coast guard forces are vital to protect the marine environment, including conservation management and disaster response efforts. Moreover, navies can contribute to managing climate-related environmental degradations and other problems. Several military services, for instance, have launched programmes in climate mitigation, including the reforestation of wetlands. The human resources, equipment, and logistics of maritime security forces can hence support climate policies and help protect the marine environment to mitigate climate change.

Several United Nations agencies and departments are well-equipped to develop new norms, tools, and practices to enhance the role of navies in green defence and environmental protection. This includes not only the IMO and the United Nations Framework Convention on Climate Change, which already deal with emissions control and climate adaptation, but also the United Nations Office for Disarmament Affairs, which could regulate green defence issues under the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD).

5.13. Preparing for disaster: managing shipping risks in an age of climate change

Oil spills and pollution from shipping are part of the maritime security agenda, as emphasized in Security Council in its open debate on maritime security. The risk of shipping accidents has declined over the last few decades as governments have cooperated with the IMO to develop and implement marine safety rules onboard of vessels.

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189 Crawford, Neta C. 2019. Pentagon Fuel Use, Climate Change, and the Costs of War, Watson Institute, Brown University, https://watson.brown.edu/costsofwar/files/cow/imce/papers/Pentagon%20Fuel%20Use%2C%20Climate%20Change%20and%20the%20Costs%20of%20War%20Revised%20November%202019%20Crawford.pdf.

190 Barry, Ben, et al. 2022. Green Defence: the defence and military implications of climate change for Europe. International Institute for Security Studies.

191 Larsen, Kristian Knus. 2015. Unfolding Green Defense: Linking green technologies and strategies to current security challenges in NATO and the NATO member states. Center for Military Studies, Copenhagen University.

However, shipping accidents still occur relatively frequently, and the risk of catastrophic incidents and oil spills is increasing again. A key driver is climate change.[192] Changing weather patterns increases the likelihood of higher waves, storm surges and other extreme weather events that threaten merchant shipping. Another key driver is the continuing expansion of shipping traffic going through narrow marine choke points or operating in digested areas, where disruptions can have larger network effects.

Shipping accidents can lead to major pollution events and disrupt marine traffic with dramatic and unforeseen consequences for coastal communities and the global economy, as evidenced by the series of spills in the 1980s (e.g. the Exxon Valdez accident). More recent examples include the Ever Given obstruction of the Suez Canal in 2021 disrupting global supply chains and trade to a cost of around USD 17 billion.[193] The 2020 Wakashio oil spill off Mauritius devastated the local tourism industry and fishing grounds, as well a marine biodiversity park and mangrove forest.[194] Many of these accidents happen near small island States and coastal developing States located close to busy shipping lanes. These States experience a lot of vessel traffic in their waters, but they often do not have the capacity to respond to major shipping incidents.

Shipping risks are mainly addressed by the IMO, which develops marine safety and environmental rules aimed at preventing accidents at sea.[195] However, shipping accidents also need to be recognized as unpredictable, sometimes largely unavoidable, events that require disaster response capacities. UNEP's regional seas conventions already aim at building such capacities at the regional level. However, shipping risks and maritime disaster response also needs to be addressed at the global level and become part of the agenda of the United Nations Office for Disaster Risk Reduction. In addition, shipping risks and disasters should be considered in the United Nations's climate change response and form part of efforts to build adaptation capacities and to help States and communities adjust to the consequences of climate change.

5.14. Securing 30x30 by enforcing law in marine protected areas

In 2022, the COP 15 meeting of the Convention on Biological Diversity agreed to the ambitious 30x30 target – that is to designate 30 per cent of Earth's land and ocean space as environmentally protected areas by 2030.

Marine protected areas (MPAs) conventionally draw on science-based, multi-stakeholder marine spatial planning processes. Marine spatial planning is currently considered the most effective tool to manage potential multi-use conflicts between different ocean users, such as the energy, transport and fisheries sectors. It also helps to identify the most sensitive and vulnerable marine ecosystems and contributes

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[192] Allianz Global 2022. Safety and Shipping Review 2022. Munich: Allianz.

[193] Lee, Jade Man-yin, and Eugene Yin-Cheung Wong. 2021. Suez Canal Blockage: An Analysis of Legal Impact, Risks and Liabilities to the Global Supply Chain. MATEC Web of Conferences 339: 01019.

[194] Rajendran, Sankaran, et al.. 2022. History of a Disaster: A Baseline Assessment of the Wakashio Oil Spill on the Coast of Mauritius, Indian Ocean. Marine Pollution Bulletin 175: 113330.

[195] Tarelko, Wieslaw. 2012. Origins of Ship Safety Requirements Formulated by International Maritime Organization. Procedia Engineering 45: 847–56.

to the development of targeted protective measures, such as tailored disaster response plans or fully closing areas to marine activities. However, while the debate on science-based planning tools and regulations is well advanced, its relation to issues of maritime security is less well understood.[196]

The maritime security agenda, first, raises questions about enforcement capacities and deterrence and interdiction operations at sea, including maritime monitoring and surveillance to detect criminal and other suspicious behaviours. Without such protective capacity, the conservation and restoration goals of MPAs will be hard to achieve. For example, MPAs might attract illicit fishing operators seeking to exploit their rich biodiversity. They could also be favoured by criminals because there are fewer users – such as fishing boats and transport vessels – that could spot their illicit activities. This suggests the need for better integrating maritime security capacity requirements in marine spatial planning and the establishment of MPAs.

Second, maritime security thinking draws attention to the wider consequences of MPAs on human security. Studies of conservation efforts – both on land and at sea – indicate that protected areas can have negative consequences for local populations and deny communities access to fishing grounds and other sources of income. Conservation also risks human–wildlife conflicts and incentivizes environmental crimes. If not managed carefully, MPAs can fuel local insecurity.[197]

Several United Nations institutions can address these issues and help to integrate maritime security thinking into the 30x30 agenda. These include environmental protection instruments and agencies such as the Biodiversity Convention and UNEP. Other United Nations organizations that could be part of this effort are agencies such as the FAO, which focuses on food security, including IUU fishing, and the UNODC through its Global Maritime Crime Programme.

5.15. The maritime security implications of the new high seas treaty

In 2023, negotiations concluded for a new major agreement under UNCLOS. With ratification ongoing, the agreement on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction provides a new legal instrument for governing international waters. Most importantly, the agreement creates a framework and process for the creation of MPAs on the high seas. The agreement thus has potentially far-reaching implications for ocean governance, many of which have yet to be discussed and evaluated.[198]

Thes implications include maritime security issues. The agreement has so far been understood primarily as an environmental instrument. Its consequences for peace and security, however, have not yet been considered,

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196 Dupont, Clément, Françoise Gourmelon, Catherine Meur-Ferec, Frédérick Herpers, and Christophe Le Visage. 2020. Exploring Uses of Maritime Surveillance Data for Marine Spatial Planning: A Review of Scientific Literature. Marine Policy 117: 103930.

197 De Santo, Elizabeth M. 2020. Militarized Marine Protected Areas in Overseas Territories: Conserving Biodiversity, Geopolitical Positioning, and Securing Resources in the 21st Century. Ocean and Coastal Management 184: 105006.

198 Mendenhall, Elizabeth, and Rebecca R. Helm. 2024. When the 'Best Available Science' Is Not Good Enough: The Need for Supporting Scientific Research in the United Nations Treaty to Protect Biodiversity beyond National Jurisdiction. Marine Policy 161: 105940.

Very large school of scalloped hammerhead sharks in Galapagos, world heritage site of Ecuadorian Pacific. Credit: Janos / Adobe Stock.

including the military and security implications of establishing high seas MPAs. The agreement raises major law enforcement issues such as which authority will monitor and police high sea MPAs and what capacities will be required to do so. It is also unclear what laws will be applied for interdictions and to detain, prosecute, and sanction criminals in these areas. It is likely that additional regional institutions and burden-sharing agreements will be required to address these questions and to secure high seas MPAs in an orderly manner.

The status of military vessels and activities in high seas MPAs also remains unclear. The question was explicitly excluded from the agreement text to avoid controversies. However, the agreement raises the question of if and how future high seas MPAs will affect freedom of navigation of military vessels. This includes whether military actors can conduct exercises and other operations in these areas, such as intelligence gathering and other dual-use research activities – the legality of which is currently disputed in EEZs.

Implementing the agreement will require Member States to discuss these issues and address them as part of the global maritime security agenda.

5.16. Climate change, sea level rise and small island States

The group of small island developing States (SIDS) at the United Nations includes 39 Member States and 18 Associate Members. These States and territories have a combined population of around 65 million people and face unique maritime security challenges that require tailored international attention.174

For many SIDS rising sea levels due to climate change and global warming are an existential threat. SIDS and other coastal developing States will lose territory and might be forced to resettle populations due to sea level rise. Climate threats include flooding, hurricanes, cyclones and other extreme weather events that damage infrastructures and destroy villages and towns, leading to major environmental and humanitarian disasters. SIDS often do not have the financial and technical capacities to address these challenges on their own. Sea level rise will also change coastlines and could lead to maritime territorial disputes over marine boundaries, resources and islands.[199]

Moreover, SIDS have significant EEZs that are, on average, 28 times larger than their land mass. SIDS depend on marine resources such as fish for their economic growth and development and to provide jobs, food, and income for their populations. The biodiversity found in these waters also has deep cultural value for SIDS and is part of humanity's global maritime heritage.[200]

However, SIDS often lack the naval or coast guard capacities to protect their EEZs and marine resources and biodiversity and to fulfil their international obligations in securing merchant shipping and governing their marine environment. For example, as chapter 4 demonstrates, SIDS and other developing coastal States often struggle to prevent illegal fishing and to respond to shipping accidents and oil spills in their large EEZs.

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[199] Taylor, Subhashni. 2021. The Vulnerability of Health Infrastructure to the Impacts of Climate Change and Sea Level Rise in Small Island Countries in the South Pacific. Health Services Insights 14: 117863292110208.

[200] Chan, Nicholas. 2018. 'Large Ocean States': Sovereignty, Small Islands, and Marine Protected Areas in Global Oceans Governance. *Global Governance* 24 (4): 537–55.

SIDS require dedicated maritime security support to address these challenges, including loss of territory and marine habitats due to rising sea levels and climate-related extreme weather events, as well as assistance in governing and protecting their EEZs and marine resources and biodiversity.

United Nations processes and institutions such as the Framework Convention on Climate Change, the United Nations Human Settlements Programme, the United Nations Development Programme, and the United Nations Office for Disaster Risk Reduction could help SIDS to address the environmental, humanitarian, and developmental consequences of climate changes and rising sea levels. Support from DOALOS, moreover, is crucial to help SIDS to identify and delimit their maritime boundaries and to resolve inter-State disputes over maritime territories and boundaries.

5.17. The outer space/ maritime nexus

The low orbit and maritime domains have become more closely connected. However, little attention has been paid to this nexus in either the space or maritime security debates. It is driven by several emerging concerns.

Through the expanding global navigation satellite systems and the move to digital maritime navigation, supply chain management and autonomous vessels, maritime activities are increasingly dependent on the safety and security of outer space. Satellite-enabled surveillance is also an important component of maritime domain awareness and traffic management, including the Automated Identification System and other navigation and ship-tracking systems as well as data from optical and electronic frequency emission sensors.

Interference with satellite-based navigation, surveillance and communications, as has been witnessed in regions such as the Baltic and Black seas, carries the risk of marine accidents as well as 'dark' vessels engaging in illicit activities. As discussed under the cybersecurity challenge, tampering with these systems could also facilitate blue crimes or sanctions evasion.

Moreover, space debris from launches, accidents and out of service satellites presents a risk to maritime transport and installations. While no direct incidents are on record so far, the intensification of both space and maritime activities means that such risks will increase and that they need be managed and mitigated to prevent accidents.

Finally, the space industry is experimenting with new offshore launch platforms which raise new maritime security threat scenarios, and such platforms will require physical and cyber protection by security forces.

These developments call for an enhanced mutual awareness between space and maritime security professionals and a consideration of the nexus under the agenda of the Office for Outer Space Affairs, the space security negotiations within the General Assembly, as well as the consideration of space security under the bodies that discuss aspects of maritime security.

5.18. Human security: Indigenous people and coastal communities

Maritime insecurities have significant impacts on the people and communities who use the sea or live in coastal regions, including indigenous peoples. They thus have significant implications for human security. Thinking about maritime security in these terms refocuses

attention from the State to the individual. It also calls for a response which prioritizes the voice, livelihoods and well-being of those living in coastal regions. In many countries, these are often some of the most vulnerable and politically excluded members of society.

There are multiple ways in which maritime insecurities can impact human security. The most obvious are risks that pose direct threats to the safety and well-being of individuals. This might include seafarers kidnapped or otherwise victimized by pirates, or violence perpetrated against local people by illegal fishers or other maritime criminals of various sorts. Other impacts are indirect. Rampant over-fishing for example, whether legal or illegal, can destroy fish stocks, damage livelihoods, and undermine the food security of local fishing communities. This may tempt people into engaging in maritime crimes such as smuggling or piracy as an alternative source of income.

> Human rights are universal and apply equally at sea as they do on land. However, 'there is significant and growing evidence of widespread, deliberate, and often **systematic abuse of human rights at sea**'.

In some cases, States themselves threaten the livelihoods and well-being of their citizens. Maritime enclosures of various sorts can restrict local communities' access to the sea and impact traditional practices such as artisanal fishing (see 5.13 above). Enclosures are often put in place for ostensibly laudable environmental and ecological reasons, for example the creation of MPAs, the introduction of fishing licensing or quota systems, while other enclosures are the result of blue economy initiatives such as coastal tourism, windfarm developments or oil and gas extraction at sea.

However, there is generally a trade-off between the benefits of such activities and their impacts on local people. When implemented sensitively, and with appropriate engagement with effected communities, these initiatives can successfully balance between benefit and harm, and often secure buy-in from communities. Yet corruption, rapacious resource extraction, and militarized enforcement can lead to the effective expropriation of marine spaces from coastal peoples who may have used them for generations.

Human security-focused responses in maritime security generally entail solutions based around development approaches and community representation in decision-making processes. The aim is to address the root causes of maritime insecurities, and to pursue global justice in the maritime domain. They therefore implicate a wide range of United Nations bodies and agencies with development responsibilities, including the United Nations Development Programme, the Office for Sustainable Development, UN-Women, the Human Security Unit, and the Permanent Forum on Indigenous Issues, among others.

As in other areas covered in this report, the key task for the United Nations in this area is to recognize the distinctive challenges posed by the maritime domain in this regard, and to translate between existing United Nations development approaches and regimes, including those on environmental protection (UNEP), fisheries (FAO), and maritime crime (UNODC).

5.19. Human rights at sea

Human rights are universal and apply equally at sea as they do on land. However, "there is significant and growing evidence of widespread, deliberate, and often systematic abuse of human rights at sea".[201] These abuses include issues as diverse as forced labour and slavery on fishing vessels and other ships, the abandonment of seafarers in ports far from home, the victimization of seafarers by pirates and other maritime criminals, instances of physical and sexual abuse on ships, the treatment of irregular migrants and the plight of trafficked people at sea.

The application of human rights laws and norms faces unique challenges in the maritime domain, and so requires a tailored response. This is due first to the special legal status of the oceans, which means that large areas of the sea are beyond the territorial jurisdiction of States. Under these circumstances, UNCLOS assigns responsibility for the maintenance and enforcement of human rights standards at sea to flag States, whose capacity and willingness to do so varies widely. At the same time, the relative opacity and isolation of human activities at sea means that identifying human rights abuses when they occur is difficult and often reliant on voluntary reporting by ships' masters or crew.

Users of the sea are diverse and multinational, with human rights standards differing greatly between actors and sectors. Those wishing to avoid scrutiny of their activities can do so in multiple ways, such as changing the flag or registration details of their vessels. Beneficial ownership may be deliberately obscured through shell companies and other strategies. Maritime law enforcement agencies may lack the capacity, expertise, or authority to monitor and investigate human rights abuses, even when they take place in their own territorial waters or EEZs. Law enforcement activities at sea may also lead to human rights abuses themselves, as for example when 'push back' tactics are used against irregular migrant boats.

The enforcement of human rights standards at sea generally falls to States, whether in their capacity as flag, coastal or port States. However, the protection of human rights for all people, whether at sea or on land, is a collective responsibility of the international community. [202]

The United Nations has a key role to play in this regard. However, doing so implicates three distinct international legal regimes.

The first of these is the law of the sea, particularly UNLOS,[203] but also agreements under the auspices of the IMO, such as the International Convention for the Safety of Life at Sea, which specifies minimum safety standards for ships at sea, and the Cape Town Agreement of 2012 which regulates fishing vessels.

Second, is the international labour law regime. The key United Nations agency here is the International Labour Organization. Relevant agreements include the Maritime Labour Convention of 2006, which details seafarers' rights and port State obligations, and the Work in Fishing Convention of 2007, which regulates working conditions on board fishing vessels. While both conventions have implicit human rights

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[201] Human Rights at Sea, Geneva Declaration on Human Rights at Sea, January 2022: 3. **https://www.humanrightsatsea.org/GDHRAS**.

[202] Noussia, Kyriaki. 2017. The Rescue of Migrants and Refugees at Sea: Legal Rights and Obligations. Ocean Yearbook Online 31 (1): 155–70.

[203] Treves, Tullio. 2010. Human Rights and the Law of the Sea. Berkeley Journal of International Law 28 (1): 1–14.

implications, neither are designed to function as human rights instruments, and neither are comprehensive.[204]

Finally, there is the United Nations human rights regime itself, including the Universal Declaration of Human Rights and related conventions, the Human Rights Council, and the Office of the United Nations High Commissioner for Human Rights. However, the work of these bodies has to date focused primarily on human rights on land. Far less attention has been paid to the specific demands and vulnerabilities of the maritime domain.

There is a need for a joined-up United Nations response to the challenge of protecting human rights at sea, that can translate between the three legal regimes above and incorporate other relevant agencies such as the IOM. Specific actions should be considered to kickstart this process, for example considering flag State responsibilities in the Universal Periodic Review of the Human Rights Council. A future comprehensive treaty on human rights at sea should also not be ruled out.

5.20. Passenger ship security

The leisure cruise industry is witnessing a significant boom. New generations of mega-ships carry more than 3,5000 passengers, and welcome more than 30 million passengers annually. The world's largest cruise ship, the Icon of the Seas, has a capacity of 5,610 passengers and 2,350 crew members – the size of a small city. Most of these ships fall under the jurisdiction of open registries, such as the flag State authorities of Panama or the Bahamas, which have limited capacities for protection and law enforcement.

The security of passenger ships, ferries and cruise liners has been a major concern, since the hijacking of the Achille Lauro in 1985 at least. These concerns have been exacerbated by maritime terrorism attacks such as the sinking of the MV Super Ferry in 2004. While no major incidents have occurred since then, attacks and hijackings of cruise liners must be taken seriously as a threat, although these ships generally avoid high-risk areas.

However, terrorism is not the only security challenge associated with cruise vessels. Other concerns are the role of cruise liners in facilitating illicit movements, including of irregular migration, environmental crimes linked to those ships, such as the dumping of waste or ballast water, as well as crimes and human rights violations committed on board a ship towards passengers or crew members. According to the US Federal Bureau of Investigation, for instance, sexual assaults on board cruise lines have seen a significant rise in recent years.[205]

Since crimes on board ships fall under the jurisdiction of the flag States, the majority of which have limited if any reporting requirements, or the capacity to investigate crimes, on-board security is in the hands of private security companies, many of which are minimally equipped.[206]

Other issues arise in relation to health security and accidents. As evidenced by the high

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[204] Wilhelm, Miriam, Alin Kadfak, Vikram Bhakoo, and Kate Skattang. 2020. Private Governance of Human and Labor Rights in Seafood Supply Chains – The Case of the Modern Slavery Crisis in Thailand. Marine Policy 115: 103833.

[205] Hiatt, Gabe. 2024. Sexual assaults on cruise ships are rising. Washington Post, 17 January 2024. https://www.washingtonpost.com/travel/2024/01/10/sex-assault-cruise-ship-reports/.

[206] Panko, Thomas R. and Tony L. Henthorne. 2019. Crimes at Sea: A Review of Crime Onboard Cruise Ships. International Journal of Safety and Security in Tourism/Hospitality 20:1–24.

Image generated with AI. Credit: Adobe Stock.

number of cruise ships stranded during the COVID-19 crisis, with no port State willing or obliged to allow offboarding, passengers can be exposed to significant health security risks. The Costa Concordia incident of 2012 provides another threat scenario. In this accident, which happened close to the Italian shore, more than 3,000 passengers and 1,000 crew members had to be evacuated. Italian search and rescue operations were quickly launched and only 33 people died. Yet, many contemporary cruise liners sail in areas where search and rescue capacities are severely limited. In some cases, such as the waters of small island States of the Caribbean or Pacific, the number of people on board a cruise liner might even exceed the population of the island by which the ship is passing.[207]

The ongoing expansion of the cruise line industry will exacerbate such risks and insecurities and calls for a range of measures. These might include a tighter international regime for the registration of passengers, minimum standards for criminal codes and law enforcement on board vessels in the major flag States, which could be addressed through the IMO, the World Tourism Organization, and the International Code for the Protection of Tourists, as well as support in developing contingency plans for the small island States, including through processes of the United Nations Office for Disaster Risk Reduction.

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[207] Mileski, Joan P., Grace Wang, and L. Lamar Beacham. 2014. Understanding the Causes of Recent Cruise Ship Mishaps and Disasters. Research in Transportation Business & Management 13: 65–70.

6. Findings and Recommendations: Towards new multilateral solutions

This report has provided a mapping of the global governance of maritime security and outlined the established and emerging challenges that fall under this agenda.

The United Nations is approaching the oceans and marine environment in an increasingly encompassing process under the sustainable development, and economic and social affairs agenda, including through UN-Oceans. However, the same cannot be said for the United Nations architectures on peace and security and human rights. Peace and security and human rights are not adequately featured in the UN-Oceans processes, nor have the respective architectures found a structured way to engage with maritime security in a coherent and holistic manner. In consequence, large parts of the United Nations architecture remain 'sea blind'.

The acceleration of maritime activities, humanity's growing dependency on the seas, and the sheer scale of established and emerging maritime security challenges, call for more structured and sustained efforts to address maritime security within the United Nations system. We propose to structure this process in four layers:

1. developing scenarios for a dedicated United Nations body on maritime security;
2. working towards global integrated assessments of maritime security structures and challenges;
3. systematically addressing norm deficits in existing institutions and through considering new legal instruments; and
4. revitalizing regional seas agreements to incorporate maritime security.

6.1. Institutional renewal: A new United Nations body for maritime security?

As the report has shown, the United Nations lacks an institutional structure to address maritime security comprehensively. Neither the General Assembly's ocean affairs and law of the sea process, the selected focus of the Security Council, nor the assemblies of the United Nations agencies proactive in maritime security, such as the IMO or UNODC, have as sufficient mandate or legitimacy on their own to deal with maritime security challenges comprehensively and to bring strategic coherence to the United Nations efforts. The need for developing a better comprehensive structure has already been noted and observed, for instance, in the Security Council's debate on maritime security of 2021.[208]

An institutional mechanism will firstly have to address the task of more effectively mainstreaming maritime security across the United Nations system. This entails, for instance, ensuring that the maritime domain is substantially considered in the crisis prevention or peacebuilding architecture, but also in the more concrete

[208] Letter dated 26 July 2021 from the Permanent Representative of India to the United Nations addressed to the Secretary-General and the President of the Security Council, S/2021/680-EN, Maintenance of international peace and security: Maritime security - Security Council, VTC Open debate, available at https://webtv.un.org/en/asset/k1d/k1dw6hz1mp and https://press.un.org/en/2021/sc14598.doc.htm.

workstreams on human rights, disarmament, cybersecurity and space security. Expertise on naval matters and maritime law enforcement needs to be more fully considered in the United Nations's ocean governance processes – such as UN-Oceans, SDG 14, and the agreement on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction – but also more broadly, the biodiversity regime, and climate change regime.

> The acceleration of maritime activities, humanity's growing dependency on the seas, and the sheer scale of established and emerging maritime security challenges, call for **more structured and sustained efforts to address maritime security** within the United Nations system.

Secondly, more efforts are required to facilitate coherence, mutual lessons learned and transfer of best practices across regions and maritime security issues. This includes better harmonizing the work of the five main United Nations agencies at the strategic and policy levels. It also means ensuring that the mandates on 'marine safety', 'port security', 'fisheries control', 'crime prevention', and 'border management' are considered as integrated parts of maritime security issues. These mandates require common structures across different national and regional stakeholders and should not be treated as functionally separate. This will enhance the effectiveness of capacity-building and technical assistance and avoid duplication and overlap. It also implies improving the relationship among United Nations initiatives, and those that take place on a bilateral, minilateral or regional level.

Thirdly, and as discussed below, more comprehensive assessments, work towards legal norms and common standards, and the institutionalization of regional maritime security regimes need to be facilitated to provide more solid structures for maritime security.

Any such mechanism will need legitimacy from both the Security Council and General Assembly. It is recommended that the Secretary-General convene a high-level panel on security at sea which can work out concrete options for institutional arrangements, addressing legal gaps and mainstreaming maritime security across the United Nations system.

Potential scenarios could include developing a 'United Nations Office on Maritime Security' based in the Secretariat, as a subsidiary body to the Security Council, or operating independently. The United Nations Global Counter-Terrorism Coordination Compact could serve as role model for developing comprehensive structures.[209] A special representative could be appointed. Global maritime security could also be strengthened by integrating this work stream into the mandate of UN-Oceans or DOALOS. A United Nations trust fund on maritime security could ensure that technical assistance and capacity-building is coordinated, and agencies do not compete over donor funding.

6.2. Assessments

Substantial efforts have been made to enhance the quality of knowledge available to maritime security analysts, policymakers and

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209 United Nations. UN Global Counter-Terrorism Coordination Compact, https://www.un.org/counterterrorism/global-ct-compact.

practitioners, including through the network of regional maritime domain awareness centres, as well as issue specific reporting mechanisms. However, no comprehensive and integrated assessments based on common standards, frameworks or methodologies exist at regional or global levels.[210] This limits the scope of international responses as there is lack of guidance for regional and global trends.

The scattered state of knowledge also implies that no formal standards, measures or sustainability indicators exist that could guide States in their ambitions or that could identify the gaps that international capacity-building must fill. This puts the long-term sustainability of capacity-building work at risk and implies a politicization of maritime security including through geopolitical dynamics, where capacity-building does not follow technical criteria but rather alliance behaviour and favouritism.

The United Nations frameworks for disaster response and counter-terrorism provide important templates showing how integrated frameworks can provide for solid reviews, identification of gaps, and integrated programmes of action.[211]

These frameworks also indicate how social and natural science can be better integrated. While it is a dogma in ocean governance as well as other areas of global governance that policies should be science-based, maritime security governance has not made much use of science so far. Maritime security studies has matured and increasingly incorporates research on law of the sea, traditional naval strategy, maritime crime, and maritime safety.[212] It provides insights for threat assessments, identifies legal gaps, and sheds light on when and how capacity-building fails, which national and regional approaches to maritime security work, and what root causes drive maritime insecurity. Such scientific results should be featured in processes such as the World Ocean Assessment (see chapter 3.1.3), but also translated to other processes including in the reporting work of the 'big five' United Nations maritime security agencies.

6.3. Norm development: refining and complementing UNCLOS

The contemporary maritime security agenda puts pressure on and partially challenges UNCLOS in ways discussed above. This has led to a discussion on whether the treaty is fit for purpose, contestations over the universal applicability of UNCLOS to all maritime activities in the Security Council, and calls for revisiting the United Nations's maritime treaties and conventions.[213]

While the vast majority of States share the opinion that current law is sufficient and no new

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[210] See Bueger, Christian. 2024. Not yet comparable? Maritime security and the mess of epistemic infrastructures, In Comparisons in Global Security Politics", edited by Thomas Mueller, Mathias Albert and Kerrin Langer, Bristol: Bristol University Press, 109-127. First attempts to develop global assessments were made by the US advocacy organization Stable Seas, see https://www.stableseas.org/services.

[211] On disaster response, see https://www.undrr.org/implementing-sendai-framework/what-sendai-framework and on counter-terrorism see https://www.un.org/counterterrorism/cct/publications-reports.

[212] Bueger, Christian and Timothy Edmunds. 2024. Understanding Maritime Security. Oxford: Oxford University Press.

[213] Mgeladze, Mariam. 2023. UK House of Lords Inquiry: Is the UN Convention on the Law of the Sea Still Fit for Purpose? Journal of Territorial and Maritime Studies 10 (1): 79–91. Security Council Report. 2024. Houthi Red Sea Attacks: Vote on a Draft Resolution, What's in Blue?, 10 January 2024, https://www.securitycouncilreport.org/whatsinblue/2024/01/houthi-red-sea-attacks-vote-on-a-draft-resolution.php.

norms, laws or treaties are required, the legal expert community has called for consideration of how a stronger legal system can address questions such as the protection of subsea data cables and offshore installations, maritime cybersecurity, or uncrewed systems.

None of the ocean governance institutions, such as UN-Oceans and the United Nations ocean conferences, nor informal processes, such as through the G-7, G-20, or informal regional institutions (e.g. MDA structures and professional forums) are equipped to provide global mechanisms to address this gap. While they are important bottom-up processes that can feed formal debates, working towards legal clarity and norm development requires a General Assembly process. This could include a dedicated maritime security working group of the General Assembly committees, supported by DOALOS.

6.4. Maritime security strategies for regional seas

Regional seas cooperation is vital to address maritime security challenges and needs to complement national and global responses to ensure ecosystem-driven and functional responses to maritime security. While regional seas are interconnected, and many challenges are global in nature, for example global transport and climate change, many maritime security challenges differ across regions – for instance, patterns of crime, spillover from armed conflict, or the resilience of infrastructure systems.

A plethora of regional mechanisms provides maritime security functions (see chapter 3.2). For instance, Codes of Conduct, professional forums, and maritime domain awareness systems aim at regional information-sharing and often operational coordination. With minor exceptions it is characteristic for these regional entities to rely on informal arrangements, such as declarations or memorandums of understanding, rather than legally binding treaties. Informal governance provides flexibility and enables rapid responses, but also implies a lack of accountability and can hinder the advancement of common standards and procedures, or the effective pooling of resources. In some regional seas environments, the absence of formally binding agreements can also enhance the dependency on the capabilities of extra-regional States and their interests.

Formalizing and institutionalizing informal arrangements by revitalizing regional seas conventions to incorporate maritime security would be one way to help address these challenges. Many regional seas conventions already provide a legal basis for cooperation between maritime security forces and information-sharing, for example. While the conventions are currently supported and facilitated by UNEP, broadening their focus beyond marine protection and safety will require close regional cooperation by the big five United Nations agencies in collaboration with regional organizations such as the Intergovernmental Oceanographic Commission and the Indian Ocean Rim Association. In some regional contexts, existing treaties on zones of peace could also be integrated.

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