United Nations
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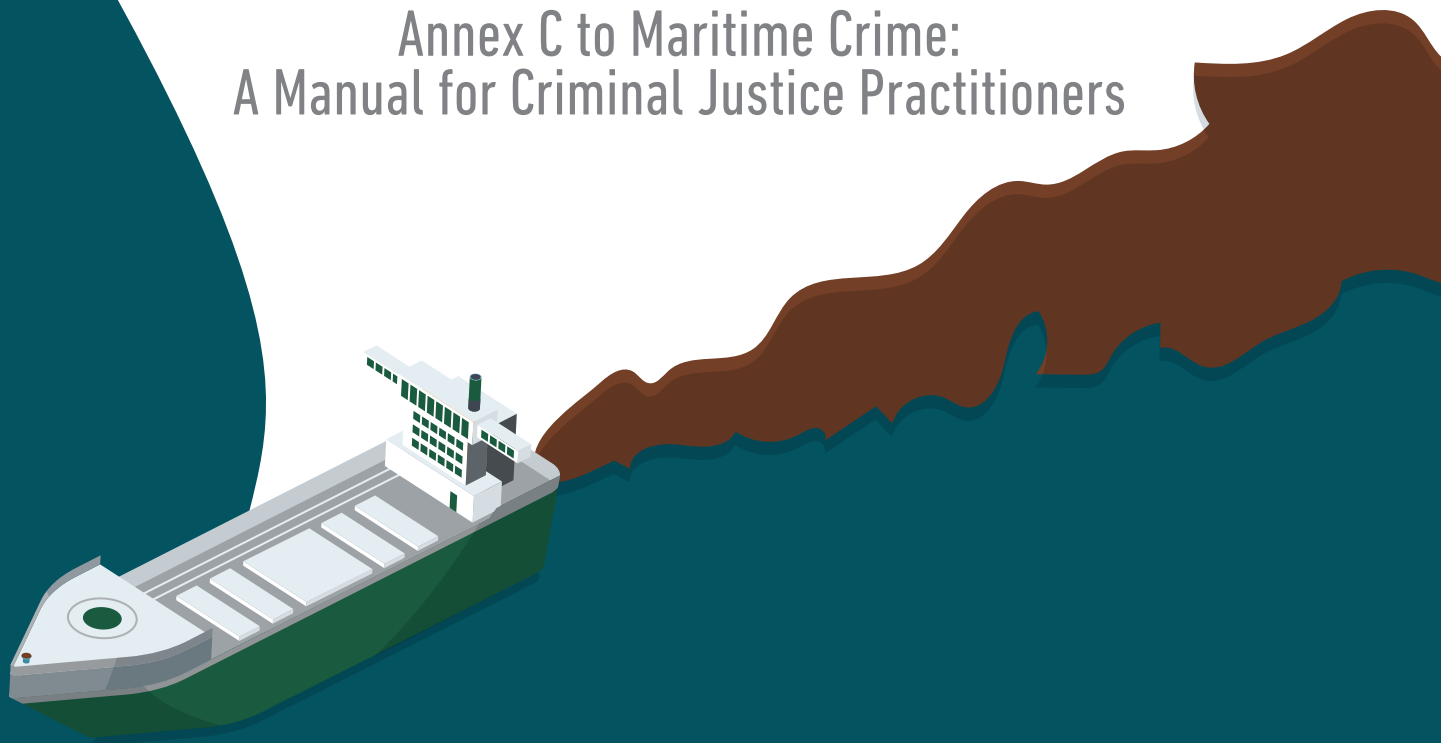
LEGAL MANUAL

POLLUTION CRIMES IN THE MARINE ENVIRONMENT

Annex C to Maritime Crime:
A Manual for Criminal Justice Practitioners



GLOBAL MARITIME
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UNITED NATIONS OFFICE ON DRUGS AND CRIME
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Legal Manual on Pollution Crimes in the Marine Environment

Annex C to Maritime Crime: A Manual for Criminal Justice Practitioners

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INTRODUCTION

The oceans encompass one of the largest global commons - the high seas - and are undergoing significant degradation due to overexploitation of marine resources, marine pollution, and other human impacts, including criminal activities. As rightly observed, "this trend has continued to the extent that, today, there are warning signs that the oceans are at a tipping point, owing to the impacts of pollution and other environmental stresses caused by anthropogenic activity".[1] The protection of the marine environment should be considered as an urgent common concern of humankind, in common with other environmental issues such as the protection of the global atmosphere and the conservation of biological diversity.[2]

Harm to the marine environment, including marine pollution, stems from various human activities. These include pollution from land-based sources, pollution from seabed activities subject to national jurisdiction, pollution from activities in the international seabed area (henceforth Area), pollution by dumping, pollution from vessels, and air pollution. Markedly far-reaching, and very difficult to address, are the effects of the increasing concentrations of greenhouse gasses in the atmosphere as a result of anthropogenic emissions. One consequence of this development is ocean acidification, which results from the mixing of carbon dioxide in the atmosphere with sea water to form weak carbonic acid.[3] Another pressing consequence of increasing greenhouse emissions is sea level rise caused by the thermal expansion of seawater and the melting of land-based ice in the polar regions.[4]

Addressing marine pollution entails a number of challenges, including those posed by the legal nature of the maritime domain itself, with significant areas beyond the outer limits of the territorial sea ('international waters').[5] In contrast to land pollution, over which the territorial State assumes the key role, in international waters, there is no 'territorial State' as such. Responsibility to ensure the protection of the marine environment is delegated to the coastal State in the Exclusive Economic Zone (EEZ), where applicable,[6] and to the flag States on the high seas. Significantly, one of the most fundamental principles of the law of the sea is that all States enjoy the freedom of navigation on the high seas, which is inexorably linked with the principle of the exclusive jurisdiction of the flag States over their vessels.[7] Practically, thus, there is very limited room for third States' involvement in the oceans, leaving the fight against marine pollution to the flag States, which often are either unable or unwilling to effectively address the scourge of marine pollution[8].

1 J. Harrison, *Saving the Oceans Through Law: The International Legal Framework for the Protection of the Marine Environment* (Oxford: Oxford University Press, 2017), 1.

2 See 1992 United Nations Framework Convention on Climate Change (UNFCCC) (EIF 21 March 1994), preamble; 1992 Convention on Biological Diversity (CBD) (EIF 29 December 1993), preamble. See also EJ Goodwin, *International Environmental Law and the Conservation of Coral Reefs* (Routledge 2011) 31–3.

3 See: Biological Impacts of Ocean Acidification Group, *Exploring Ocean Changes: Biological Impacts of Ocean Acidification* (2017).

4 See, amongst others, A. Camprubí, *Statehood under Water Challenges of sea-level rise to the continuity of pacific island states* (2016) 78; International Law Association's Committee on International Law and Sea Level Rise, Sydney Conference Report (2018)

5 The territorial sea is up to a limit not exceeding 12 nautical miles (n.m.) measured from baselines. See Article 3 of the UN Convention on the Law of the Sea (Montego Bay, 10 December 1982, in force 16 November 1994) 1833 UNTS 3 (UNCLOS). The maritime areas falling beyond the outer limits of the territorial seas are commonly referred to as 'international waters', since they are not subjected to the sovereignty of any State, while all States enjoy certain freedoms; see Articles 89 and 87 of UNCLOS respectively.

6 The Exclusive Economic Zone (EEZ) is an area beyond and adjacent to the territorial sea not exceeding beyond 200 nm from the baselines, in which the coastal State, should it declare one, enjoys certain sovereign rights and jurisdiction, while other States enjoy the freedoms of navigation, overflight, and the freedom of laying submarine cables and pipelines; see: Articles-56-58 UNCLOS, ibid.

7 See Articles 87 and 92 UNCLOS, ibid. As the International Tribunal for the Law of the Sea (ITLOS) opined in the M/V Norstar case, "the notions of the invalidity of claims of sovereignty over the high seas and of exclusive flag State jurisdiction on the high seas are inherent in the legal status of the high seas being open and free. When Article 87 of the Convention is being interpreted, therefore, Articles 89 and 92 of the Convention may be relied upon"; ITLOS, *The M/V Norstar case (Panama v. Italy)* Case No. 25, Judgement of 10 April 2019; para 218.

8 For more information on flag state jurisdiction over crimes at sea, see UNODC GMCP's Issue Paper on Flag State Jurisdiction and Transnational Organised Crime at Sea (2023),

In any case, a significant tool that could be used to assist in altering the trajectory of the oceans to one of recovery is that of criminal law. According to INTERPOL and UNEP, crimes that affect the environment are estimated as the world's fourth-largest criminal enterprise, with criminals exploiting feeble law enforcement and differences in approaches taken by various countries. Pollution crimes in the marine environment have evolved into a low-risk, profitable business, where criminals exploit areas beyond national jurisdiction, inadequate national environmental legislation, and meagre law enforcement capabilities. As such, addressing pollution crimes in the marine environment both at the national and international levels is necessary for the conservation and sustainable use of oceans (SDG 14).[9]

The relevance of criminal law in the protection of the marine environment is further underscored by high profile criminal cases involving marine pollution. These include both disasters caused by oil tankers - the Torrey Canyon (1967), Amoco Cadiz (1978), Exxon Valdez (1989), Erika (1999), and Prestige (2002),[10] - and criminal law cases related to marine pollution more generally - Princess Cruise Line (2017),[11] United States Royal Caribbean Cruises Ltd. (1998),[12] and the case of 'Ecomafia' (2011).[13] Taken together, these cases illustrate the importance and the relevance of criminal law in the protection of the marine environment. A very recent incident off Sri Lanka involving X-Press Pearl vessel,[14] and the related ongoing criminal proceedings, further underscore this point.

A robust criminal justice response is needed to complement other models of addressing marine pollution, such as civil liability. Moreover, the nexus between marine pollution, climate change, and biodiversity loss demands that environmental considerations are integrated into all forms of decision-making concerning the oceans and climate change, including in the relevant criminal justice decision-making processes. In this regard, it is the concept of 'environmental harm' as 'public harm' that should be factored in such criminal processes. 'Public harm' generally refers to the gravity of the offence in terms of its tangible adverse consequences (as effects are often irreversible), and provided there is sufficient evidence, the concept of harm to the public interest is an important consideration for the criminal justice practitioners to initiate criminal proceedings.

Combating crimes that affect the environment, including the pollution crimes in the marine environment, through criminal law is not a novel idea, yet it has attained greater prominence in recent years. State Parties to the Organized Crime

9 See UN Global Goal No 14: 'Conserve and sustainably use the oceans, seas and marine resources for sustainable development'; <https://www.globalgoals.org/goals/14-life-below-water/>

10 See V. Frank 'Consequences of the Prestige Sinking for European and International Law' (2005) 20 International Journal of Marine and Coastal Law 1 –64.

11 "Princess was convicted and sentenced in April 2017 and fined $40 million after pleading guilty to felony charges stemming from its deliberate dumping of oil-contaminated waste from one of its vessels and intentional acts to cover it up. This was and remains the largest-ever criminal fine for intentional pollution from ships." ; see Office of Public Affairs. (2022, January 12). Princess Cruise Lines pleads guilty to second revocation of probation. United States Department of Justice. https://www.justice.gov/opa/pr/princess-cruise-lines-pleads-guilty-second-revocation-probation

12 In 1993, the cruise ship Nordic Empress, owned by Royal Caribbean Cruise Ltd., was found discharging oil in the territorial sea of the Bahamas in violation of the International Convention for the Prevention of Pollution from Ships by a US coast guard aircraft. Although the violation took place outside the US territorial sea, the US charged the shipping company with a violation of § 1001 of the False Statements Act for falsifying the 'Oil Record Book' when the cruise ship reached a port in Miami. The shipping company was ordered to pay a criminal fine of US $ 18 million for dumping oil and hazardous chemicals and making false statements. See UNODC, MARITIME CRIME: A MANUAL FOR CRIMINAL JUSTICE PRACTITIONERS (4th edn) [forthcoming].

13 In 1994, an Italian NGO named Legambiente used for the first time the term 'ecomafia' to underline the link between mafia-type associations and violations of environmental laws. The NGO reported that 346,000 tons of waste was seized heading for 10 European, 8 African and 5 Asian countries by Ndrangheta, Camorra, Mafia and Apulian clans. See Europol Threat Assessment – Italian Organised Crime, The Hague, June 2013, FILE NO: EDOC#667574 v8.

14 See, inter alia, BBC News. (2021, June 9). Bangladesh explosion: Dhaka market blast kills seven. https://www.bbc.co.uk/news/world-asia-57395693

Convention[15] as well as other UN bodies[16] have already taken important initiatives to this end. Indeed, a robust justice system's response to crimes that affect the environment is already an integral part of the 2021 Common Approach to Integrating Biodiversity and Nature-based Solutions for Sustainable Development into United Nations Policy and Programme Planning and Delivery.[17] The urgency to address crimes that affect the environment has also been raised at international environmental fora, including the UN General Assembly, and UN crime prevention and criminal justice fora, including Stockholm+50 discussions including a stronger justice system response to crimes that affect the environment.[18]

Further, in the European context, it should be noted that on 16 November 2023, there was a provisional agreement among European Union (EU) organs on a proposed EU Directive that would improve the investigation and prosecution of environmental crime offences, and would replace the previous EU Directive 2008/99/EC; and also that the Council of Europe's recent initiative for the elaboration of a new Convention on the Protection of the Environment through Criminal Law.[19]Against this backdrop of cooperation and momentum, the present Manual focuses on pollution crimes in the marine environment.

This Manual also serves as an Annex to the UNODC Global Maritime Crime Programme's (GMCP) Manual for Criminal Justice Practitioners, which encompasses the international framework on the Law of the Sea (LOS), including the analysis of maritime zones and the general principles applicable to maritime crime. The Manual provides an overview of the legal context and operational aspects essential for addressing maritime crimes. This Manual will complement the Manual for Criminal Justice Practitioners by addressing several aspects in further detail.

1. The Manual will provide an outline of international legal framework relevant to combating marine pollution, including the definition of 'Pollution in the Marine Environment', and will examine maritime jurisdiction, elucidating the duties and responsibilities of flag, coastal, and port States provided by the 1982 UN Convention on the Law of the Sea (UNCLOS).
2. The Manual will discuss the elements constituting 'Pollution Crimes in the Marine

15 State Parties to the Organized Crime Convention have adopted resolutions to address crimes that affect the environment: resolution 10/6 on 'Preventing and combating crimes that affect the environment falling within the UNTOC' and resolution 11/3 on 'Outcomes of the joint thematic discussion of the Working Group of Government Experts on Technical Assistance and the Working Group on International Cooperation on the application of the United Nations Convention against Transnational Organised Crime for preventing and combating transnational organised crimes that affect the environment.'

16 See e.g. UN General Assembly, Resolution 75/196 of 16 December 2020, entitled 'Strengthening the United Nations crime prevention and criminal justice programme, in particular its technical cooperation capacity', in which the Assembly expressed deep concern about crimes that affect the environment and emphasised the need to combat such crimes by strengthening international cooperation, capacity-building, criminal justice responses and law enforcement efforts; available at https://daccess-ods.un.org/tmp/3526498.9733696.html>. See also ECOSOC, RESOLUTION 2021/24 'Preventing and combating crimes that affect the environment' (22 July 2021) (E/RES/2021/24); available at https://documents-dds-ny.un.org/doc/UNDOC/GEN/N21/206/44/PDF/N2120644.pdf?OpenElement. Note also that criminal justice and anti-corruption measures in relation to environment-related crimes are an integral part of the UN Common Approach to Biodiversity; see UN Chief Executives Board for Coordination, 'Common Approach to Integrating Biodiversity and Nature-based Solutions for Sustainable Development into United Nations Policy and Programme Planning and Delivery' (16 August 2021), CEB/2021/1/Add.1; available at <https://unsceb.org/sites/default/files/2021-09/CEB_2021_1_Add.1%20%28Biodiversity%20Common%20Approach%29.pdf>

17 See more information at United Nations System Chief Executives Board for Coordination. (2021). UN common approach to biodiversity. https://unsceb.org/un-common-approach-biodiversity

18 See inter alia UNEA-5.2 Ministerial Declaration (2022) commitment to address crimes that have a serious impact on the environment; UN General Assembly resolution 76/185 'Preventing and combating crimes that affect the environment' (2022); Kyoto Protocol on Advancing Crime Prevention, Criminal Justice and the Rule of Law (2021) expressing concern of the negative impact of crimes that affect the environment; resolution 10/6 'Preventing and combating crimes that affect the environment falling within the scope of the United Nations Convention against Transnational Organized Crime' of the Conference of the parties to the United Nations Convention against Transnational Organized Crime (2020).

19 See Council of Europe. (2022, April 1). *Council of Europe to draft a new global convention to protect the environment through criminal law*. https://www.coe.int/en/web/cdpc/-/council-of-europe-to-draft-a-new-global-convention-to-protect-the-environment-through-criminal-law

Environment', along with the examination of the criminal liability of actors, such as the masters, ship owners, and operators, which are associated with the operation of the vessel.

3. The Manual will explore international cooperation matters with respect to the flag and coastal States that are required to address marine pollution crime.

4. The Manual will scrutinise the pre-trial detention of crew members, in connection with the question of the prompt release of the vessel, as well as sentencing considerations arising from UNCLOS.

5. The Manual will examine the investigative methods, including the use of Maritime Domain Awareness (MDA), that are necessary to suppress pollution crimes in the marine environment.

I.

THE INTERNATIONAL LEGAL FRAMEWORK

This chapter sets out the most pertinent international legal instruments that States should take into consideration when adopting or amending national legislation on pollution crimes in the marine environment. While an attempt is made to provide a comprehensive overview of relevant issues, an exhaustive account of the international legal framework related to marine pollution is beyond the scope of this Manual.

The purpose of this Manual is to succinctly present the international legal framework governing specifically the protection of the marine environment and place emphasis on the unique attributes of the maritime domain, in particular the question of maritime jurisdiction.

The starting point for consideration of the international legal framework is the UN Convention on the Law of the Sea (UNCLOS),[20] commonly referred to as the 'Constitution of the Oceans' [21], which provides the overarching framework for international law relating to the protection of the marine environment.[22] Its fundamental significance lies in its allocation of the jurisdictional powers of States for the management of the seas, including for the protection of the marine environment, which is one of its central aims. These jurisdictional powers may include the power to enact laws and regulations for the protection of the marine environment (prescriptive or legislative jurisdiction) and, on many occasions, the coterminous power to take action to execute such laws and regulations (enforcement jurisdiction).[23] Law enforcement jurisdiction includes measures such as boarding, inspection, arrest, and judicial proceedings that may be necessary to ensure compliance with the laws and regulations adopted by States[24]. The main division among States in terms of the different jurisdictional powers in this regard is between flag and coastal/port States.

UNCLOS is supplemented by numerous multilateral treaties of global as well as regional application that set out detailed norms for controlling marine pollution and conserving marine biodiversity.[25] Many such treaties were adopted and operate under the auspices of the International Maritime Organisation (IMO).

For example, the International Convention for the Prevention of Pollution from Ships (MARPOL 1973/1978) sets forth comprehensive pollution prevention standards and regulations related to various sources of marine pollution, including oil, noxious liquid substances, harmful substances carried by sea in packaged form, sewage, garbage, and air emissions. These standards establish limits and requirements to prevent and minimise pollution from ships. MARPOL includes provisions for ship design and operational measures to prevent pollution. It sets specific requirements for the construction and equipment of ships, such as double hulls for oil tankers and the installation of pollution prevention equipment like oil discharge monitoring and control systems.

20 See Note 5. As of 06/03.2024 UNCLOS has 169 contracting parties, including the EU; see at <https://treaties.un.org/pages/ViewDetailsIII.aspx?src=TREATY&mtdsg_no=XXI-6&chapter=21&Temp=mtdsg3&clang=_en>

21 This phrase appears to have been first used by the President of the Third UN Conference on the Law of the Sea at the closing session of the Conference: see United Nations, The Law of the Sea: Official Text of the Convention on the Law of the Sea (New York: United Nations 1983), xxxxiii.

22 R. Churchill, A. Lowe, A. Sander, *The Law of the Sea* (4th edn, Manchester University Press, 2022), 602.

23 Under international law, it is common to distinguish between legislative or prescriptive jurisdiction (terms to be used interchangeably henceforth), i.e., the power to make laws and regulations, and enforcement jurisdiction, i.e., the power to take executive action in pursuance of or consequent on the making of decisions or rules. On jurisdiction in general see FA Mann, 'The Doctrine of Jurisdiction in International Law' (1964) 111 *Recueil des Cours de l'Académie de Droit International* 1.

24 Article 73, UNCLOS; UNODC, MARITIME CRIME: A MANUAL FOR CRIMINAL JUSTICE PRACTITIONERS (3rd edn), Chapter 5.

25 The term 'marine biodiversity' is not used in the UNCLOS. On 19 June 2023, an 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 was adopted. See this 'BBNJ Agreement', not yet in force, at <https://treaties.un.org/doc/Publication/CTC/Ch_XXI_10.pdf>. It does not contain a definition of the term marine biodiversity. 'Biological Diversity' is however defined under the Convention on Biodiversity (CBD) as the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems' see at https://treaties.un.org/doc/Treaties/1992/06/19920605%2008-44%20PM/Ch_XXVII_08p.pdf

Another important global instrument is the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter ('London Convention') and its three Annexes, which are among the early universal instruments aimed at the protection of the marine environment from deleterious human activities. It is characterised by a permissive approach, i.e., dumping is permitted unless forbidden.

UNCLOS often refers to regional rules, co-operation, and programmes. Some twenty regional treaties relating to the marine environment have been identified,[26] giving substance to the general duty to cooperate laid down in Article 197 of UNCLOS.[27] Most regional treaties have been adopted under the UN Environment Programme's (UNEP) Regional Seas Programme. Such regional seas agreements invariably take the form of a framework convention, together with several protocols containing detailed provisions for controlling marine pollution from specific sources, as well as one or more non-legally binding instruments such as an action plan.[28]

The mosaic of the relevant rules of international law is complemented by the various principles of customary international law binding upon all the members of the international community and other international instruments, be it binding conventions or non-binding UN or other international organizations' resolutions, concerning the prevention and reduction of marine pollution and the conservation of marine biodiversity. In addition, there should be reference to domestic legislation; indeed, States regulate marine pollution through a combination of laws, regulations and policies aimed at protecting the environment and public health. The specific regulations and enforcement mechanisms can vary significantly from one State to another, depending on its domestic legal system.

Finally, marine pollution crimes may also be governed by the international legal framework aimed at addressing transnational criminal activities, such as UNTOC and the United Nations Convention against Corruption (UNCAC). One of the goals of this Manual is to explore the potential applicability mainly of UNTOC in this regard.

Definition of Pollution of the Marine Environment

This section discusses definitions as they apply to the context of marine pollution crimes, in particular the definition of 'pollution of the marine environment'. For the purpose of this publication, 'pollution of the marine environment' is understood to mean the introduction by a person, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities The definition is very broad and flexible to include any current or future source of marine pollution.

The definition of pollution of the marine environment is materially identical to the definition of the same term set out in Article 1 (1)(4) of UNCLOS. This definition has been incorporated in a number of regional agreements.[29] Article 1 (1) (4) clearly provides a broad definition on marine

26 Birnie, Boyle, and Redgwell, *International Law and the Environment* (4th edn, Oxford University Press, 2021), 518.

27 "States shall cooperate on a global basis and, as appropriate, on a regional basis, directly or through competent international organisations, in formulating and elaborating international rules, standards and recommended practices and procedures consistent with this Convention, for the protection and preservation of the marine environment, taking into account characteristic regional features"; Article 197 of UNCLOS (n 5).

28 See e.g. N. Oral, 'Forty Years of the UNEP's Regional Seas Programme: from past to future', in R. Rayfuse (ed), *Research Handbook on International Marine Environmental Law* (Edward Elgar, 2015), 339.

29 For example, Article 1(d) of the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention).

pollution, which, if interpreted evolutively and in the light of other relevant rules of international law,[30] may include all sources of marine pollution in the present and future.[31]

Article 1 (1) (4) is closely linked to Article 194 (1) and (3) of UNCLOS. Article 194 (1) obliges States to take all measures that are necessary to prevent pollution of the marine environment from "any source". Under Article 194 (3), the measures taken pursuant to Part XII on Protection and Preservation of the Marine Environment shall deal with "all sources" of pollution of the marine environment. UNCLOS further contains provisions specifically addressing six sources of pollution of the marine environment:

1. pollution from land-based sources,[32]
2. pollution from seabed activities subject to national jurisdiction[33]
3. pollution from activities in the Area[34]
4. pollution by dumping[35]
5. pollution from vessels[36]
6. pollution from or through the atmosphere.[37]

In addition, and in light of its very broad nature, Article 1 (1)(4) of UNCLOS may cover peculiar sources of marine pollution, such as, arguably, ocean noise [38] or plastic pollution.[39] As the International Tribunal for the Law of the Sea (ITLOS) recently opined, this definition has three cumulative criteria (namely, that there must be a substance or energy; this substance or energy must be introduced by humans, directly or indirectly, into the marine environment; and such introduction must result or be likely to result in deleterious effects).[40] ITLOS concluded that the said definition also includes anthropogenic greenhouse gas (GHG) emissions into the atmosphere,[41] since the introduction of a pollutant into the marine environment 'may take place either immediately, through a direct mode, or in stages'.[42] The tribunal considered that CO2 is effectively taken up by the ocean where it 'dissolves in seawater and mixes into the deep ocean', and is thereby 'directly introduced by humans into the marine environment'.[43] Furthermore, because GHGs 'trap heat within the atmosphere and the ocean then stores this heat … [which] is a form of energy, humans indirectly introduce energy into the marine environment through anthropogenic GHG emissions'.[44]

In addition, it is clear that 'the marine environment' encompasses marine living

30 As provided by the relevant rules of treaty interpretation, such as Article 31 (3) of the Vienna Convention on the Law of the Treaties (1969): "There shall be taken into account, together with the context: (a) any subsequent agreement between the parties regarding the interpretation of the treaty or the application of its provisions; (b) any subsequent practice in the application of the treaty which establishes the agreement of the parties regarding its interpretation; (c) any relevant rules of international law applicable in the relations between the parties."

31 See inter alia D. Konig, 'Protection of the Marine Environment', in Max Planck Encyclopedia of International Law (February 2013), 4.

32 Articles 194 (3)(a), 207 and 213 UNCLOS (n 5).

33 Articles 194 (d)(c), 208 and 214, ibid.

34 Articles 209 and 215, ibid.

35 Articles 210 and 216, ibid.

36 Articles 194 (3)(b), 211, 217, 218 and 220, ibid.

37 Articles 212 and 222, ibid.

38 Arguably, acoustic waves can be interpreted to be included in the concept of 'energy' in the definition of marine pollution under Art. 1 (1)(4), see: K. N. Scott, 'International Regulation of Undersea Noise' (2004) 53 *International and Comparative Law Quarterly* 287. See also Oceans Care' Report on Underwater Noise Pollution at <https://www.oceancare.org/en/stories_and_news/ocean-noise-polluters/>.

39 See Pew Charitable Trusts, *Breaking the Plastic Wave* (2020). Notably, in March 2022, at the resumed fifth session of the UN Environment Assembly (UNEA-5.2), a historic resolution was adopted to develop an international legally binding instrument on plastic pollution, including in the marine environment. See at <https://www.unep.org/inc-plastic-pollution>.

40 ITLOS, *Request for an Advisory Opinion submitted by the Commission of Small Island States on Climate Change and International Law* (Advisory Opinion), 21 May 2024, para. 161 [hereinafter: Climate Change Advisory Opinion].

41 Ibid, para 173.

42 Ibid, para 172.

43 Ibid.

44 Ibid.

organisms. This interpretation was supported by ITLOS in the Southern Bluefin Tuna cases, in which the tribunal stated that: "[T]he conservation of the living resources of the sea is an element in the protection and preservation of the marine environment".[45] Hence the protection of the marine environment also involves the protection of living natural resources.[46]

It is within the discretion of each State whether it would opt for a broader or stricter definition of marine pollution for present purposes. The Manual recommends the definition adopted by the UNCLOS and other regional treaties, which, as demonstrated above, is both comprehensive and flexible enough to be susceptible to evolutive interpretation.

Before dwelling upon the cardinal issue of pollution from vessels, a synopsis of pollution from sources other than vessels is in order.

UNCLOS itself contains no detailed provisions regulating marine pollution from the six sources identified above. It rather provides a framework for tackling marine pollution by: calling on its contracting parties to adopt international rules and standards to address pollution from each source; by requiring States to legislate to implement such rules and standards and to enforce that legislation; by setting the jurisdictional parameters for individual States to regulate marine pollution going beyond international rules and standards; and by briefly addressing questions of liability and compensation.[47]

The following sections address each of the six sources of pollution, as listed in the UNCLOS. They begin with pollution from sources other than from vessels and then move on to consider pollution from vessels. It is this latter source of pollution that is the most relevant and significant for present purposes.

Pollution from Sources other than Vessels

a) Pollution by Dumping[48]

Dumping refers to the practice of disposing of waste that has been generated on land by means of a ship (and occasionally from aircraft or artificial structures at sea). It differs from other forms of pollution, including pollution from vessels, because it is always deliberate and is usually the sole reason for the voyage of a ship intending to dump waste.[49]

The first global treaty to regulate the dumping of waste at sea was the Convention on the Prevention of Marine Pollution by the Dumping of Wastes and other Matter (here after 'London Convention').[50] In 1996, a Protocol to the Convention (here after 'London Protocol') was adopted that introduced a stricter system for controlling dumping.[51] As between its parties, the Protocol replaces the Convention. To date, not all parties to the Convention have ratified the Protocol.

Further, Article 210 of UNCLOS requires its parties to adopt laws to control dumping that are "no less effective in preventing, reducing, and controlling such pollution than the global

45 ITLOS, Southern Bluefin Tuna Cases (New Zealand v. Japan; Australia v. Japan), Provisional Measures, Order of 27 August 1999, ITLOS Reports (1999), 280, para. 70. See also Request for an Advisory Opinion Submitted by the Sub-Regional Fisheries Commission (SRFC) ITLOS Case No. 21, Advisory Opinion of 2 April 2015), para. 120. (hereinafter: Fisheries Advisory Opinion).

46 Crime in relation to the fishing industry ('fish crime') is beyond the scope of this Manual. Cf. <https://www.unodc.org/unodc/en/environment-climate/fisheries.html>

47 See Churchill, Lowe, Sander (n 24), 623.

48 See inter alia A. Birchenough and F. Haag, 'The London Convention and London Protocol and their expanding mandate' (2020) 34 *Ocean Yearbook* 255; H. Esmaeili and B. Grigg, 'Pollution from Dumping', in D. J. Attard, M. Fitzmaurice, N. Martinez, & R. Hamza (eds), *The IMLI Manual on International Maritime Law:* Volume III (Oxford: Oxford University Press 2016), 78.

49 See Churchill, Lowe, Sander (n 24), 668.

50 1972 London Dumping Convention (LDC) (EIF 30 August 1975)

51 1996 London Dumping Protocol (LDP) (EIF 24 March 2006)

rules and standards".[52] According to the Proelss Commentary, "the global rules and standards referred to in Art. 210 (6) are primarily laid down in the London Dumping Convention[53] and its 1996 Protocol".[54]

Article III (1) of the London Convention defines dumping as "any deliberate disposal at sea of wastes or other matter from vessels, aircraft, platforms or other man-made structures at sea [and] any deliberate disposal at sea of vessels, aircraft, platforms or other man-made structures at sea". It does, however, includes certain exceptions, namely "(i) the disposal at sea of wastes or other matter incidental to, or derived from the normal operations of vessels, aircraft, platforms or other man-made structures at sea and their equipment, other than wastes or other matter transported by or to vessels, aircraft, platforms or other man-made structures at sea, operating for the purpose of disposal of such matter or derived from the treatment of such wastes or other matter on such vessels, aircraft, platforms or structures; (ii) placement of matter for a purpose other than the mere disposal thereof, provided that such placement is not contrary to the aims of this Convention. (c) The disposal of wastes or other matter directly arising from, or related to the exploration, exploitation and associated off-shore processing of sea-bed mineral resources will not be covered by the provisions of this Convention." [55]

Article 1 (1)(5) of UNCLOS defines dumping in almost identical terms to the London Convention,[56] whereas Article 1 (4) of the London Protocol is more extensive than the London Convention, including "any storage of wastes or other matter in the seabed and the subsoil thereof from vessels, aircraft, platforms or other man-made structures at sea; and any abandonment or toppling at site of platforms or other man-made structures at sea, for the sole purpose of deliberate disposal." [57]

The London Convention operates by way of a list-approach (blacklisted substances being prohibited;[58] grey listed substances requiring a special prior permit;[59] all other substances requiring a general permit. [60]) The London Protocol, which for parties to both instruments prevails over the London Convention, reverses this logic: all dumping is in principle prohibited, unless it is permitted.[61] The London dumping 'regime' provides the threshold for action required by States to prevent, reduce, and control pollution by dumping by virtue of Article 210(6) of UNCLOS. Unlike other references to global rules and standards found elsewhere in Part XII of UNCLOS, there is no requirement that these global rules on dumping be 'generally accepted'. Some discussion therefore remains as to whether the reference to global rules and standards should be interpreted as only referring to the London Convention, or also its Protocol.[62]

52 Article 211 (6) of UNCLOS (n 5).

53 Concerning the relationship between the London Dumping Convention and UNCLOS, Article 237 of UNCLOS (ibid) states that Part XII is "without prejudice to the specific obligations assumed by States under special conventions and agreements concluded previously which relate to the protection and preservation of the marine environment" (paragraph 1), provided that such obligations are "consistent with the general principles and objectives" of UNCLOS (paragraph 2). This opens the possibility for Article 210 (6) of UNCLOS to incorporate the obligations of the London Dumping Convention.

54 International Maritime Organization. (1996). Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (London Protocol). Retrieved from https://www.imo.org/en/About/Conventions/Pages/1996-Protocol-to-the-London-Convention.aspx

55 Article III (b) and (c) of the London Convention

56 According to this provision 'dumping' means: "(a)(i) any deliberate disposal of wastes or other matter from vessels, aircraft, platforms or other man-made structures at sea; (ii) any deliberate disposal of vessels, aircraft, platforms or other man-made structures at sea". Subparagraph (b) clarifies the meaning by listing situations which cannot be qualified as dumping. Under these terms 'dumping' does not include the disposal of wastes and other matter incidental to, or derived from regular operations of vessels, aircraft, platforms or other man-made structures and their equipment; see Article 1 (1) (5) UNCLOS, ibid.

57 Article 1 (4) (2) London Protocol.

58 Article IV(a) and Annex I London Convention.

59 Article IV(b) and Annex II London Convention.

60 Article IV(c) London Convention.

61 Article 4 and Annex I London.

62 See in particular Churchill, Lowe, and Sander (n 19), 669.

Article 210 (1) of UNCLOS requires that States Parties adopt laws and regulations to prevent, reduce and control pollution of the marine environment by dumping. This obligation applies to all States Parties, both coastal and landlocked. Article 210 (1) concretises the obligation laid down in Article 194 (3)(a) of UNCLOS to take all necessary measures, including "those designed to minimise to the fullest possible extent [...] the release of toxic, harmful or noxious substances, especially those which are persistent, [...] by dumping."[63] Further, pursuant to Article 210 (3) of UNCLOS, these laws, regulations and measures shall ensure that dumping is not carried out without the permission of the competent authorities of States. This reflects the system of permits under the London Convention and Protocol.[64]

With respect to the enforcement of the prohibition of dumping, Article VII (2) of the London Convention and Article 10 (2) of the London Protocol provide that each party shall take in its territory appropriate measures to prevent and punish conduct in contravention of the provisions of each instrument respectively. This entails, first, that the State of loading (that is, the State from whose ports the ship is loading waste) must prevent a ship leaving its ports if it reasonably suspects it of intending to dump waste in contravention of the Convention or Protocol (as applicable). Second, if that State reasonably suspects that a ship has returned to one of its ports after having dumped matter in contravention of that State's legislation, it must institute criminal or administrative proceedings against that ship if it has sufficient evidence to do so.[65] Third, the flag State, regardless of whether it has issued a permit, must institute criminal or administrative proceedings against a ship having its nationality, where it has sufficient evidence that the ship has violated the London Convention or Protocol, unless the State of loading has already taken action. Finally, as the London Convention and Protocol respectively set out [66], a coastal State Party must apply its relevant provisions to any ship believed to be dumping waste "in areas within which it is entitled to exercise jurisdiction in accordance with international law", i.e. - territorial sea, continental shelf and the EEZ - and, to this end, must institute proceedings against that ship unless the State of loading or the flag State have already done so.

The enforcement obligations of the London Convention and Protocol are enhanced by Article 216 (1) of UNCLOS, which sets explicit enforcement obligations addressing three situations in which a State shall take action to intervene against dumping activities. First, a coastal State shall take action with regard to dumping within its territorial waters, within its exclusive economic zone (EEZ), or on its continental shelf. Second, a flag State shall take action with regard to vessels flying its flag or aircraft it has registered. Finally, all States are required to enforce their laws related to acts of loading of wastes or other matter occurring within its territory or at its off-shore terminals.[67]

As is further explained below, dumping activities from vessels are more likely to meet the threshold of 'serious crime' committed by an 'organised criminal group' in accordance with UNTOC[68]. However, Article 230 (1) of UNCLOS appears to be an obstacle for the imposition of strict,

63 See Article 194 (3) of UNCLOS (n 5).

64 See Wacht, 'Article 210', in A. Proelss (ed), *The UN Convention on the Law of the Sea: A Commentary* (Beck/Hart, 2017), 1413 (hereinafter: Proelss Commentary).

65 See Churchill, Lowe, Sander (n 19), 678.

66 Article V (I) (c) London Convention (n 42) and Article 10 (1)(c) London Protocol (n 43).

67 "Laws and regulations adopted in accordance with this Convention and applicable international rules and standards established through competent international organisations or diplomatic conference for the prevention, reduction and control of pollution of the marine environment by dumping shall be enforced: (a) by the coastal State with regard to dumping within its territorial sea or its exclusive economic zone or onto its continental shelf; (b) by the flag State with regard to vessels flying its flag or vessels or aircraft of its registry; (c) by any State with regard to acts of loading of wastes or other matter occurring within its territory or at its off-shore terminals" - Article 216 (1) of UNCLOS (n 17).

68 See Articles 2 and 3 of UNTOC (n 21).

non-monetary, penalties against those involved in dumping beyond the territorial sea, since it provides that "[m]onetary penalties only may be imposed with respect to violations of national laws and regulations or applicable international rules and standards for the prevention, reduction and control of pollution of the marine environment, committed by foreign vessels beyond the territorial sea."[69]

b) Pollution from Seabed Activities Subject to National Jurisdiction[70]

Exploration and exploitation of seabed hydrocarbon resources may give rise to both intentional and accidental pollution. The Deepwater Horizon accident in 2010, when approximately five million barrels of oil escaped into the Gulf of Mexico, illustrates the point.[71]

Article 208 (5) of UNCLOS provides that States, "acting especially through competent international organisations or diplomatic conference, shall establish global and regional rules, standards and recommended practices and procedures to prevent, reduce and control pollution of the marine environment [arising from or in connection with seabed activities subject to their jurisdiction and from artificial islands, installations and structures under their jurisdiction]".[72] In addition, Article 194 (3) (d) of UNCLOS calls in particular for measures to prevent accidents and deal with emergencies, ensuring the safety of operations at sea, and regulating the design, construction, equipment, operation and manning of installations or devices. Such devices are regularly used for the exploration and exploitation of hydrocarbon resources.[73] Finally, Article 208 (1)–(3) of UNCLOS requires States to adopt laws, regulations, and other measures to control pollution from seabed activities subject to their jurisdiction that are "no less effective than international rules, standards and recommended practices and procedures".[74] Notwithstanding these provisions, unlike shipping and dumping, there is no comprehensive global treaty, like MARPOL or the London Convention respectively, to establish such international rules and standards in respect of this kind of pollution. Thus, it rests with the coastal State concerned to adopt and enforce such laws and regulations.

In this regard, it must be underscored that the coastal State has the exclusive right to authorise exploration for and exploitation of petroleum resources in its territorial sea pursuant to its sovereignty therein,[75] and on its continental shelf.[76] In addition, coastal States have both prescriptive and enforcement jurisdiction over those whom it so authorises. UNCLOS not only permits but requires coastal States to exercise such jurisdiction. Under Article 214 of UNCLOS, coastal State Parties shall enforce their laws and regulations to control "pollution arising from or in connection with seabed activities subject to their jurisdiction and from artificial islands, installations and structures under their jurisdiction, pursuant to Articles 60 and 80".[77] In exercising its prescriptive jurisdiction in this regard, a coastal State may establish criminal offences and penalties, which could subsequently be enforced either in its territory or on artificial islands, installations and structures subject to its jurisdiction.[78]

69 Article 230 (1) of UNCLOS (n 5).

70 See inter alia M. Gavouneli, *Pollution from Offshore Installations* (London: Kluwer, 1995); G. Handl and K. Svendsen (eds*), Managing the Risks of Offshore Oil and Gas Accidents: The International Legal Dimension* (Edward Elgar, 2019).

71 See N. Liu, 'Protection of the Marine Environment from Offshore Oil and Gas Activities' in R. Rayfuse (ed), *Research Handbook on International Marine Environmental* Law (Edward Elgar 2015), 191.

72 Article 208 (5) UNCLOS (n 5).

73 Article 194 (3) (d), ibid.

74 Article 208 (1-3), ibid.

75 See Article 2, ibid.

76 See Article 77, ibid.

77 Article 214, ibid.

78 Article 60 (2) UNCLOS (ibid) provides for the exercise of both prescriptive and enforcement jurisdiction over the artificial islands and other offshore installations placed for the purposes of exploitation of natural resources and other economic activities.

c) Pollution from Activities in the Area[79]

Under Article 209 (2) of UNCLOS, "States shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment from activities in the Area undertaken by vessels, installations, structures and other devices flying their flag or of their registry or operating under their authority, as the case may be."[80]

It must be noted from the outset that mining for minerals in the Area, a term that refers to the seabed and ocean floor and the subsoil thereof, beyond the limits of national jurisdiction (territorial sea and continental shelf),[81] is still at the exploratory stage.[82] Thus, at this stage it has a limited potential for adverse impact on the marine environment. Articles 145 and 209 of UNCLOS stipulate that the International Seabed Authority (ISA) has the primary responsibility for adopting rules, regulations, and procedures to prevent, reduce, and control pollution of the marine environment from activities in the Area, which means all activities for the exploitation of the minerals therein. In implementing its obligations under the said provisions, the ISA has to date adopted pollution control provisions in relation to prospecting polymetallic nodules, polymetallic sulphides, and cobalt-rich ferromanganese crusts in the Area.[83]

As to enforcement of ISA's pollution control rules, that is the responsibility of both the ISA and the State Parties to UNCLOS. In respect of the latter States, Article 139 (1) of UNCLOS provides that the "States Parties shall have the responsibility to ensure that activities in the Area [...] are controlled by them or their nationals, shall be carried out in conformity with this Part". In an Advisory Opinion issued in 2011, the Seabed Disputes Chamber of the International Tribunal for the Law of the Sea (ITLOS) considered that this was not an obligation of result (that is, to achieve compliance by the contractor in each and every case), but one of conduct or of due diligence.[84] Criminal jurisdiction for pollution regarding seabed activities in the Area is not presently an issue, as the Draft Exploitation Regulations, consolidating specific environmental considerations, are still under discussion by the International Seabed Authority.[85]

d) Pollution from Land-based Sources[86]

Although as much as 80% of marine pollution stems from land-based sources, including pollution through the atmosphere, the relevant provisions of UNCLOS don't fully address the matter. As noted, "this is due, in large part, to the fact that the sources of land-based pollution are highly diffuse, and international regulation would require severe

79 See Harrison (n 1), 225-242.

80 Article 209 (2) UNCLOS (n 5).

81 Under Article 1 (1) of UNCLOS (n 5).

82 See e.g. Brant, A. (2023, April 12). Development, marine biodiversity and the common heritage of mankind: The ISA's deep seabed mining quandary and complying with the high seas BBNJ convention. EJIL: Talk! https://www.ejiltalk.org/development-marine-biodiversity-and-the-common-heritage-of-mankind-the-isas-deep-seabed-mining-quandary-and-complying-with-the-high-seas-bbnj-convention/ (10 July 2023).

83 ISA adopted regulations for prospecting and exploration for polymetallic nodules in 2000 (revised in 2013), for polymetallic sulphides in 2010 and for cobalt-rich ferromanganese crusts in 2012. These regulations are available on the ISA website.

84 Responsibilities and obligations of States with respect to activities in the Area, Advisory Opinion, 1 February 2011, ITLOS Reports 2011, p. 10. See comments by I. Plakokefalos, 'Seabed Disputes Chamber of the International Tribunal for the Law of the Sea', (2011) 24 *Journal of Environmental Law* 133-143.

85 . In 2021, the Government of Nauru invoked Section 1(15) of the 1994 Implementation Agreement to Part XI of the UN Convention on the Law of the Sea (UNCLOS), which effectively started a 2-year clock for the ISA to elaborate regulatory rules on commercial deep seabed mining. Failure to meet the deadline would require the ISA to consider and "provisionally approve" an application for commercial exploitation of the deep seabed coming from a Member State to UNCLOS whose national intends to apply for approval of mining exploitation in the Area; see at <https://www.isa.org.jm/news/nauru-requests-president-isa-council-complete-adoption-rules-regulations-and-procedures/>. See also C. Blanchard, E. Harrould-Kolieb, E Jones, and M.L. Taylor, 'The current status of deep-sea mining governance at the International Seabed Authority' (2023) *Marine Policy* 147

86 See *inter alia* D. Hassan, *Protecting the Marine Environment from Land-Based Sources of Pollution* (Ashgate, 2006).

restrictions of industrial and other activities within the sovereign territories of States".[87] Article 207 (1) of UNCLOS obliges States to adopt laws and regulations to combat pollution from land-based sources, including rivers, estuaries, pipelines, sewage, and outfall structures, 'taking into account internationally agreed rules, standards and recommended practices and procedures'.[88]

As ITLOS held, "Article 207 of the Convention imposes upon States three main obligations: first, the obligation to adopt national legislation; second, the obligation to take other necessary measures; and third, the obligation to endeavour to establish international rules, standards and practices and procedures. Those obligations are mostly concerned with establishing the legal framework, both national and international, necessary to prevent, reduce and control marine pollution from land-based sources." [89]

To date, there is no global treaty setting out such rules and standards. In 1995, UNEP established the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, a non-binding instrument providing strategies and technical and financial assistance.[90] At the regional level, a number of treaties contain specific provisions on pollution from land-based sources, for example, the 1992 Helsinki Convention, Annex III; the 1992 OSPAR Convention, Annex I; and seven out of 10 Regional Seas Conventions. Insofar as climate change is concerned, these rules include "those contained in climate change treaties such as the UNFCCC and the Paris Agreement. Accordingly, States Parties to the Convention have an obligation to take into account those norms in adopting their laws and regulations to prevent, reduce and control marine pollution from GHG emissions."[91]

In conclusion, land-based pollution is predominantly a matter of the respective coastal State's national legislation because States are not willing to get legally bound by potentially more stringent international rules.[92] That said, it is possible that land-based pollution would have transboundary effects, which may engage the liability of the coastal State concerned.[93] In terms of criminal legislation concerning land-based pollution, it is a matter of the coastal State concerned to criminalise pollution emanating from its territory.[94] That said, other States may also establish their jurisdiction over the said offence, specifically when their national waters are affected by such transboundary land-based pollution, e.g., in line with the protective principle of international jurisdiction.[95]

e) Pollution From or Through the Atmosphere[96]

A host of pollutants enter the marine environment from and through the atmosphere, including carbon dioxide, other gases, heavy metals, and pesticides. Article 212 (3) of UNCLOS provides that States

87 Konig (n 32), 11.

88 Article 207 (1) of UNCLOS (n 5).

89 ITLOS, Climate Change Advisory Opinion, para 267.

90 See further information at < https://www.unep.org/explore-topics/oceans-seas/what-we-do/addressing-land-based-pollution/governing-global-programme>

91 ITLOS, Climate Change Advisory Opinion, para 270.

92 See Konig (n 27), 11.

93 See, amongst others, ILC Draft principles on the allocation of loss in the case of transboundary harm arising out of hazardous activities, with commentaries, *Yearbook of the International Law Commission*, 2006, vol. II, Part Two, 59 and ILC, Draft articles on Prevention of Transboundary Harm from Hazardous Activities, with commentaries. *Yearbook of the International Law Commission,* 2001, vol. II, Part Two, 156.

94 Illustrative of the fact that States have different approaches insofar the criminalisation of land-based pollution is concerned is the practice of the Indian Ocean countries. As reported, States prohibiting all unauthorised discharges into the marine environment from land include Comoros, Maldives, Mozambique, Oman, Pakistan, South Africa and Sri Lanka and (ii) States prohibiting only the discharge of specific substances from land (industrial discharge) are India and Malaysia.

95 See infra n. and corresponding text.

96 See Harrison (n 1).

Parties, "acting especially through competent international organisations or diplomatic conference, shall endeavor to establish global and regional rules, standards and recommended practices and procedures to prevent, reduce and control such pollution". This obligation pertains to States Parties in respect of pollution from or through the air space under their sovereignty, or from vessels flying their flag or aircraft of their registry.[97] In the words of ITLOS, "Article 212 of the Convention imposes upon States three obligations: first, the obligation to adopt national legislation to prevent, reduce and control marine pollution from or through the atmosphere; second, the obligation to take other necessary measures; and third, the obligation to endeavour to establish international rules, standards and practices and procedures." [98]

In addition, due to the specific character of this pollution source, Article 212 (3) of UNCLOS contains an additional feature. Besides internationally agreed rules, standards (known as 'GAIRS' - Globally Agreed International Regulatory Standards), and recommended practices and procedures adopted by the IMO, States shall also take into account the international standards and recommended practices and procedures established by the International Civil Aviation Organisation (ICAO) pursuant to Article 37 of the Chicago Convention on International Civil Aviation (1994).[99] This was also affirmed by the ITLOS in the Climate Change Advisory Opinion, such that "internationally agreed rules and standards and recommended practices and procedures" relevant to pollution from or through the atmosphere include not only those contained in climate change treaties but also those in instruments such as Volume IV of Annex 16 to the Chicago Convention establishing a carbon offsetting and reduction scheme for international aviation. [100]

Pollution from Vessels

The most detailed environmental provisions of UNCLOS concern pollution from vessels. Vessels may pollute the marine environment in various ways, including from their normal operation. Vessels powered by diesel engines may discharge some oil with their bilge waters.[101] Additionally, after having discharged their cargoes, vessels usually fill their empty fuel tanks with seawater to act as ballast to improve stability. They may subsequently discharge such ballast water containing living organisms that might become invasive species if discharged into waters where they are non-resident. More serious still, ships may be involved in accidents, such as collisions, or run aground, with the result that substantial quantities of oil and other noxious substances are released in the water.

Article 211 (1) of UNCLOS provides that "States, acting through the competent international organisation or general diplomatic conference, shall establish international rules and standards to prevent, reduce and control pollution of the marine environment from vessels…".[102] The reference to "the competent international organisation" is taken to mean the IMO, under the auspices of which all relevant global standards are adopted.

The main instrument concerning pollution from vessels is the MARPOL Convention[103] which itself is a framework, concerned mainly with issues

97 Article 212 (3) of UNCLOS (n 5).

98 ITLOS Climate Change Advisory Opinion, para 275.

99 Article 37 of the International Civil Aviation Organisation (ICAO), Convention on Civil Aviation ('Chicago Convention'), 7 December 1944, (1994) 15 U.N.T.S. 295

100 ITLOS Climate Change Advisory Opinion, para 277 (emphasis added).

101 Bilge water is wastewater that accumulates in the bilges and gets contaminated by oil and other noxious substances that leak from machinery, etc. Such water must be run through an oil-water separator and cleaned to 15 PPM of oil before being discharged overboard.

102 Article 211 (1) of UNCLOS (n 5).

103 International Convention for the Prevention of Pollution from Ships (London, 2 November 1973, as amended by the Protocol of 1 June 1978, in force 2 October 1983) 1340 UNTS 62 (hereinafter 'MARPOL Convention' or 'MARPOL'). See also M. Fitzmaurice,

of jurisdiction. Detailed pollution standards are included in the six Annexes to the Convention which address oil (Annex I), noxious liquid substances in bulk (Annex II), harmful substances carried in packaged form (Annex III), sewage (Annex IV), garbage (Annex V), and air pollution (Annex VI, added in 1997). Parties to the Convention must accept annexes I and II, but acceptance of the other annexes is optional.[104] The annexes are subject to amendment by a tacit acceptance procedure.[105] They have been amended on numerous occasions in the light of developments in technology, increased scientific knowledge of the effects of pollution, and the notable willingness of States Parties to accept stricter environmental standards.

While a detailed analysis of each of the annexes to MARPOL would be beyond the scope of this Manual, some brief remarks are made here. Annex I on pollution by oil contains many technical requirements concerning the ballast water, and the need of vessels to have segregated ballast tanks - they must have appropriate certificates to this end.[106] In addition, Annex I includes provisions designed to reduce the risk and scale of any pollution in the event of an accident. For example, oil tankers must have double hulls or equivalent protection.[107]

Annex II of MARPOL prescribes the design, construction, and equipment standards for the safe carriage of noxious liquid substances. Ships carrying such substances must be surveyed and issued with a certificate that they comply with these standards.

Annex III pertains to harmful substances carried onboard vessels in packaged form and aims to reduce the risk of pollution resulting from an accident, such as containers being lost overboard at sea, including by introducing packaging and labelling requirements. Annex III is complemented by the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989).[108]

Annex IV, addressing sewage, prohibits, among other things, the discharge of sewage within three nautical miles of the nearest land unless the ship has an approved sewage treatment plan in operation.

Annex V concerns the discharge of all types of garbage from ships, requiring ships to hold a Garbage Record Book.

Finally, Annex VI deals with emissions into the atmosphere from ships, which will eventually be precipitated into the sea causing pollution. Notably, Annex VI is the means through which the IMO is addressing the role of ships in global climate change.[109] Indeed, in its recent Climate Change Advisory Opinion, ITLOS confirmed that "in the context of marine pollution from anthropogenic GHG emissions from vessels, applicable international rules and standards may

'International Convention for the Prevention of Pollution from Ships (MARPOL)', in Attard *et al*, IMLI Manual (n 45), 33-77.

104 To date, MARPOL Convention has 161 contracting States representing 98.67% world gross tonnage. Similar acceptance is recorded for Annexes III, IV, and V, with the exception of Annex VI. See at <https://wwwcdn.imo.org/localresources/en/About/Conventions/StatusOfConventions/StatusOfTreaties.pdf>

105 Instead of requiring that an amendment shall enter into force after being accepted by, for example, two thirds of the Parties, the 'tacit acceptance' procedure provides that an amendment shall enter into force at a particular time unless before that date, objections to the amendment are received from a specified number of Parties; see at <https://www.imo.org/en/About/Conventions>

106 Annex I of MARPOL 73/78 is available at:https://www.amsa.gov.au/environment/regulations/marpol/ documents/117-52.pdf

107 This requirement, introduced in 1992, was prompted by a unilateral action by the USA, following the running aground in 1989 of a laden tanker, the Exxon Valdez, off Alaska, causing unprecedented damage to the marine environment of the area. Thus, the US enacted legislation requiring foreign tankers calling at its ports to have double hulls; see Oil Pollution Act of 1990, 46 US Code Sect. 3703a.

108 Article 4(2)(d) requires parties to ensure that the transboundary movement, including carriage by sea, of hazardous and other wastes is conducted in a manner which will protect human health and environment; see Convention on the Control of Transboundary Movement Hazardous Wastes and their Disposal (Basel 1989).

109 International Maritime Organization. (2020). MARPOL Annex VI: Regulations for the prevention of air pollution from ships (3rd ed.). International Maritime Organization. https://www.imo.org/en/OurWork/Environment/Pages/AirPollution-Annex-VI.aspx

be found, inter alia, in Annex VI to MARPOL, as amended in 2011 and 2021."[110]

MARPOL is the most comprehensive convention addressing pollution from ships, covering a host of different pollutants. Since 2000 the IMO has adopted three further relevant conventions addressing pollution by other substances, namely anti-fouling substances,[111] ballast water,[112] and waste from ship recycling.[113]

To summarise, this Chapter started with the definition of 'marine pollution' under UNCLOS and then examined how international law regulates the various sources of marine pollution. In so doing, it offered a short but comprehensive overview of the international legal framework governing the main sources of the pollution of the marine environment. This legal framework is based mainly on UNCLOS as well as the relevant global and regional treaties adopted by the IMO or other international organisations.

Evidently, it is incumbent upon each State Party to adopt such measures that are necessary to give effect to UNCLOS, as well as to the relevant generally accepted international rules and standards (GAIRS) established mainly under the IMO Conventions. A State Party to UNCLOS may enact legislation in line with the applicable GAIRS solely on the basis that it is a party to UNCLOS and not necessarily because it is a signatory State to the other pertinent global instruments.

Instruments like the MARPOL or the London Convention and Protocol have an almost universal membership which renders them applicable to almost all States around the world, even to those that are not parties to UNCLOS. In addition, there are a plethora of regional instruments, like the Regional Seas Conventions, which also regulate marine pollution.

All the treaties noted above set out the applicable rules and standards that States Parties shall adhere to in enacting legislation concerning marine pollution. Such rules and standards are often the minimum necessary in terms of the regulatory scope,[114] which implies that States may legislate stricter measures, including criminal sanctions in this regard. In addition, States, dependent upon where the pollution activity occurred, enjoy enforcement jurisdiction over such activity.

In the next chapter, the foundational question of maritime jurisdiction, namely the scope of the prescriptive and enforcement jurisdiction that States enjoy in the maritime domain in respect of marine pollution, including marine pollution crimes, will be analysed.

110 See ITLOS, Climate Change Advisory Opinion, para 291.

111 See 2001 International Convention on the Control of Harmful Anti-Fouling Systems on Ships (AFS Convention) (EIF 17 September 2008).

112 See 2004 International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention) (EIF 8 September 2017).

113 See 2009 International Convention for the Safe and Environmentally Sound Recycling of Ships (Hong Kong Convention), to enter into force on 26 June 2025; see at <https://www.imo.org/en/About/Conventions/Pages/The-Hong-Kong-International-Convention-for-the-Safe-and-Environmentally-Sound-Recycling-of-Ships.aspx>

114 Cf. Article 211 (2) of UNCLOS on pollution from vessels: "Such laws and regulations *shall at least have the same effect* as that of generally accepted international rules and standards established through the competent international organisation or general diplomatic conference" (n 17) (emphasis added).

II. JURISDICTION

In the following sections the basic principles concerning the assertion of jurisdiction under the international law of the sea, as well as the assertion of international jurisdiction under other bases of international law, in respect of pollution crimes in the marine environment will be analysed. The purpose is to assist readers to comprehend the parameters of jurisdiction at sea in this respect.

While it is open to States to go beyond the requirements of the Organised Crime Convention and establish further bases for jurisdiction for certain offences, this must be consistent with Article 4 of the Convention, which provides that "State Parties shall carry out their obligations under [the] Convention in a manner consistent with the principles of sovereign equality and territorial integrity of States and that of non-intervention in the domestic affairs of other States".[115] Furthermore, nothing in the Convention "entitles a State Party to undertake in the territory of another State the exercise of jurisdiction and performance of functions that are reserved exclusively for the authorities of that other State by its domestic law".[116] This remark is also apt in relation to maritime jurisdiction.

Flag State Jurisdiction

Flag State jurisdiction is the capacity of the State of the nationality of a vessel to assert prescriptive and enforcement jurisdiction over that vessel under international law.

To comprehend further the scope of the principle of flag State jurisdiction the following questions are in order:

- First, 'who may assert this jurisdiction?'; or in other words, 'who is the flag State?'
- Second, 'which type of jurisdiction does this include in terms of pollution crimes in the marine environment?' and, relatedly, 'where, or in which maritime zone is flag State (prescriptive or enforcement) jurisdiction to be exercised'?

First, flag State jurisdiction is exercised by the State whose flag the vessel in question is entitled to fly, which, under the law of the sea, is the State of its nationality. All vessels are required to have a nationality in order to sail on the high seas and in other maritime zones under the conditions laid down in UNCLOS and other relevant rules of international law. The right of navigation belongs exclusively to States, whether coastal or landlocked (Article 90 UNCLOS). Under Article 91 of UNCLOS, " every State shall fix the conditions for the grant of its nationality to ships, for the registration of ships in its territory, and for the right to fly its flag".[117]

Second, the assertion of both prescriptive and enforcement jurisdiction by States, including flag States, requires a legal basis under international law, which in the maritime context is provided by the law of the sea and other relevant rules of international law. Indeed, the scope of the jurisdictional competence of the flag State is largely contingent upon the maritime zone in which the vessel is located.

As to the prescriptive aspect of flag State jurisdiction, it is submitted in general that by dint of the nationality of the vessel, the flag State enjoys the full gamut of prescriptive powers related to the vessel, 'everything on it, and every person involved or interested in its operations'. Thus, in respect of criminal law, the principle of flag State jurisdiction or nationality of the vessel serves as the requisite nexus for the flag State to extend its criminal legislation to the vessel, or any activity related to it, wherever the vessel is located.

It should also be noted that flag States have an obligation to effectively exercise their jurisdiction

115 UNTOC Article 4(1).
116 UNTOC Article 4(2).
117 Article 91 of UNCLOS (n 5).

and control in administrative, technical, and social matters over ships flying their flag.[118] The term 'effective jurisdiction' clearly extends at least to those matters listed in Article 94 (3) of UNCLOS concerning construction and seaworthiness, the crewing of vessels, and matters regarding communication and avoidance of collisions. This was interpreted by the ITLOS as setting forth an obligation of 'due diligence', namely, that a particular standard of care is expected of a flag State, in respect of, amongst others in the specific case, illegal, unreported, and unregulated fishing ('IUU fishing') committed by their flagged vessels.[119] Arguably, flag States hold similar due diligence obligations in respect of their obligations under the MARPOL and London Conventions respectively. Such due diligence obligations of the flag State are the combined effect of the above Conventions together, or in conjunction, with Article 94 of UNCLOS regarding the general duties of the flag State, including to exercise effective criminal jurisdiction over the vessel.[120]

Specifically, in respect of marine pollution and the flag State prescriptive jurisdiction, Article 211(2) of UNCLOS sets forth a prescriptive obligation that "States shall adopt laws and regulations for the prevention, reduction and control of pollution of the marine environment from vessels flying their flag or of their registry". Such laws and regulations shall at least have the same effect as that of generally accepted international rules and standards established through the competent international organisation or general diplomatic conference.[121] Article 211 (2) complements Article 94 by further detailing obligations concerning the prevention, reduction, and control of pollution of the marine environment.

Article 211 (2) of UNCLOS articulates a prescriptive obligation and not a prescriptive power or option for the flag State.[122] The provision stipulates that the flag State shall adopt laws and regulations that have 'at least the same effect as that of generally accepted international rules and standards' established through the mechanism mentioned in Article 211 (1) of UNCLOS. By referring to the effect of national legislation, the formulation leaves it up to States to decide on how this effect is to be obtained. Nothing prevents flag States, if they consider it appropriate, from prescribing more stringent standards for their fleets.

In the same vein, nothing in the wording of the provision prevents flag States from prescribing criminal laws regarding pollution from ships. The ample power flag States enjoy in regulating pollution from ships, especially on the high seas where they have exclusive jurisdiction, specifically in terms of enforcement but, as recently opined by ITLOS, also in terms of prescriptive jurisdiction,[123] readily gives rise to an entitlement to criminalise pollution from ships.

118 Article 94 (1), ibid.

119 See Request for an Advisory Opinion Submitted by the Sub-Regional Fisheries Commission (SRFC) ITLOS Case No. 21, Advisory Opinion of 2 April 2015), paras 134-140.

120 See Article 94 of UNCLOS (n 17), and commentary by D. Guilfoyle, 'Article 94', in Proelss Commentary (n 54), 707 et seq.

121 Article 211 (2) of UNCLOS, ibid.

122 UNCLOS III, UN Doc. ELGDC/5 (1980, mimeo.).

123 As ITLOS enunciated in the MV Norstar case (2019), reiterated also by the Arbitral Tribunal in the Enrica Lexie case (2020), the principle of exclusive flag State jurisdiction entails not only exclusive 'enforcement' but also exclusive 'prescriptive' jurisdiction. In its words, "[a]s no State may exercise jurisdiction over foreign ships on the high seas, in the view of the Tribunal, any act of interference with navigation of foreign ships or any exercise of jurisdiction over such ships on the high seas constitutes a breach of the freedom of navigation, unless justified by the Convention or other international treaties"; M/V Norstar (Pan. v. It.), Case No. 25, Judgement of Apr. 10, 2019, paras. 222.

LEGISLATIVE EXAMPLE

Singapore, Prevention of Pollution of the Sea 1990, section 7:

Subject to subsection (2) and any regulations made under subsection (4), if any discharge of oil or oily mixture occurs from a Singapore ship into any part of the sea or from any ship into Singapore waters, the master, the owner and the agent of the ship shall each be guilty of an offence and shall each be liable on conviction to a fine of not less than $1,000 and not more than $1 million or to imprisonment for a term not exceeding 2 years or to both.

[Emphasis added]

It is thus upon each flag State's discretion which laws they will adopt in relation to marine pollution, which evidently may include criminal sanctions. Similarly, it is up to each flag State how it will define the relevant crime, thus including occasions of gross negligence of the master or the ship operator.

With regard to enforcement jurisdiction, flag States are entitled to exercise enforcement jurisdiction on high seas (Article 92 of UNCLOS), as well as within foreign EEZs.[124] Notably, Article 217 (1) of UNCLOS provides that the State Parties "shall ensure compliance by vessels flying their flag or of their registry with applicable international rules and standards, established through the competent international organisation or general diplomatic conference, and with their laws and regulations adopted in accordance with this Convention for the prevention, reduction and control of pollution of the marine environment from vessels".[125] This represents an obligation of due diligence.[126]

In particular, flag States must: lay down penalties adequate in severity to discourage violations, including evidently criminal sanctions; prohibit their ships from proceeding to sea unless they comply with the relevant international standards; ensure that their ships carry the certificates required by those standards; and periodically inspect their ships. Where there is sufficient evidence, a flag State must institute administrative or criminal proceedings against the ship, the operator, or the master of the ship, depending on the respective legislation. States that have reported a violation by a foreign-flagged ship must be subsequently informed by the flag State of the action that it has taken in response to the allegation, as must the IMO.[127]

To enhance compliance by the flag State with such due diligence obligations, the MARPOL Convention has been included in the IMO Instruments Implementation Code and flag States Parties are subjected to mandatory periodic audits regarding the implementation and enforcement of the Convention.[128] Another possibility to ensure compliance with the relevant standards would be the institution of legal proceedings against a particular flag State that falls afoul its obligations to control marine pollution either under Part XV of UNCLOS, or through the compulsory arbitration procedures in Article 10 and Protocol II of the MARPOL Convention. To date, neither of these procedures has been activated.

To sum up, flag States, first, enjoy prescriptive jurisdiction over their vessels wherever they sail and thus they may adopt criminal legislation concerning marine pollution wherever it occurs. Second, they enjoy enforcement jurisdiction in all maritime areas beyond the territorial sea of

124 As was recently confirmed by the ICJ, a third State, in the capacity of a flag State, also has "an obligation to ensure compliance by vessels flying its flag with relevant conservation measures concerning living resources enacted by the coastal State for its exclusive economic zone". *Alleged Violations of Sovereign Rights and Maritime Spaces in the Caribbean Sea (Nicaragua v Colombia), Judgment of 21 April 2022*, para 95. However, a third State has no jurisdiction to enforce conservation standards on fishing vessels of other States in the exclusive economic zone. Conversely, it is inferred that the flag State may enforce on its own vessels in a foreign EEZ.

125 Article 217 (1) of UNCLOS (n 17).

126 See Bartenstein, Article 217 in Proelss Commentary (n 54), 1482.

127 See e.g., Articles 4 and 6(4) of the MARPOL Convention (n 90). See also Article 8 of the Ballast Water Management Convention (n 98).

128 MEPC Res 246(66) (2014).

coastal States. In particular, they have exclusive enforcement jurisdiction on the high seas and, concurrent with the respective coastal State, enforcement jurisdiction in a foreign EEZ.[129] Finally, they are under a due diligence obligation under Article 94 UNCLOS in conjunction with the environmental provisions of the Convention, including Articles 192, 194, and 211 (2) UNCLOS and MARPOL Convention, to control pollution from its vessels.

Coastal State Jurisdiction

Coastal State jurisdiction is the capacity of coastal States to assert prescriptive and enforcement jurisdiction 1) within their territory, including its internal waters, and archipelagic waters, and 2) in maritime areas within their national jurisdiction in accordance with the relevant rules of international and national law, such as the continental shelf and the Exclusive Economic Zone, including in relation to the operation of artificial islands, installations, and structures, and submarine pipelines and cables.

Maritime Zones under the Sovereignty of the Coastal State: Internal Waters, Territorial Sea, and Archipelagic Waters

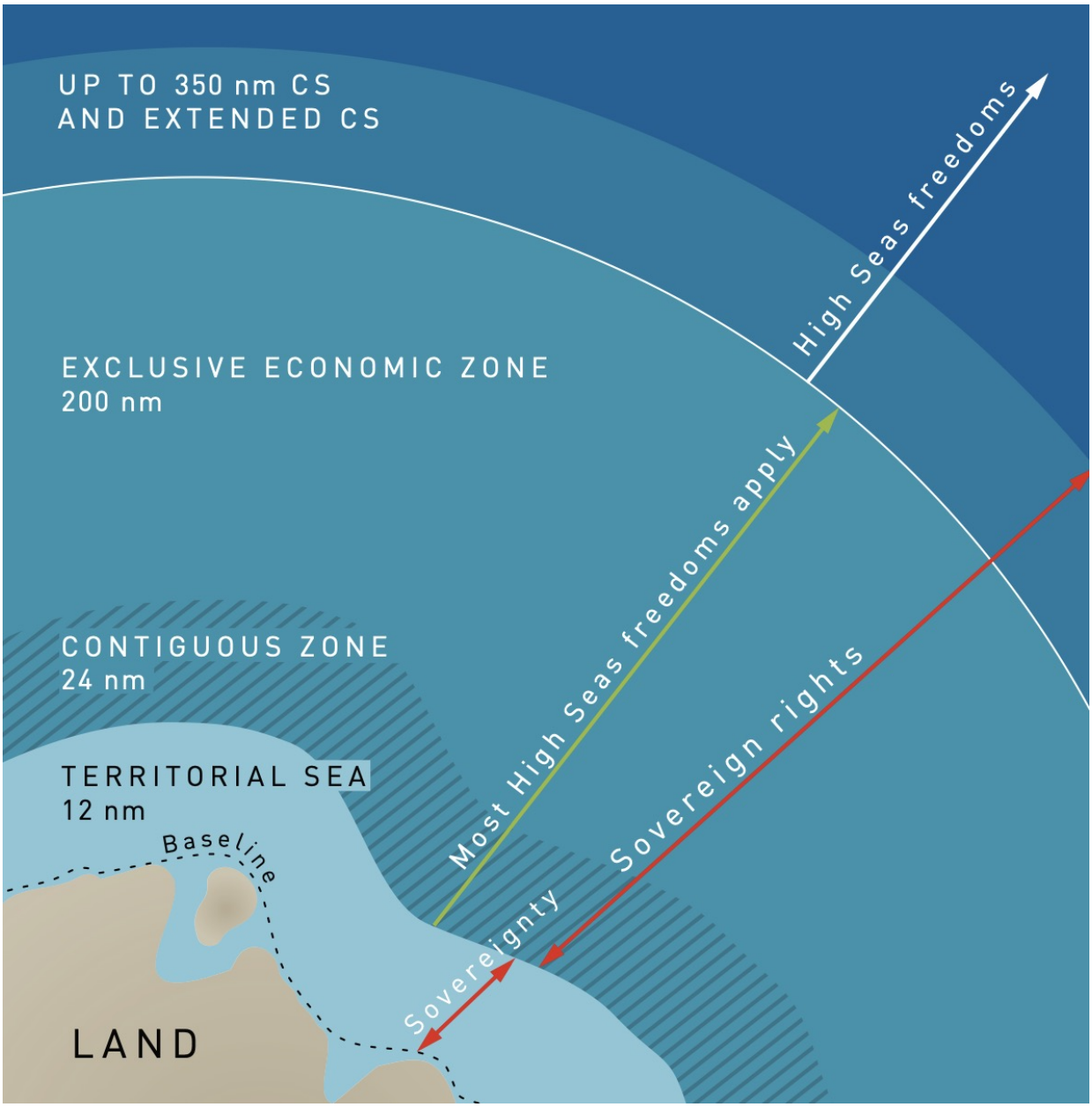
'Internal waters' are the waters landward of the baselines of the coastal States, such as harbours, river mouths, or bays, and are fully subject to the sovereignty of the coastal State.[130]

'Territorial sea'. The sovereignty of a coastal State extends beyond its land territory and internal waters and, in the case of an archipelagic State, its archipelagic waters, to an adjacent belt of sea, described as the territorial sea, which is up to a limit not exceeding 12 nautical miles, measured from baselines. The sovereignty of the coastal State extends to both the airspace above and seabed and subsoil below the territorial sea.[131]

'Archipelagic waters' are sovereign waters inside the baselines of an archipelagic State. In terms of the jurisdiction over marine pollution the legal regime of territorial sea applies also in the archipelagic waters, while the regime of transit passage applies similarly to the right of archipelagic sea lanes passage enjoyed within archipelagic waters.[132]

The territorial sea is subject to the sovereignty of the coastal State, with significant limitations: the ships of all States enjoy the right of innocent passage, codified in Article 17 et seq. of UNCLOS, as well as the right of transit passage within straits used for international navigation.[133] With regard to the former, Article 21 of UNCLOS serves as the basis for the prescriptive jurisdiction of coastal States in respect of the right of innocent passage of foreign vessels, allowing them to adopt laws in respect of inter alia the safety of navigation and the regulation of maritime traffic (Article 21 (1) (a) of UNCLOS), the conservation of the living resources of the sea (Article 21 (1)(b) of UNCLOS), the preservation of the environment of the coastal State and the prevention, reduction, and control of pollution (Article 21 (1)(f) of UNCLOS).[134] However, coastal States are specifically precluded from adopting laws related to the Construction, Design, Equipment and Manning (CDEM standards) of the ship, unless they are giving effect to generally accepted international rules or standards. This is the first limitation to coastal State's prescriptive jurisdiction, while the second refers to the obligation not to hinder innocent passage through territorial sea or transit passage through international straits in accordance with

129 See Article 58 (2) in conjunction with Article 92 on the one hand and Article 220 on the other UNCLOS (n 16).
130 See Article 8 (1) of UNCLOS (n 5).
131 See Articles 2 and 3, ibid.
132 See Article 53, ibid.
133 See Article 38, ibid.
134 Article 21 (1), ibid.



Source of Image: UNODC, MARITIME CRIME: A MANUAL FOR CRIMINAL JUSTICE PRACTITIONERS (3rd edn).

Articles 24 and 42 of UNCLOS respectively. [135]

Equivalently, regarding marine pollution, Article 211 (4) of UNCLOS reiterates that coastal States may, in the exercise of their sovereignty within their territorial sea, adopt laws and regulations for the prevention, reduction and control of marine pollution from foreign vessels, including vessels exercising the right of innocent passage, adding that these laws should not hamper the exercise of the right.[136] Article 211 (4) of UNCLOS pertains to the prescriptive powers of the coastal State in its territorial sea. It must, therefore, be read in the light of Part II of UNCLOS, which sets out the rules applicable to the territorial sea, in particular those relating to the right of innocent passage by foreign vessels.

Article 211 (4) of UNCLOS does not set forth an obligation but grants a right. Tied to Article 21

135 See UNODC, MARITIME CRIME: A MANUAL FOR CRIMINAL JUSTICE PRACTITIONERS (3rd edn).
136 See Article 211 (4), ibid.

of UNCLOS, referred to above, Article 211 (4) cl. 1 confirms that, given its sovereignty over the territorial sea (Article 2 of UNCLOS), the coastal State may prescribe measures for the prevention, reduction, and control of marine pollution from foreign vessels, including from those that exercise their right of innocent passage. Such measures may arguably include criminal laws in this regard.

Although Article 211 (4) of UNCLOS does not per se establish an obligation to adopt such laws and regulations, coastal States are under the general obligation, set forth in Articles 192 and 194, to take measures that aim to prevent pollution of the marine environment. Specific obligations may also arise out of other agreements, which, in line with Article 237 of UNCLOS, must be complied with in a manner consistent with the principles set forth in the Convention.

For example, the MARPOL Convention requires the respective coastal State Parties to exercise their prescriptive competence. Article 1 (1) of the MARPOL provides that " the Parties to the Convention undertake to give effect" to its provisions. If this is read together with Article 4 (2) of the same Convention, setting forth that "any violation of the requirements of the Convention within the jurisdiction of any party to the Convention shall be prohibited", [137] it entails that parties to MARPOL Convention are under an obligation to take measures to control marine pollution from vessels in the maritime zones within their jurisdiction, namely the territorial sea and EEZ to this effect.[138]

As to the enforcement aspect of this jurisdiction in the territorial sea, Article 220 (2) of UNCLOS provides that "where there are clear grounds for believing that a vessel navigating in the territorial sea of a State has, during its passage therein, violated laws and regulations of that State adopted in accordance with this Convention or applicable international rules and standards for the prevention, reduction and control of pollution from vessels, that State, without prejudice to the application of the relevant provisions of Part II, section 3, may undertake physical inspection of the vessel relating to the violation and may, where the evidence so warrants, institute proceedings, including detention of the vessel, in accordance with its laws, subject to the provisions of section 7."[139]

Regardless of this provision, the coastal State has the power to stop and detain the ship under Section 3 of Part II of UNCLOS ('innocent passage'). Under Article 19(2)(h) of UNCLOS passage of a foreign ship shall be non-innocent if in the territorial sea of the coastal state engages in any act of "willful and serious pollution" contrary to the Convention. Accordingly, in such situations the passage of the ship is no longer innocent with the consequence that a coastal State has plenary enforcement jurisdiction. However, what Article 220 (2) of UNCLOS interestingly does is to not restrict enforcement action only to cases of "willful and serious pollution". Consequently, Article 220 (2) provides broader enforcement powers to the coastal State for ship-source pollution in the territorial sea than Section 3 of Part II of UNCLOS.

On the other hand, where the alleged violation of an international standard (e.g. of MARPOL) is committed by a ship during its exercise of the right of transit passage through a strait used for international navigation,[140] a coastal State may take appropriate enforcement action against the ship only if the violation causes or threatens 'major damage' to the marine environment of the straits.[141]

In any event, all the relevant criminal laws concerning marine pollution can be enforced if the polluter voluntarily reaches a port of the

137 See Article 4 (2) of the MARPOL Convention (n 90) (emphasis added).
138 Per this view are also Churchill, Lowe, Sander (n 24), 650.
139 Article 220 (2) of UNCLOS (n 5).
140 See also UNODC, MARITIME CRIME: A MANUAL FOR CRIMINAL JUSTICE PRACTITIONERS (3rd edn), p.35.
141 Article 233, ibid. On straits see B.B Jia, *The Regime of Straits in International Law* (1998).

coastal State, in accordance with Article 220 (1) of UNCLOS.[142] Although Article 220 (1) of UNCLOS refers only to the institution of proceedings, it should be interpreted as including enforcement of coercive measures, like detention of the ship.[143]

Finally, since Article 228 of UNCLOS is not applicable in the case of pollution within the territorial sea,[144] the coastal State is not required to delegate to the flag State of the polluter the right to impose penalties. Article 228 safeguards flag State preemption by providing for the suspension of proceedings by port and coastal States regarding violations committed by foreign vessels. Nevertheless, flag States may only interfere and limit the exercise of the powers of enforcement by port and coastal States, and consequently suspend proceedings, with respect to those proceedings instituted by port States to impose penalties for infractions of international rules and standards committed by foreign vessels on the high seas, or in the EEZ of another State at the request of that State. Significantly, Article 230 of UNCLOS limits non-monetary penalties only to cases of willful and serious pollution committed by foreign vessels within the territorial sea.

Continental Shelf

The continental shelf of a coastal State comprises the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory, at least to a distance of 200 nm from the baselines, over which the coastal State enjoys sovereign rights of exploration and exploitation of natural resources. The provisions relating to the continental shelf that are of interest for present purposes are those concerning offshore installations and submarine pipelines, activities which may pose a significant threat to the marine environment.[145]

In short, as stated above, the coastal State has exclusive jurisdiction over artificial islands, installations and structures located on its continental shelf, including in respect of matters concerning the protection of the marine environment. In addition, under Article 208 (1) of UNCLOS, "coastal States shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment arising from or in connection with seabed activities subject to their jurisdiction and from artificial islands, installations and structures under their jurisdiction, pursuant to articles 60 and 80".[146] It follows that they enjoy the necessary prescriptive jurisdiction in respect of pollution arising from offshore installations on their continental shelf, including criminal jurisdiction. Further, they also enjoy the coextensive enforcement jurisdiction in this regard pursuant to Article 60 (2), to which Article 80 refers.

Second, in respect of pipelines, according to Article 79 (2) of UNCLOS, the coastal State may not impede the laying and maintenance of submarine cables and pipelines "subject to its right to take reasonable measures for the exploration of the continental shelf [and] the exploitation of its natural resources". Only with respect to submarine pipelines the paragraph further stipulates that the coastal State may subject pipeline operations to "reasonable measures for the [...] reduction and control of pollution from pipelines". The primary risk in connection with submarine pipelines is posed by their ecologically sensitive contents, such as oil or gas, which in case of damage can lead to a severe disturbance of the marine ecosystem. In this context, as noted, Article 208 of UNCLOS provides further specific regulations addressing pollution arising from seabed activities which are subject to national jurisdiction.

142 Article 220 (1), ibid.

143 A. Pozdnakova, *Criminal Jurisdiction over Perpetrators of Ship-Source Pollution* (Leiden: Brill 2013), 98.

144 See V. Becker-Weinberg, 'Article 228', in Proelss Commentary (n 54), 1549.

145 See UNODC, MARITIME CRIME: A MANUAL FOR CRIMINAL JUSTICE PRACTITIONERS (3rd edn.)

146 Article 208 (1) of UNCLOS (n 5).

Hence, coastal States may also regulate pollution from the above sources over their continental shelf, including by criminalising such activities. It is another question though if they also enjoy coterminous enforcement jurisdiction to this end over the continental shelf, practically meaning the power to arrest a foreign-flagged vessel that pollutes the marine environment during the immersion of a submarine pipeline. Under Article 78 (1) of UNCLOS, "the rights of the coastal State over the continental shelf do not affect the legal status of the superjacent waters or of the air space above those waters", which includes the freedom of navigation of foreign-flagged vessels. In any case, should the offender come within the territory of the coastal State concerned, the assertion of enforcement jurisdiction would be uncontroversial.

Exclusive Economic Zone (EEZ)

The EEZ is an area beyond and adjacent to the territorial sea not exceeding beyond 200 nautical miles (nm) from the baselines, in which the coastal State enjoys certain sovereign rights and jurisdiction, while other States enjoy the freedoms of navigation, overflight, and the freedom of laying submarine cables and pipelines. All these rights and freedoms of both the coastal State and the other States are governed by the relevant provisions of UNCLOS, especially Part V, and customary international law. An EEZ must be declared by coastal States, usually by domestic legislation, that is, it is not a maritime zone that all coastal States have by their own existence (ipso facto), as is the case for the territorial sea or the continental shelf.

Under Article 56 of UNCLOS the coastal States enjoy in the EEZ jurisdiction regarding the protection and preservation of the marine environment.[147] The coastal State's jurisdiction in this regard is addressed in detail in Part XII, and in particular Articles 210 (5), 211 (5) and (6), 216, 218, 220, and 234 of UNCLOS.

Of relevance to pollution from vessels in the EEZ is first Article 211(5) of UNCLOS which deals with the prescriptive jurisdiction of the coastal State to this end: "A coastal State for the purpose of enforcement may adopt laws and regulations for the prevention, reduction and control of pollution from vessels, conforming to and giving effect to generally accepted international rules and standards".[148] This latter requirement poses a significant limitation to the coastal State's prescriptive jurisdiction, since it provides that any national laws must not be stricter than those posed by GAIRS (Globally Agreed International Regulatory Standards).

ENFORCEMENT JURISDICTION IN THE EEZ

United Nations Convention on the Law of the Sea

Article 220 [149]

3. Where there are clear grounds for believing that a vessel navigating in the exclusive economic zone or the territorial sea of a State has, in the exclusive economic zone, committed a violation of applicable international rules and standards for the prevention, reduction and control of pollution from vessels or laws and regulations of that State conforming and giving effect to such rules and standards, that State may require the vessel to give information regarding its identity and port of registry, its last and its next port of call and other relevant information required to establish whether a violation has occurred.

4. States shall adopt laws and regulations and take

147 "In the exclusive economic zone, the coastal State has: ...(b) jurisdiction as provided for in the relevant provisions of this Convention with regard to: (iii) the protection and preservation of the marine environment". Article 56 (1) UNCLOS (n 5). Amongst the extensive literature on the EEZ see inter alia: D. Attard, *The Exclusive Economic Zone in International Law* (Oxford: Clarendon Press 1987).

148 Article 211 (5) UNCLOS, ibid.

149 See also United Nations Office on Drugs and Crime. (2023). Flag state jurisdiction and transnational organised crime at sea: Issue paper.

other measures so that vessels flying their flag comply with requests for information pursuant to paragraph 3.

5. Where there are clear grounds for believing that a vessel navigating in the exclusive economic zone or the territorial sea of a State has, in the exclusive economic zone, committed a violation referred to in paragraph 3 resulting in a substantial discharge causing or threatening significant pollution of the marine environment, that State may undertake physical inspection of the vessel for matters relating to the violation if the vessel has refused to give information or if the information supplied by the vessel is manifestly at variance with the evident factual situation and if the circumstances of the case justify such inspection.

6. Where there is clear objective evidence that a vessel navigating in the exclusive economic zone or the territorial sea of a State has, in the exclusive economic zone, committed a violation referred to in paragraph 3 resulting in a discharge causing major damage or threat of major damage to the coastline or related interests of the coastal State, or to any resources of its territorial sea or exclusive economic zone, that State may, subject to section 7, provided that the evidence so warrants, institute proceedings, including detention of the vessel, in accordance with its laws.

Article 228

Suspension and restrictions on institution of proceedings

1. Proceedings to impose penalties in respect of any violation of applicable laws and regulations or international rules and standards relating to the prevention, reduction and control of pollution from vessels committed by a foreign vessel beyond the territorial sea of the State instituting proceedings shall be suspended upon the taking of proceedings to impose penalties in respect of corresponding charges by the flag State within six months of the date on which proceedings were first instituted, unless those proceedings relate to a case of major damage to the coastal State or the flag State in question has repeatedly disregarded its obligation to enforce effectively the applicable international rules and standards in respect of violations committed by its vessels. The flag State shall in due course make available to the State previously instituting proceedings a full dossier of the case and the records of the proceedings, whenever the flag State has requested the suspension of proceedings in accordance with this article. When proceedings instituted by the flag State have been brought to a conclusion, the suspended proceedings shall be terminated. Upon payment of costs incurred in respect of such proceedings, any bond posted or other financial security provided in connection with the suspended proceedings shall be released by the coastal State.

2. Proceedings to impose penalties on foreign vessels shall not be instituted after the expiry of three years from the date on which the violation was committed, and shall not be taken by any State in the event of proceedings having been instituted by another State subject to the provisions set out in paragraph 1.

3. The provisions of this article are without prejudice to the right of the flag State to take any measures, including proceedings to impose penalties, according to its laws irrespective of prior proceedings by another State.

Article 231

Notification to the flag State and other States concerned

States shall promptly notify the flag State and any other State concerned of any measures taken pursuant to section 6 against foreign vessels, and shall submit to the flag State all official reports concerning such measures. However, with respect to violations committed in the territorial sea, the foregoing obligations of the coastal State apply only to such measures as are taken in proceedings.

The diplomatic agents or consular officers and where possible the maritime authority of the flag State, shall be immediately informed of any such measures taken pursuant to section 6 against foreign vessels.

As to the enforcement jurisdiction by the coastal State in the EEZ, this is contingent upon the seriousness of the violation and its consequences regarding the environmental damage. As a first step the coastal State in accordance with Article 220 (3) of UNCLOS may require a vessel navigating in its EEZ or the territorial sea to give information regarding its identity and the specifics of the voyage, when there are clear grounds for believing that the vessel committed a violation of applicable international rules and standards for the prevention, reduction, and control of pollution from vessels in the EEZ.

According to Article 220 of UNCLOS, enforcement measures by coastal States should not be taken unless the violation has resulted in a substantial discharge causing or threatening significant pollution of the marine environment and the ship refused to give information or the information provided was manifestly at variance with the evident factual situation and the circumstances of the case justify such inspection. In such cases the coastal State may undertake physical inspection of the ship in accordance with Article 220 (5) of UNCLOS.

A coastal State is entitled pursuant to Article 220 (6) of UNCLOS to adopt further enforcement measures, that is, to detain the ship and institute proceedings, in case of clear objective evidence that the pollution in the EEZ caused major damage or threat of major damage to the coastline or related interests of the coastal State. The evidentiary threshold thus established is higher than the preceding paragraphs, requiring almost certainty regarding the polluter. Moreover, the damage caused or threatened must be major, and the major damage or threat of major damage must be to the coastline or related interests of the coastal State specifically, not the marine environment at large. In other words, even in cases of significant pollution or the threat thereof, the coastal State is authorised to obtain relevant information then transfer to the flag State for enforcement measures (Article 217), unless such pollution causes or threatens major damage to interest specific to the coastal State (see also Article 228 (1)).

In addition, under Article 220 (7) of UNCLOS the ship detained should be released with assurance of appropriate financial security. Further, as was stated, Article 230 (1) seems to limit the criminal prescriptive powers of the coastal States only to the imposition of monetary penalties.[150] However, the subsequent practice of States Parties to UNCLOS appears to depart from this provision.[151]

It is true that few States have resorted to the exercise of the powers granted in Article 220 in full, while cases of enforcement at sea in the form of boarding, inspection and detention, or the institution of proceedings related thereto, have not been reported.[152] It is only understandable that coastal States do not necessarily want to detain or prolong the presence of vessels causing pollution within their territorial sea or EEZ.[153]

With respect to violations of the MARPOL or the Ballast Water Convention in the EEZ, a coastal State must either take legal proceedings against the ship concerned or forward the evidence to the flag State. Where the latter deems the evidence sufficient, it must bring legal proceedings against the ship as soon as possible.[154]

150 See Article 230 (1) of UNCLOS (n 5).

151 See infra n. 203 et seq. and accompanying text.

152 See ILA, Committee on Coastal State Jurisdiction Relating to Marine Pollution, Final Report: London Conference (2000), 21, available at: http://www.ila-hq.org/en/committees/index.cfm/cid/12.

153 Hamamoto, Article 220, in Proelss Commentary (n 54), 1512.

154 Articles 4 (2) and 6 (3) (4) of MARPOL Convention (n 90), and Article 6 of the Ballast Water Management Convention (n98).

Port State Jurisdiction

Under general international law, States enjoy sovereignty in its ports and thus have the competence to prescribe laws and regulations concerning marine pollution. As per the case of coastal States, it appears that MARPOL and the London Convention and Protocol require them to exercise that competence.[155] Port States' territorial jurisdiction also gives them the competence to take enforcement action in their ports against foreign ships that have breached environmental discharge standards.[156]

UNCLOS contains specific provisions on port State jurisdiction in respect of the protection of the marine environment:

PORT STATE JURISDICTION

United Nations Convention on the Law of the Sea

ARTICLE 218
Enforcement by port States

1. When a vessel is voluntarily within a port or at an off-shore terminal of a State, that State may undertake investigations and, where the evidence so warrants, institute proceedings in respect of any discharge from that vessel outside the internal waters, territorial sea or exclusive economic zone of that State in violation of applicable international rules and standards established through the competent international organisation or general diplomatic conference.

2. No proceedings pursuant to paragraph 1 shall be instituted in respect of a discharge violation in the internal waters, territorial sea or exclusive economic zone of another State unless requested by that State, the flag State, or a State damaged or threatened by the discharge violation, or unless the violation has caused or is likely to cause pollution in the internal waters, territorial sea or exclusive economic zone of the State instituting the proceedings.

3. When a vessel is voluntarily within a port or at an off-shore terminal of a State, that State shall, as far as practicable, comply with requests from any State for investigation of a discharge violation referred to in paragraph 1, believed to have occurred in, caused, or threatened damage to the internal waters, territorial sea or exclusive economic zone of the requesting State. It shall likewise, as far as practicable, comply with requests from the flag State for investigation of such a violation, irrespective of where the violation occurred.

4. The records of the investigation carried out by a port State pursuant to this article shall be transmitted upon request to the flag State or to the coastal State. Any proceedings instituted by the port State on the basis of such an investigation may, subject to section 7, be suspended at the request of the coastal State when the violation has occurred within its internal waters, territorial sea or exclusive economic zone. The evidence and records of the case, together with any bond or other financial security posted with the authorities of the port State, shall in that event be transmitted to the coastal State. Such transmittal shall preclude the continuation of proceedings in the port State.

Article 220
Enforcement by coastal States

1. When a vessel is voluntarily within a port or at an off-shore terminal of a State, that State may, subject to section 7, institute proceedings in respect of any violation of its laws and regulations adopted in accordance with this Convention or applicable international rules and standards for the prevention, reduction and control of pollution from vessels when the violation has occurred within the

155 See e.g., Articles 1 and 4 (2) of MARPOL, ibid.

156 See, e.g., E. Molenaar, Port State Jurisdiction: Toward Comprehensive, Mandatory and Global Coverage (2007) 38(1–2) *Ocean Development and International Law* 225, 229; R. Churchill, 'Port State Jurisdiction Relating to the Safety of Shipping and Pollution from Ships: What Degree of Extra- Territoriality?' (2016) 31 *International Journal of Marine and Coastal Law* 442.

territorial sea or the exclusive economic zone of that State.

Article 228
Suspension and restrictions on institution of proceedings

1. Proceedings to impose penalties in respect of any violation of applicable laws and regulations or international rules and standards relating to the prevention, reduction and control of pollution from vessels committed by a foreign vessel beyond the territorial sea of the State instituting proceedings shall be suspended upon the taking of proceedings to impose penalties in respect of corresponding charges by the flag State within six months of the date on which proceedings were first instituted, unless those proceedings relate to a case of major damage to the coastal State or the flag State in question has repeatedly disregarded its obligation to enforce effectively the applicable international rules and standards in respect of violations committed by its vessels. The flag State shall in due course make available to the State previously instituting proceedings a full dossier of the case and the records of the proceedings, whenever the flag State has requested the suspension of proceedings in accordance with this article. When proceedings instituted by the flag State have been brought to a conclusion, the suspended proceedings shall be terminated. Upon payment of costs incurred in respect of such proceedings, any bond posted or other financial security provided in connection with the suspended proceedings shall be released by the coastal State.

2. Proceedings to impose penalties on foreign vessels shall not be instituted after the expiry of three years from the date on which the violation was committed, and shall not be taken by any State in the event of proceedings having been instituted by another State subject to the provisions set out in paragraph 1.

3. The provisions of this article are without prejudice to the right of the flag State to take any measures, including proceedings to impose penalties, according to its laws irrespective of prior proceedings by another State.

Article 231
Notification to the flag State and other States concerned

States shall promptly notify the flag State and any other State concerned of any measures taken pursuant to section 6 against foreign vessels, and shall submit to the flag State all official reports concerning such measures. However, with respect to violations committed in the territorial sea, the foregoing obligations of the coastal State apply only to such measures as are taken in proceedings. The diplomatic agents or consular officers and where possible the maritime authority of the flag State, shall be immediately informed of any such measures taken pursuant to section 6 against foreign vessels.

Article 218 (1) of UNCLOS authorises port States to detain foreign vessels, which have voluntarily[157] entered one of the ports, and to institute proceedings regarding pollution violations committed outside the maritime zones of the port State.[158] Under Article 218 (2), "no proceedings pursuant to paragraph 1 shall be instituted (by the port State) in respect of a discharge violation in the internal waters, territorial sea or exclusive economic zone of another State unless requested by that State, the flag State, or a State damaged or threatened by the discharge violation, or unless the violation has caused or is likely to cause pollution in the internal waters, territorial sea or exclusive economic zone of the State

157 From this wording it can be inferred that vessels in a situation of force majeure or distress are exempted from port State enforcement measures, because they did not enter the port on their own free will, but to seek shelter and possibly save the lives of passengers and crew.

158 See Article 218 of UNCLOS (n 5). See also T. L McDorman, Port State Enforcement: A Comment on Article 218 of the 1982 Law of the Sea Convention (1997) 28 *Journal of Maritime Law and Commerce* 305

instituting the proceedings". [159] Consequently, if the port State is affected by the discharge violation, it is entitled to institute proceedings. This provision is an expression of an adoption, at least partially, of the 'effects' principle of jurisdiction, which will be addressed in the following paragraphs of this Chapter.

Article 218 of UNCLOS does not make the power of a port State to detain and institute proceedings against foreign vessels that have committed pollution violations on the high seas contingent upon the permission of the flag State. This leads to the conclusion that port States have ample prescriptive jurisdiction regarding pollution from vessels, including pollution crimes.

Article 220 (1) of UNCLOS is also noteworthy, providing that "when a vessel is voluntarily within a port or at an off-shore terminal of a State, that State may, subject to section 7, institute proceedings in respect of any violation of its laws and regulations adopted in accordance with this Convention or applicable international rules and standards for the prevention, reduction and control of pollution from vessels when the violation has occurred within the territorial sea or the exclusive economic zone of that State".[160] Contrary to Article 218 of UNCLOS, which provides for enforcement jurisdiction vis-à-vis pollution committed in foreign States' national jurisdiction, Article 220 applies to pollution committed in that State's national jurisdiction. Port states may also adopt administrative measures in order to prevent an unseaworthy ship from sailing and permit it to proceed only to the nearest appropriate repair yard to restore seaworthiness and continue its trip. [161]

Port State jurisdiction is subject to certain limitations, such as those concerning penalties or physical inspections that will be analysed later. Noteworthy here are the following provisions with significant practical application:

First, Article 228 of UNCLOS safeguards the primacy of flag State jurisdiction by providing for the suspension of proceedings by port and coastal States regarding violations committed by foreign vessels. The possibility of flag States demanding the suspension of proceedings is limited to the circumstances and conditions provided in this provision.

In more detail, under Article 228 (1) of UNCLOS, "[p]roceedings to impose penalties in respect of any violation of applicable laws and regulations or international rules and standards relating to the prevention, reduction and control of pollution from vessels committed by a foreign vessel beyond the territorial sea of the State instituting proceedings shall be suspended upon the taking of proceedings to impose penalties in respect of corresponding charges by the flag State within six months of the date on which proceedings were first instituted, unless those proceedings relate to a case of major damage to the coastal State or the flag State in question has repeatedly disregarded its obligation to enforce effectively the applicable international rules and standards in respect of violations committed by its vessels. The flag State shall in due course make available to the State previously instituting proceedings a full dossier of the case and the records of the proceedings, whenever the flag State has requested the suspension of proceedings in accordance with this article. When proceedings instituted by the flag State have been brought to a conclusion, the suspended proceedings shall be terminated."162

It follows that flag State has six months to take proceedings as of the date that proceedings were first initiated by the port or coastal State, including those instituted by port States and suspended by coastal States. If flag States do not institute proceedings to impose penalties, or fail to do so within six months, or should they institute

159 Article 218 (2) UNCLOS, ibid.
160 Article 220 (1), ibid.
161 Article 219, ibid.
162 Article 228 (1), ibid (emphasis added).

proceedings based on the same facts, port and coastal States are entitled to continue proceedings against the foreign vessel.

In this regard, Article 231 of UNCLOS also provides that "States shall promptly notify the flag State and any other State concerned of any measures taken pursuant to [Part XII Section 6 of UNCLOS, namely articles 213–222] against foreign vessels and shall submit to the flag State all official reports concerning such measures. However, with respect to violations committed in the territorial sea, the foregoing obligations of the coastal State apply only to such measures as are taken in proceedings. The diplomatic agents or consular officers and where possible the maritime authority of the flag State, shall be immediately informed of any such measures taken pursuant to section 6 against foreign vessels". [163]

Thus, under this provision, the port State is under a twofold obligation: first, the prompt notification of flag States in relation to enforcement measures taken, and second, the submission to the flag State of all official reports. This obligation enables flag States to become aware of measures being enforced against their ships, thus giving them the opportunity to demand the suspension of proceedings for violations committed beyond the territorial sea in conformity with Article 228 of UNCLOS.

Besides the six-month time frame for the suspension of the proceedings, there are two other limitations to the exercise of flag State pre-emption under Article 228 (1). First, when proceedings regard a case of major damage to the coastal State; and second in cases where the flag State has repeatedly disregarded its obligation to effectively enforce applicable international rules and standards in respect of violations committed by vessels flying its flag. Accordingly, in the case of repeated non-compliance by flag States, port and coastal States have the possibility to pursue proceedings. In this case, the exercise of flag State preemption may not interfere with the exercise of coastal State enforcement.

Notably, under Article 228 (2), "proceedings to impose penalties on foreign vessels shall not be instituted after the expiry of three years from the date on which the violation was committed and shall not be taken by any State in the event of proceedings having been instituted by another State subject to the provisions set out in paragraph 1". Hence, the possibility of port and coastal States instituting proceedings against foreign vessels is limited to three years.

Article 228 (2) also impedes any State from instituting proceedings if these have already been initiated by another State. These limitations inhibit port and coastal States from extending investigations longer than is necessary, which could potentially delay the decision to institute procedures. It also prevents parallel proceedings from being instituted.

In practice, port States appear to have made little use of their powers under Articles 218 (1) and 220 (1) of UNCLOS. That may be because there is little incentive to devote the effort and expense necessary to take proceedings against discharge beyond their territory or because they do not necessarily want to detain or prolong the presence of vessels causing pollution within their territorial sea or EEZ.[164] On the other hand, some non-parties to UNCLOS have adopted an alternative approach to proceedings against foreign ships[165].

163 Article 231, ibid.

164 See Churchill, Lowe, Sander (n 24), 653 and Hamamoto, Article 220, in Proelss Commentary (n 54), 1511-12.

165 The US, for example, employs an alternative approach to proceedings against foreign ships suspected of having violated international discharge standards beyond its maritime zones. If the examination of the ship's Oil Record Book in a US port indicates that no discharge occurred but the US authorities can substantiate that it did, they will prosecute the ship for failing to observe one of the conditions for entry to US ports, namely maintenance of an accurate Oil Record Book. That will be an exercise of traditional territorial jurisdiction. For an example of such prosecution see *United States v Royal Caribbean Cruises Ltd*. (1998). See also S. Geham, *United States v Royal Caribbean Cruises Ltd*: use of federal 'False Statements Act' to extend jurisdiction over polluting incidents into territorial seas of

As a final note, IMO Conventions complement the general UNCLOS provisions regarding the enforcement by the port States of environmental obligations to ships voluntarily entering in their ports. Article 6 of MARPOL stipulates that a ship be subject to inspection by officers appointed or authorised by the port State for the purpose of verifying whether the ship has discharged any harmful substances in violation of the provisions of the regulations, while providing for obligatory Oil Record Books, which serve as the basis of enforcement actions, as per Regulation 17 Chapter 3 Annex I MARPOL.[166] Several Memoranda of Understanding, covering most of the globe, delineate their own procedures for port inspections, like the Paris (1982),[167] the Mediterranean (1997),[168] and the Tokyo (1993) MoUs. Where there are clear grounds for believing that the condition of a ship does not correspond to a certificate under MARPOL or the Ballast Water Convention, or that the master and crew are not familiar with essential shipboard procedures for controlling pollution, they may detain the ship until its faults have been rectified.[169]

The following table summarises the key takeaways regarding UNCLOS' jurisdictional provisions on marine pollution:

1. Minimum threshold: International rules & standards

2. Exception: Precluded from adopting laws related to CDEM standards and hindering innocent passage (unless willful and serious pollution)

3. When clear grounds for believing violated laws and regulations

4. If the evidence so warrants

5. Substantial discharge causing or threatening significant pollution

6. Clear and objective evidence / Major damage or threat of major damage to the coastline or related interests

7. International rules & standards

ENFORCEMENT JURISDICTION			
	TERRITORIAL SEA	**EEZ**	**HIGH SEAS**
FLAG STATE	-	CONCURRENT WITH THE COASTAL STATE	UNRESTRICTED
COASTAL STATE	Physical inspection[3] Institution of proceedings[4]	Request information[3] Physical inspection[5] Institution of proceedings[6]	-
PORT STATE	When in port with request from coastal or flag state	When in port with request from coastal or flag state	When in port

PRESCRIPTIVE JURISDICTION			
	TERRITORIAL SEA	**EEZ**	**HIGH SEAS**
FLAG STATE	UNRESTRICTED[1]	UNRESTRICTED[1]	UNRESTRICTED[1]
COASTAL STATE	UNRESTRICTED[2]	UNRESTRICTED[7]	-
PORT STATE	UNRESTRICTED	UNRESTRICTED	UNRESTRICTED

foreign States' (2001) 7 *Ocean and Coastal Law Journal* 167-83.

166 See Article 6 (1) of MARPOL Convention (n 90).

167 See Paris Memorandum of Understanding on Port State Control (2013), as amended, available at: https://www.parismou.org/system/files/Paris%20MoU%2-C%20incl%2036th%20amendment%20%28final%29.pdf.

168 Sect. 3.7 Memorandum of Understanding on Port State Control in the Mediterranean Region (2006), available at: http://www.med-mou.org/.

169 Article 5 (2) MARPOL Convention (n 81), Annex I, Reg 11, Annex II, Reg 9, Annex III, Reg 8 et al. See also Articles 9-11 of the Ballast Water Management Convention (n 89).

Other Legal Bases or Heads of Jurisdiction

a. State of Nationality of the Master, the Operator, and Other Persons Involved in the Operation of the Vessel

It is very common that a State may assert jurisdiction to punish or regulate the conduct of its own nationals for acts committed aboard foreign vessels (the principle of nationality).[170] This is also acknowledged in UNCLOS, e.g., under Article 97 (1), which expressly allocates jurisdiction to the State of nationality of the master or the crew of the ship regarding an incident of navigation on the high seas. In a similar vein, Article 117 of UNCLOS provides for the States' duty to cooperate in respect of nationals' fishing activities on the high seas.[171]

UNCLOS does not include an explicit provision regarding the jurisdiction of the State of nationality of the master or the crew for environmental issues. However, the nationality principle of jurisdiction may be applicable to ship-sourced pollution crimes. Thus, any State may enact criminal laws concerning marine pollution caused by its nationals - e.g. masters or crewmembers of the vessels concerned- and enforce them when they are in their territory or otherwise subject to their jurisdiction. In a similar vein, States may extend their jurisdiction under the nationality principle to the 'ship agent' or 'ship owner'.

CASE EXAMPLE

Norway

Harrier[172]

In 2015, the EIDE CARRIER, a LASH vessel owned by the Norwegian Eide Group company, was sold to new owners. At the time, the Eide Group categorically refuted that the vessel had been sold for scrap.

Nearly a year and a half later, in February 2017, the vessel tried to depart Norway under a new name, new flag and new registered owner. The vessel was now called the TIDE CARRIER. The ship had switched its flag to that of Comoros and was registered under an anonymous St. Kitts and Nevis post-box company called Julia Shipping Inc.

A few hours after departing, the vessel's engine failed. Despite the ship's deteriorating condition and adverse weather, the new captain, from Nabeel Ship Management, did not request assistance. As the vessel drifted towards one of Norway's most famous beaches, the Norwegian coast guard had to initiate a salvage operation to prevent the risk of an oil spill and grounding.

At the request of its owners, Julia Shipping Inc., the ship was laid up in Gismarvik. Its name was repainted and changed to HARRIER. The flag was also changed again, this time from Comoros to Palau. According to the Comoros registry, which was contacted by the Norwegian authorities, the vessel had never actually been registered under the Comoros flag.

The Norwegian authorities were alerted that the vessel had likely been sold to a beaching yard in South Asia for scrapping, with the post-box company

170 D. Guilfoyle, *Shipping Interdiction and the Law of the Sea* (Cambridge University Press, 2009) 101. See further PCA, The Muscat Dhows (France v. Great Britain), Award of 8 August 1905, RIAA XI, 83, 96; cf. and Article 97 (1) (flag State and State of nationality have jurisdiction in penal matters arising from a collision).

171 Article 117 UNCLOS (n 5). See also FAO, International Plan of Action on Illegal, Unreported and Unregulated Fishing 2001, 23 June 2001, para 18; available at: http://www.fao.org/docrep/003/y1224e/y1224e00.htm. See also EC Regulation 1005/2008 to prevent, deter and eliminate illegal, unreported, and unregulated fishing, Information Note, no. 3 'The IUU Regulation', par. 1, p.3.

172 Source: Shipbreaking Platform. (n.d.). Spotlight on the Harrier case. Retrieved July 6, 2024, from https://shipbreakingplatform.org/spotlight-harrier-case/. For the judgement of the Court of Appeal, please see : https://shipbreakingplatform.org/wp-content/uploads/2022/10/Translated-judgement-from-the-Appeal-Court-in-the-Tide-Carrier-case.pdf

Julia Shipping Inc. likely concealing a cash buyer. When the Norwegian Environment Agency boarded the laid-up vessel, they discovered evidence that the HARRIER was indeed insured for a 'break up voyage' from Norway to Gadani, Pakistan. They also found unidentified and excessive amounts of sludge and fuel oils. The HARRIER was placed under arrest and was not permitted to leave Norway unless it was destined for a ship recycling facility compliant with international and European hazardous waste laws.

Norwegian authorities pressed charges against the owners for having attempted to illegally export hazardous waste and rejected the complaint of Julia Shipping Inc., for the arrest order.

Without having paid the fees for lay-up in Gismarvik, the HARRIER was moved to anchor off the coast of Farsund. There, two crew members remained confined on board the ship for over a year. With the assistance of Norsk Gjenvinning, cash buyer Wirana eventually secured approval from both Norwegian and Turkish authorities to scrap the ship in Aliaga, Turkey, where it arrived in August 2018—three years after its initial sale for breaking. Before leaving Norway, Wirana was required to pay EUR 700,000 to GMC in Gismarvik for outstanding lay-up costs.

On its way to Aliaga, the HARRIER caused an oil spill in the Izmir region. Turkish authorities have given the owners a fine of USD 300.000 for the spill and also requested them to pay for the clean-up operation, estimated at 4.5 million USD. Recycling of the ship was delayed pending the payment of a fine and clean up costs. In the meantime, the recycling yard in Aliaga, SOK, was left with a vessel it had already paid Wirana for but could not start recycling—and Julia Shipping Inc. had vanished.

In Norway, police investigations, led by the financial crimes division, focused on the former and current owners of the ship, Georg Eide and cash buyer Wirana. In November 2020, Mr. Eide was sentenced to six months of unconditional imprisonment for assisting scrap dealer Wirana in the attempted illegal export of the ship. The court also ordered the confiscation of NOK 2 million in criminal proceeds from Eide Marine Eiendom AS.

Cash buyer Wirana was fined NOK 7 million for falsifying documents to deceive Norwegian authorities about the ship's true destination and its seaworthiness, enabling the vessel to leave Norway. While Wirana agreed to pay the fine, it did not admit to any wrongdoing. Additionally, marine warranty surveyor Aqualis Offshore and insurance company Skuld Maritime Agency have come under investigation for their roles in the attempted illegal export of the Harrier to Pakistan. Aqualis Offshore issued two certificates for the ship on the same day—one for a break-up voyage to Pakistan and another for a voyage to Dubai. Skuld Maritime Agency was involved in issuing the last-voyage insurance for the vessel.

The HARRIER case exposes the business practices of ship owners and cash buyers, highlighting a pattern of deceit and false information provided to authorities to evade checks for the illegal export of end-of-life ships.Furthermore, it underscores the importance of the nationality principle in initiating criminal proceedings against ship owners and other companies for pollution offences committed extraterritorially.

In the Harrier case it was of vital importance that the shipping company was Norwegian, smoothly initiating the application of the nationality principle of jurisdiction came effortlessly at play. Notably, this is different from the territorial State's assertion of criminal jurisdiction over 'local' persons, i.e., persons operating in the territory of the State concerned and involved in the criminal offence affecting the marine environment. For example, as illustrated in the X-PRESS PEARL case,[173] it was not the master that was in the command of the vessel when the accident occurred,

173 See n. 13.

but a 'pilot' designated by the Sri Lankan port authorities. Thus, besides the alleged Sri Lankan port authorities' responsibility, the pilot could arguably be prosecuted on the basis of Article 26(1)(a) of the Marine Pollution Prevention Act (MPPA), along with other offenders, for acting in gross negligence and causing damage.

b. Objective Territoriality Principle

Under general international law, jurisdiction can also be based on the objective territoriality principle. According to this principle, jurisdiction is established when "any essential constituent element of a crime is consummated on state territory".[174] In the context of the present enquiry, the environmental degradation, for example, caused by the pollution emissions could be regarded as a constituent element of the crime. As noted above, Article 220 (6) of UNCLOS alludes to major damage to the coastline or related interests of the coastal State as the legal basis for the assertion of jurisdiction by that State. [175]

Accordingly, States may exercise their jurisdiction, including their criminal jurisdiction, with regard to pollution discharges committed outside its territorial waters, as long as the harmful effects extend within its territory.[176]

STATE PRACTICE/CASE-LAW

Spain

Prestige[177]

On 13 November 2002 the ship Prestige, flying the flag of the Bahamas, was sailing in the Spanish EEZ off the coast of Galicia, carrying 70,000 tonnes of fuel oil. At a distance of 28 miles from Cape Finisterre it sent out an SOS after sustaining sudden and severe damage which produced a leak and caused the contents of its tanks to spill into the Atlantic Ocean.

As the Prestige was in danger of sinking, the maritime authorities launched a large-scale operation to rescue its crew. The ship was adrift and was approaching the coast, spilling its cargo into the sea. The ship's master was taken by helicopter to the offices of the Corunna (A Coruña) harbourmaster, where he was arrested.

The spillage of the ship's cargo caused an ecological disaster whose effects on marine flora and fauna lasted for several months and spread as far as the French coast.

According to the preliminary investigation, Mr Mangouras was detained by Spanish authorities for the offence of causing damage to natural resources and the environment for the purposes of Article 325 of Spanish Criminal Code (as stood in 2002).

In 2013, a regional court in Galicia acquitted him on the main offence, namely the environmental damage, while it found him guilty solely for serious disobedience to the Spanish authorities during the incident for his initial refusal to allow the Prestige to be taken under tow by a regional court in Galicia.[178] This judgement was subsequently overturned by the Spanish Supreme Court in 2016, which acquitted the captain of the offence of disobedience to authority, but sentenced him for a reckless offence against the environment in the aggravated modality of catastrophic deterioration to two years' imprisonment.[179]

174 I Brownlie, *Principles of Public International Law* (Oxford: Oxford University Press, 2009), 301.

175 "Where there is clear objective evidence that a vessel navigating in the exclusive economic zone or the territorial sea of a State has, in the exclusive economic zone, committed a violation referred to in paragraph 3 resulting in a discharge *causing major damage or threat of major damage to the coastline or related interests of the coastal State*..."; Article 220 (6) of UNCLOS (n 5) (emphasis added).

176 Pozdnakova (n 127), 148.

177 SAP C 2641/2013 - ECLI:ES:APC:2013:2641;, and SAP C 2641/2013 - ECLI:ES:APC:2013:2641

178 Ibid.

179 Ibid.

c. Passive Personality Principle

Under international law, a State may assert extraterritorial prescriptive jurisdiction over crimes committed by non-nationals if the victim of the crime is one of its nationals.[180] As posited by O' Keefe "today it is safe to say that passive personality has emerged under customary international law as a permissible basis of extraterritorial prescriptive criminal jurisdiction over the conduct of non-nationals, at least as regards serious offences against the person".[181] Accordingly, if, for example, a maritime pollution incident committed extraterritorially seriously affects the health of a national of a coastal State, the latter may initiate criminal proceedings against the offender(s), provided that it has established such jurisdiction under the passive personality principle.

d. Protective Principle

A state may lawfully criminalise the extraterritorial conduct of non-nationals in order to protect fundamental national interests, often but not necessarily related to national security.[182] Extraterritorial prescriptive jurisdiction over crimes by non-nationals on the basis of this so-called 'protective' principle is not uncontroversial and has traditionally been applied by States, for example, in respect of the counterfeiting of the State's currency by non-nationals operating in a foreign State.

Nothing precludes States from establishing such jurisdiction for the protection of their marine environment in cases where in another State there is the planning of a serious marine pollution crime, such as the dumping of toxic waste in the shores of the State concerned.

For example, in 1994, an Italian NGO named Legambiente used for the first time the term 'ecomafia' to underline the link between mafia-type associations and violations of environmental laws. The NGO reported that 346,000 tons of waste was seized heading for 10 European, 8 African and 5 Asian countries by Ndrangheta, Camorra, Mafia and Apulian clans.[183] Should one of the 'destination countries' of the waste have established jurisdiction under the protective principle, it could have initiated criminal proceedings against the perpetrators.

e. Treaty-Based Jurisdiction, Including BBNJ-Based Jurisdiction

Finally, there is the possibility that a pollution crime in the marine environment is committed outside of the territory of the State concerned, yet there is a specific treaty, according to which all States Parties may establish their jurisdiction over that crime. Such jurisdiction may be already established under the flag State principle or the principle of nationality; however, it is worth underlining treaty-based jurisdiction as a separate head of jurisdiction, since some States may not provide for (e.g.) the nationality principle.

A notable example of such treaty-based jurisdiction could be the recently adopted Implementing 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 ('BBNJ Treaty').[184] Under this Treaty, the Conference of the Parties may establish area-based management tools, including marine protected areas,[185] in which State Parties will implement certain management

180 See in relation to the principle of nationality (n 152); for the passive personality principle see Enrica Lexie case PCA, The 'Enrica Lexie' Incident (Italy v Italy), PCA Case No. 2015-28, Award of 21 May 2020, para 345, and Arrest Warrant of 11 April 2000 (Democratic Republic of the Congo v. Belgium), Judgment, Separate Opinion of President Guillaume, I.C.J. Reports 2002, p. 3 at p. 37, para. 4). See R. O'Keefe, *International Criminal Law* (OUP, 2015), 12.

181 O' Keefe, ibid, 13.

182 Ibid, 14.

183 Europol Threat Assessment – Italian Organised Crime, The Hague, June 2013, FILE NO: EDOC#667574 v8.

184 For the text of the treaty and status of signature see at https://www.un.org/bbnj//. For an early survey of the negotiations see E. Papastavridis, The Negotiations for a New Implementing Agreement under the UN Convention on the Law of the Sea concerning Marine Biodiversity' (2020) 69 *International & Comparative Law Quarterly*, pp. 585-610.

185 A Marine Protected Area is defined as follows: "'Marine protected area' means a geographically defined marine area that

measures. Obviously, these may involve the control of pollution from ships in these areas. The question is whether such measures may also include criminal sanctions.

In any case, as Article 25 (1)-(2) of the BBNJ Treaty provides, "Parties shall ensure that activities under their jurisdiction or control that take place in areas beyond national jurisdiction are conducted consistently with the decisions adopted under this Part". Moreover, "nothing in this Agreement shall prevent a Party from adopting more stringent measures with respect to its nationals and vessels or with regard to activities under its jurisdiction or control in addition to those adopted under this Part, in accordance with international law and in support of the objectives of the Agreement". It falls thus primarily with the flag State Party not only to prescribe but also to enforce its jurisdiction in this regard, while other heads of prescriptive jurisdiction are acknowledged, such as the principle of nationality. These could serve in the future as the legal basis for criminal sanctions to this effect by either the flag State Party or the State of the nationality of the offender.

Similarly, there could be maritime pollution crime caused by the omission or the inadequate conduct of an Environmental Impact Assessment that results in serious transboundary harm to an adjacent coastal State. The BBNJ and the relevant provisions could hypothetically furnish the legal basis for assertion of criminal jurisdiction by the States Parties concerned.

is designated and managed to achieve specific long-term biological diversity conservation objectives and may allow, where appropriate, sustainable use provided it is consistent with the conservation objectives", Article 1 (9) of BBNJ Treaty (n 26).

III.

OFFENCES & LIABILITY

Marine Pollution as a Crime falling under the Organised Crime Convention

Neither UNCLOS nor the other relevant global and regional treaties governing the protection of the marine environment contain criminal law provisions. This is obviously because UNCLOS and the other relevant instruments were not drafted with the aim of criminalising pollution of the marine environment, but rather of striking a delicate balance between the interests of coastal and flag States in the maritime domain and of regulating marine pollution.

This leads to the question of whether the Organised Crime Convention (UNTOC), which is the key international agreement concerning the suppression of transnational organised crime, including at sea, could be applicable to pollution crimes in the marine environment. In the ensuing paragraphs the elements of marine pollution crime as a crime falling under this latter Convention will be analysed.

To recall, the UNTOC is a treaty of universal participation, having 192 contracting parties, which applies to a very wide range of offences. Article 3 of UNTOC sets out that "this Convention shall apply, except as otherwise stated herein, to the prevention, investigation and prosecution of: (a) The offences established in accordance with articles 5 (participation in an organized criminal group), 6 (laundering of proceeds of crime), 8 (corruption) and 23 (obstruction of justice) of this Convention; and (b) Serious crime as defined in article 2 of this Convention; where the offence is transnational in nature and involves an organized criminal group".[186] UNTOC through its Article 15(1) obligates flag states to exercise their prescriptive jurisdiction to criminalise these crimes, where such competence exists. Article 15 of UNTOC stipulates that "[e]ach State Party shall adopt such measures as may be necessary to establish its jurisdiction over the offences established in accordance with articles 5, 6, 8 and 23 of this Convention when:... (b) The offence is committed on board a vessel that is flying the flag of that State Party or an aircraft that is registered under the laws of that State Party at the time that the offence is committed".[187]

UNTOC is applicable for the residual category of 'serious crime',[188] provided that this 'serious crime' is transnational and involves an organised criminal group.[189] UNTOC defines serious crime by reference to national legislation, namely conduct constituting an offence punishable by a maximum deprivation of liberty of at least four years or a more serious penalty.[190] Critical for the application of UNTOC is the establishment in national laws of crimes that affect the environment as serious crimes in the meaning of UNTOC. Through its resolution 10/6, the Conference of the Parties to UNTOC called "upon States Parties to the Convention to make crimes that affect the environment, in appropriate cases, serious crimes, in accordance with their national legislation, as defined in article 2 (b) of the Convention, in order to ensure that, where the offence is transnational in nature and involves an organised criminal group, effective international cooperation can be afforded under the Convention".[191]

Against this backdrop, the question is whether pollution crime in the marine environment may fall within the scope of the Convention. This leads to the following:

First, regarding transnationality, under Article 3 (2) of the UNTOC, "an offence is transnational in nature if: (a) It is committed in more than

186 See Article 3 UNTOC.
187 Article 15(1)(b) UNTOC (emphasis added).
188 See Article 2 UNTOC
189 See Article 3(1) UNTOC.
190 Article 2(b) UNTOC.
191 COP UNTOC resolution 10/6 (2020), para 4.

one State; (b) It is committed in one State but a substantial part of its preparation, planning, direction or control takes place in another State; (c) It is committed in one State but involves an organized criminal group that engages in criminal activities in more than one State; or (d) It is committed in one State but has substantial effects in another". Marine pollution could be considered transnational in nature, primarily because it often involves multiple States either through the direct movement of pollutants or through the impacts on different countries, considering the pollutants once introduced into the marine environment spread across maritime zones[192].

Second, it is possible that marine pollution would be committed by an organised criminal group in the sense of Article 2(a) of UNTOC.[193] Although the definition of 'organised criminal group' does not require a mafia-like structure,[194] at one end of the spectrum, cases such as 'ecomafia', namely incidents of illegal traffic and disposal of industrial, commercial, and radioactive waste by criminal syndicates, would fall neatly within this definition.

At the middle of the spectrum, there are incidents of legitimate maritime enterprises, which in order to avoid the costs of complying with the environmental regulations, discharge harmful substances in the marine environment. A nexus between organised crime and pollution crime (OC-PC nexus) could be present in this regard,[195] or the maritime enterprise and/or its officers could be considered to be members of an organised criminal group, if the broad elements of the definition of this term are met.

At the other end of the spectrum, there are cases of accidental unintentional oil spills. Where this is the case, the definition of an organised criminal group may not apply for one or both of the following two reasons. Firstly, the group of persons involved may not have acted with the aim of committing one or more serious crimes or offences established in accordance with UNTOC. Secondly, the group may not have acted in order to obtain, directly or indirectly, a financial or other material benefit.

Third, in respect of the crimes that must be committed in order for UNTOC to apply, it must be noted that nothing precludes the possibility that offences established under Articles 5, 6, 8 and 23 of UNTOC, namely the participation in an organised criminal group, the laundering of the proceedings of a crime, corruption and obstruction of justice, may take place in the context of marine pollution offences, thus triggering the application of UNTOC. With respect to the alternative requirement that the offence shall be 'serious', which according to Article 2 (b) of UNTOC is defined as "conduct constituting an offence punishable by a maximum deprivation of liberty of at least four years or a more serious penalty",[196] it is not very common for marine pollution crimes to be punishable by at least four years imprisonment.[197]

There are, however, a certain number of States that have prescribed penalties of up to 5 years of imprisonment for marine pollution offences, thus meeting the '4-years requirement' under UNTOC.

192 On the complexity that results from there being multiple sources and from the transboundary and cumulative nature of marine pollution, in particular when seeking to establish a causal relationship between any environmental damage and wrongful conduct, see Tanaka (n 68), 260.

193 'Organised criminal group' shall mean a structured group of three or more persons, existing for a period of time and acting in concert with the aim of committing one or more serious crimes or offences established in accordance with this Convention, in order to obtain, directly or indirectly, a financial or other material benefit', Article 2(a) of UNTOC (n 16).

194 See, in particular, the broad definition of "structured group" in Article 2(c), as used in the definition of "organised criminal group" in Article 2(a).

195 Strategic Report: The Nexus between Organised Crime and Pollution Crime 2022, p. 36. Lyon: INTERPOL and *Operation 30 Days at Sea 3.0 reveals 1,600 marine pollution offences worldwide.* (2021, April 29). Retrieved from INTERPOL: https://www.interpol.int/News-and-Events/News/2021/Operation-30-Days-at-Sea-3.0-reveals-1-600-marine-pollution-offences-worldwide

196 Article 2 (b) of UNTOC (n 16).

197 *The Global Response to Transnational Organised Environmental Crime.* (January 2014) (Geneva: The Global Initiative against Transnational Organised Environmental Crime), p. 3.

For example:

LEGISLATIVE EXAMPLE

USA

US Marine Protection, Research, and Sanctuaries Act of 1972 (MPRSA)

§ 105 Knowingly dumping material into the US territorial sea and contiguous zone that endangers human health, welfare, amenities, and the marine environment, ecological systems, and economic potentialities is a criminal offence punishable with up to 5 years of imprisonment.[198]

Mauritius

Merchant Shipping (Prevention of Pollution by Oil and Noxious Liquid Substances in Bulk) Regulations 2019 GN No. 47 of 2019 Government Gazette of Mauritius No. 26 of 16 March 2019.

"Where the master or owner of a ship fails to comply with these regulations [mainly MARPOL Regulations], the owner or master of the ship shall commit an offence and shall, on conviction, be liable to a fine not exceeding 50,000 rupees and to imprisonment for a term not exceeding 5 years".

Seychelles

Seychelles, [Cap 122 Maritime Zones (Marine Pollution) Regulations[199]

"§ 15 If any oil or oily mixture is - (i) discharged into a prohibited sea area specified in the Schedule to these Regulations; or (ii) discharged outside a prohibited sea area so as to cause or contribute to the pollution of a prohibited sea area or any part of Seychelles, then subject to these Regulations - (a) if the discharge is from a vessel, the owner or master of the vessel; or (b) if the discharge is from a place on land, the occupier of that place; or (c) if the discharge is from an apparatus used for transferring oil from or to a vessel, the person in charge of the apparatus, is guilty of an offence and is liable to imprisonment for 5 years and to a fine of R. 200,000".

South Africa

South Africa, Marine Pollution (Prevention of Pollution from Ships) Act (previous short title: International Convention for the Prevention of Pollution from Ships Act) 2 of 1986200

"(4) Any person convicted of an offence [offences related to MARPOL, committed in the territorial sea and EEZ alike] under subsection (1) shall be liable to a fine not exceeding R500000, or to imprisonment for a period not exceeding five years or to such fine as well as such imprisonment".

Spain

Spanish Criminal Code (2016)[201]

Article 325

"1. Anyone who, contravening the laws or other general provisions protecting the environment, directly or indirectly causes or carries out emissions, discharges, radiation, extractions or excavations, landfilling, noise, vibrations, injections or deposits, in the atmosphere, soil, subsoil or terrestrial,

198 See 16 USC § 1431 et seq. and 33 USC §1401 et seq. (1988). The MPRSA also authorises criminal penalties (including fines, 5 years in prison, or both) for knowing violations of the MPRSA or the implementing regulations. The MPRSA provides for the seizure of any property used to commit or facilitate the violation, or any property derived from any proceeds that the person obtained, directly or indirectly, as the result of the violation; see here: <https://www.epa.gov/enforcement/marine-protection-research-and-sanctuaries-act-mprsa-and-federal-facilities>.

199 Available at <https://faolex.fao.org/docs/pdf/sey67859.pdf>.

200 Available at <https://www.gov.za/documents/international-convention-prevention-pollution-ships-act-19-mar-1986-0000>

201 See at https://www.mjusticia.gob.es/es/AreaTematica/DocumentacionPublicaciones/Documents/Criminal_Code_2016.pdf (emphasis added).

underground or maritime waters, including high sea, with an impact even on transboundary spaces, as well as water withdrawals that, by themselves or jointly with others, cause or may cause substantial damage to the quality of air, soil or water, or to animals or plants.

2. If the above behaviours, by themselves or together with others, could seriously harm the balance of natural systems, a prison sentence of two to five years, a fine of eight to twenty-four months and special disqualification for profession or trade will be imposed for a period of one to three years. If there is a risk of serious damage to the health of people, the prison sentence will be imposed in its upper half and may go up to the highest in degree".

Other States' legislation may provide for less severe penalties. For example, under Kenyan legislation, "any person who contravenes the provisions of these Regulations [MARPOL Regulations] is guilty-of an offence [in Kenyan territorial sea] and is liable, upon conviction to imprisonment for a term of not more than eighteen months or to a fine of not more than three hundred and fifty thousand shillings or to both such fine and imprisonment".[202]

In conclusion, while some cases of marine pollution would fall under the Organized Crime Convention, such as when there is an organised criminal group involved in transnational marine pollution which meets the definition of the relevant offences or a "serious crime" under the said Convention, such as in cases of intentional disposal of toxic waste of criminal syndicates, other cases of marine pollution may fall outside of the scope of the Convention because (a) they do not amount to an offence established in accordance with the Convention or "serious crime"; (b) they are not transnational in nature; and/or (c) they do not involve an organised criminal group, including cases where the persons involved do not act in order to obtain, directly or indirectly, a financial or other material benefit.

Elements of Offences

In general, criminal offences have two components: the physical (also known as the actus reus) and the mental (also known as the mens rea) elements.

a) Mens Rea

First, in respect of the mental element in pollution crimes in the marine environment, it is submitted that proof of the mental element would regularly be required. Such mental elements may vary from State to State depending on their respective legal systems and traditions, ranging from 'intention' or 'knowledge' to 'gross negligence', 'serious negligence' or even cases of strict liability (see legislative examples and case law below).

Mindful of the differences in State legislation, this Manual does not adopt a position on the wording that States should use to establish this requirement of proof of the requisite mental element.

States may consider adopting stricter measures and may allow proof of less strict mental elements that would suffice for establishing a conviction for marine pollution. These less strict mental elements could include recklessness and ('gross' or 'serious') negligence. As already discussed, there is a wide margin of discretion in the exercise of prescriptive jurisdiction by States as well as in the relevant case law, like in the Prestige.[203] While lowering the requisite mental elements for a crime facilitates obtaining criminal convictions, States should exercise great caution in lowering the threshold because of the prejudice to the rights of defendants it may entail. Moreover, in some legal systems, the removal of the requisite mental element to create offences of strict liability is impermissible, except

202 Kenya, Environmental (Prevention of Pollution in Coastal Zone and other Segments of the Environment) Regulations, 2003; available at <https://nema.go.ke/images/Docs/Regulations/Coastal%20protection%20regulation-1.pdf>

203 See the 2016 Judgment of the Spanish Supreme Court.

in limited circumstances. On the other hand, there is case law substantiating the strict liability of masters in the context of marine pollution crimes.

CASE EXAMPLE

France

Arrêt de la Cour de Cassation, Chambre Criminelle, Du 24 Novembre 2020

AZURA

This case concerned Azura, a cruise vessel which used illicit fuel to travel from Barcelona to Marseille. After inspection at Marseille, the master was prosecuted for various violations of the applicable French law (Articles L. 5412-2 du code des transports, L. 218-2, L. 218-15, L. 218-16, L. 218-18, L. 218-23 et L. 173-7 du code de l'environnement et 591 du code de procédure pénale), convicted and issued with a fine. The Court of Appeal found that there was no proof of the mental element - no intention by the master. The Cour de Cassation, however, overruled the ruling of the Court of Appeal reasoning on the basis that, amongst others, the safety of the crew, environment and security is entrusted to the master of the vessel, that person should ensure that the fuel complies with the national legislation. Compliance with the protection of the environment here applied the strict liability system which permitted the conviction of the master.

Further examples of national provisions are as follows:

Australia

Compliance and Enforcement Protocol to the Protection of the Sea (POTS) Act

The POTS Acts include a range of criminal offences, most of which are strict liability offences. Strict liability means there is no fault or intention element to prove. Some offences under the Protection of the Sea (Prevention of Pollution from Ships) Act 1983 have an element of recklessness or negligence,[204] which are therefore not strict liability. As breaches of the POTS Acts are always criminal offences, the only applicable enforcement option for such offences is prosecution. For each offence within the POTS Acts, there are elements that need to be proven, by provision of admissible evidence, if prosecution is to proceed. The onus, or burden, of proving those elements beyond reasonable doubt is on the prosecution, not on the defendant. [...]. A criminal prosecution, if pursued, may result in a fine being imposed and/or a period of imprisonment and the recording of a criminal conviction.

In the EU context,

i. according EU Directive 2005/35/EC (L 255/11) on ship-source pollution and on the introduction of penalties for infringements, as amended by Directive 2009/123/EC, "Member States shall ensure that ship-source discharges of polluting substances, including minor cases of such discharges, into any of the areas referred to in Article 3(1)

ii. are regarded as infringements if committed with intent, recklessly or with serious negligence".[205] Moreover, "Member States

204 "For example, see sections 17(1), 21(1), 26BC(1), 26D(1), 26F(1) and 26FEG(1). These offence provisions include elements such as to engage in conduct and the person being reckless or negligent. There are strict liability versions of these offences, however the strict liability offences have a much lower penalty."

205 Article 4 (1) of the Directive 2009/123/EC of the European Parliament and of the Council of 21 October 2009 amending Directive 2005/35/EC on ship-source pollution and on the introduction of penalties for infringements OJ L 280, 27.10.2009, p. 52–5 (emphasis added). This will be repealed by the new Directive soon to enter into force. See also https://www.europarl.europa.eu/RegData/etudes/

shall take the necessary measures to ensure that infringements…are subject to effective, proportionate and dissuasive penalties, which may include criminal or administrative penalties. Each Member State shall take the measures necessary to ensure that the penalties apply to any person [therefore not only the master or the crew members] who is found responsible for an infringement within the meaning of Article 4".

iii. In accordance with EU Directive 2008/99/EC (L 328/28) on the protection of the environment through criminal law Member States shall ensure that the following conduct constitutes a criminal offence, when unlawful and committed intentionally or with at least serious negligence: the discharge, emission or introduction of a quantity of materials or ionising radiation into air, soil or water, which causes or is likely to cause death or serious injury to any person or substantial damage to the quality of air, the quality of soil or the quality of water.

As noted in the Introduction, there has been a provisional agreement among EU authorities for the recast Directive.[206] Pursuant to the proposals of the Council of the EU for a new Directive replacing the latter one (9 December 2022), the following penalties are recommended: "In the case of natural persons who commit one of the acts covered, the text sets out the following penalties: for intentional offences causing death to any person, a maximum prison term of at least ten years for offences committed with at least serious negligence causing death to any person, a maximum prison term of at least five years for other intentional offences included in the legislation, a maximum prison term of either at least five years or at least three years. In the case of legal persons, the text sets out the following penalties: for the most serious offences, a maximum fine of at least 5% of the legal person's total worldwide turnover, or alternatively €40 million for all other offences, a maximum fine of at least 3% of the legal person's total worldwide turnover, or alternatively €24 million".[207]

The European Parliament's Report on the Commission's proposal of March 2023 includes a draft Recital No 7 stating that:

"In order to constitute an environmental offence under this Directive, conduct should be unlawful under Union law protecting the environment, irrespective of its legal basis, or national laws, administrative regulations or decisions giving effect to that Union law. The conduct which constitutes each category of criminal offence should be defined and, where appropriate, a threshold which needs to be met for the conduct to be criminalised should be set. Such conduct should be considered a criminal offence when committed intentionally and also when committed with *serious negligence. Illegal conduct that causes death or serious harm to any person's health, substantial damage or a considerable risk of substantial damage for the environment or is considered otherwise as particularly harmful to the environment constitutes a criminal offence when committed with serious negligence. Member States remain free to adopt or maintain more stringent criminal law rules in that area".* [208]

It is underscored that in its famous judgement of 3 June 2008 in Intertanko and Others (Case C-308/06), the Court of Justice of the European Communities ('ECJ'), having been called upon to examine a challenge to the validity of Directive 2005/35/EC, found that the concept of 'serious negligence' provided for in many national legal systems could only refer to a patent breach of a

BRIE/2023/753928/EPRS_BRI(2023)753928_EN.pdf

206 See n. 18.

207 See at Council of the European Union. (2022, December 9). Council agrees its negotiating mandate on the environmental crime directive. Retrieved July 6, 2024, from https://www.consilium.europa.eu/en/press/press-releases/2022/12/09/council-agrees-its-negotiating-mandate-on-the-environmental-crime-directive/

208 See at https://www.europarl.europa.eu/doceo/document/A-9-2023-0087_EN.html#_section1 (emphasis added).

duty of care (paragraph 76 of the judgement). The ECJ further held that 'serious negligence' within the meaning of the Directive should be understood as entailing an unintentional act or omission by which the person responsible committed a patent breach of the duty of care which he should have and could have complied with in view of his attributes, knowledge, abilities and individual situation (paragraph 77).[209]

This pronouncement of the ECJ reflects a general understanding on what constitutes 'serious negligence', specifically in the context of pollution crimes in the marine environment, that should inform accordingly the relevant national legislation.

In any event, as note above, this Manual defers to each State individually the decision as to the requisite mental element to be included in the respective provisions under national law.

b) Actus Reus

The seriousness of the damage to the marine environment should also be considered in the criminal legislation. Although UNCLOS does not use consistent terminology, several provisions suggest that the gravity of environmental damage should be a factor in criminal laws: Article 19 of UNCLOS stipulates that serious pollution renders the passage of a vessel through territorial sea as non-innocent, while Article 220 of UNCLOS allows coastal States to take various steps of enforcement action against foreign vessels when there are clear grounds for believing that a vessel in the EEZ has committed a substantial discharge causing or threatening significant pollution of the marine environment or clear and objective evidence of a discharge causing major damage or threat of major damage to its coastline. UNCLOS, though, does not elaborate further on the criteria that should be used by states in order to determine the seriousness of the pollution.

Under national law, States have used various criteria to determine whether the marine pollution offence would be considered as serious as well as to determine penalties that are effective, proportionate, and dissuasive.

The relevant criteria pursuant to State practice are as follows:

(i) The endangering consequences of the pollution to human health and life. Such consequences are taken often into account in national legislation as a criterion determining the severity of the penalties to be imposed. National legislation offers various examples of appropriate actus rea in criminalisation of marine pollution with imminent danger to human health:

> a) According to US Clean Water Act of 1972 a fine of as much as $250,000, 15 years in prison, or both, for violations that knowingly place another person in imminent danger of death or serious bodily injury.
>
> (b) In implementing EU Directive 2008/99/EC, EU Member States have legislated imprisonment penalties ranging from 1 year to life imprisonment strictly for unlawful conduct that 'caused death or serious injury to any person or substantial damage to the environment'.

(ii) The duration and location of the damage are also factors in determining the seriousness of an act, including if the act is committed in a marine protected area, which often incurs stricter penalties.

A Marine Protected Area (MPA) is "a geographically defined marine area that is designated and managed to achieve specific long-term biodiversity conservation".[210] MPAs may be established under various international, such as Article 211(6) of UNCLOS, Annexes I, II, IV and V of MARPOL (referred to as 'special areas'), or by an IMO decision (called 'Particularly Sensitive Sea Areas'

209 See at https://curia.europa.eu/juris/liste.jsf?language=en&t,f&num=c-308/06 (emphasis added).

210 Article 1 of BBNJ Treaty (n 26).

(PSSA), [211] as well as national instruments.

To prevent, reduce, or control pollution in MPAs, coastal States can enact special mandatory measures, including criminal sanctions.

LEGISLATIVE EXAMPLE

The Philippines

Tubbataha Reefs Natural Park (TRNP), Philippines Republic Act No. 10067, April 06, 2010

23." It shall be unlawful for any person or entity to dump waste inside the TRNP. It shall likewise be unlawful to clean and change oil of vessels within the TRNP. Violation of this provision shall be punishable by imprisonment of 1 year to 3 years, and fine of not less than 50,000.00 pesos. The TRAMP shall impose an administrative fine of not less than 10000000 Pesos and not more than 30000000 Pesos, and order the violator to clean up the waste or pay for the clean-up thereof".

Other violations concerning introduction of exotic species are punished with imprisonment of six months to six years, while hunting, catching, fishing, killing or possession of resources incur penalties up to 12 years of imprisonment.

(iii) A distinction between 'environmental pollution' and 'environmental disasters' may also be employed to indicate the seriousness of the harmful act.

LEGISLATIVE EXAMPLE

Italy

Criminal Code

Article 452-bis punishes acts of 'environmental pollution' - namely (i) the perpetration of the crime in protected areas; (ii) damages to protected animal and plant species; (iii) pollution followed by death or bodily harm - by a fine between EUR 10,000 and EUR100,000 and imprisonment of two to six years.

Article 452-quarter punishes 'environmental disasters' - meaning (i) the irreversible damage of ecosystem; (ii) damage to an ecosystem which requires exceptional interventions; (iii) an offence against public safety caused by the extension of damage or the number of injured persons - by imprisonment of five to fifteen years.

(iv) Links to other criminal activities may be considered as aggravating circumstances leading to stricter criminal penalties for conduct harmful to the marine environment, including crimes falling under UNTOC, or documents' fraud related to marine pollution offences.

Indeed, there could be additional offences that may increase the sentence of a person accused of a crime affecting the marine environment. These offences could be offences established in accordance with UNTOC, like participation in an organised criminal group, or other secondary offences, like in the famous Prestige case ('disobedience of coastal State authorities' orders'), or falsification of ship's books or other documents.

LEGISLATIVE EXAMPLE AND PRACTICE

Italy

Environmental Code (Legislative Decree No. 152, 2006)

Article 260 establishes the felony of "Organised activities for the illegal trafficking of waste", punishable by imprisonment ranging from one to six years, "whoever, in order to achieve an unfair profit, with multiple operations and through the establishment of means and continuing organised activities, sells, receives, transports, exports, imports or otherwise improperly handles large

211 Revised Guidelines for the Identification and Designation of PSSAs (2005).

quantities of waste".

To catch all possible associations and organisational structures, the Italian Court of Cassation has clarified that this offence "does not require the existence of a structure operating in an exclusively illegal way, because the criminal activity can also be committed in a context involving waste commercial operations carried out in a lawful way" (19 October 2011, No. 47870).

Singapore

Prevention of Pollution of the Sea Act (Chapter 243) (Original Enactment: Act 18 of 1990) (REVISED EDITION 1999)[212]

"Failure to carry record books and evidence: 14. (1) If any ship fails to carry an oil record book or cargo record book as is required under section 12 or 13, the owner, the agent or the master of that ship shall be guilty of an offence and shall be liable on conviction to a fine not exceeding $5,000. (2) Any person who fails to comply with any of the requirements imposed by section 12 or 13 or any regulations made thereunder shall be guilty of an offence and shall be liable on conviction to a fine not exceeding $5,000. (3) Any person who makes an entry in any oil record book or cargo record book carried or any record kept under section 12 or 13 which is to his knowledge false or misleading in any material shall be guilty of an offence and shall be liable on conviction to a fine not exceeding $10,000 or to imprisonment for a term not exceeding 12 months or to both. (4) In any proceedings under this Act — (a) any oil record book or cargo record book carried, or any record kept in pursuance of any regulations made under section 12 or 13 shall be admissible as evidence of the facts stated in it; (b) any copy of an entry in such oil record."

CASE EXAMPLE

Spain

Prestige

The captain of the Prestige, Mr Mangouras, was charged for acting in a way that led to a disaster and caused serious pollution to the environment. He was also charged for disobeying the Spanish and French marine authorities to tow the vessel. In 2013, a regional court in Galicia acquitted him for the main offence, namely the environmental damage, while it found him guilty solely for serious disobedience to the Spanish authorities during the incident for his initial refusal to allow the Prestige to be taken under tow by a regional court in Galicia.

As evidenced by the abundant US practice, an alternative is to seek to prosecute offenders for falsifying, or not reporting oil pollution in, the record books of the vessel.[213] Apart from the Royal Caribbean Cruise Lines case, the following cases are amongst others reported:

CASE EXAMPLES[214]

USA

1. *In January 1999, the STAR EVIVIA, while on a voyage from Baltimore, Maryland, to Savannah, Georgia, spilled oil off the coast of South Carolina. In May 2000, the United States Attorney in Charleston, South Carolina, obtained indictments of the ship's master and chief engineer, both Philippine nationals. The indictments charged them with spilling the oil in violation of the Clean Water Act, killing birds in violation of the Migratory Bird Treaty Act, and giving false statements to investigators.*

212 Available at <https://faolex.fao.org/docs/pdf/sin46890.pdf>

213 See also the section on document fraud in UNODC, *Guide on Legislative Responses to Pollution Crime* (forthcoming).

214 See A. J. Kuffler, 'Prosecution of Maritime Environmental Crimes versus OPA-90's Priority for Response and Spill Prevention: A Collision Avoidance Proposal' (2001) 75 Tul L Rev 1623, 1626-27 (footnotes omitted).

2. *On December 10, 1999, three employees of the company operating the S.S. ROTTERDAM pleaded guilty under the Clean Water Act to charges that they negligently discharged oily bilge water in Alaska. The employees included the company's director of technical operations, who was aware that the vessel's oily water separator did not work but had failed to order repairs. Those guilty pleas followed a guilty plea by the operating company to charges that it had violated the Act to Prevent Pollution from Ships and failed to keep records of the discharge.*

3. *On December 19, 2000, the owner and operator of the NEPTUNE DORADO pleaded guilty to charges under the Ports and Waterways Safety Act for willfully and knowingly failing to report hazardous conditions to the Coast Guard. The master had previously pleaded guilty to the same charges, while the former master pleaded guilty to operating and aiding and abetting the operation of a vessel in a grossly negligent manner.*

4. *In March 2019, the U.S. Coast Guard inspected the M/ T Evridiki as it delivered a shipment of crude oil while anchored in Delaware Bay. Examination revealed that Chief Engineer Vastardis used a hidden valve to trap fresh water inside the sample line so that the OCM sensor registered zero parts per million concentration of oil instead of what the crew actually discharged overboard. When the Coast Guard opened the OWS, they found it inoperable and fouled with copious amounts of oil and soot. Forensic examination of the ship's computers revealed that the ship manager (Liquimar) made and used fake and forged certificates regarding safety and environmental requirements. Senior shore-side employees, including the Designated Person Ashore, emailed the falsified documents and seals to the ship. At least three senior Liquimar employees participated in the scheme. On May 4, 2022, those responsible were sentenced to a $3 million fine (Evridiki will pay $2 million and Liquimar will pay $1 million) and five years' probation. The chief engineer was separately prosecuted and received a $7,500 fine and a three-year term of probation.*

5. *On March 13, 2021 Gannet Bulker anchored near the Southwest Passage off the Louisiana coast and conducted repairs. The chief engineer and a subordinate dumped approximately 10.000 gallons of oil-contaminated bilge water overboard the oil-contaminated water overboard. They did not use the oily water separator or the oil content monitor and failed to record the discharge in the oil record book (ORB). A crew member used social media to report the illegal conduct to the US Coast Guard, the chief engineer took several steps to obstruct the US Coast Guards' investigation into the illegal discharge, including: (1) making false statements concealing the fact that the engine room was loaded and that he illegally discharged oily waste overboard; (2) destroying the computer alarm printouts generated while discharging; (3) directing subordinate crew members to make false statements to the US Coast Guard; (4) failing to record the discharges in the ORB; (5) directing subordinate engine room employees to delete all evidence from their cell phones in anticipation of the Coast Guard inspection; and (6) preparing a retaliatory document accusing the whistleblower of poor performance as part of an effort to discredit him. On May 18, 2022, the chief engineer pleaded guilty and was sentenced to a year and a day of incarceration, followed by six months' supervised release. (as well as a $5,000 fine and 300 hours of community service)*

6. *In a routine port state control exam in July 2018 in St. Croix, USVI, the M/V Ocean Princess was discovered to be using high-sulphur diesel fuel as it transited through and operated within the U.S. Caribbean Emission Control Area (ECA), in violation of MARPOL*

Annex VI and related Environmental Protection Agency regulations. These violations had been occurring since January 2016. The chief mate instructed lower-level crew members to lie to the inspectors about where the ship took on its fuel. The master would email Ionian Management Inc and request authorisation to transfer high-sulphur diesel cargo to be used as fuel. After Ionian authorised the transfer, the chief mate and chief engineer carried out the transfer. The chief mate falsified the ORB Part II by failing to log that cargo had been transferred to the engine room; the chief engineer falsified the ORB Part I by indicating that the bunkers had actually been loaded from a shore-side facility in St. Martin, French West Indies (F.W.I.). The chief engineer created fictitious Bunker Delivery Notes indicating the bunkers had originated in St. Martin. F.W.I. and would have it countersigned by an employee of a fuel depot in St. Martin. F.W.I. The court had previously sentenced Ionian Shipping & Trading Corp (Ionian ST) and Lily Shipping Ltd. (Lily) to each pay $1.5 million and complete four-year terms of probation as well as to implement environmental compliance plans. In this case, the vessel commercial manager has been convicted of violating the Act to Prevent Pollution from Ships (APPS) (33 U.S.C. § 1908(a)). He was sentenced to a fine of $250,00 and one probation

In conclusion, there is room to contend that many pollution crimes in the marine environment, especially those that cause serious damage to human life and/or the marine environment, would be considered as serious criminal offences, which, if the other requisite conditions are met, could trigger the application of the Organised Crime Convention. Other instances of serious marine pollution could be prosecuted under national criminal law either for environmental offences (punishable by less severe sanctions), specifically in cases of simple negligence, or for 'secondary' offences, like falsifying of record books or statements to the State's authorities.

Liability of Physical and Legal Persons in cases of Pollution Crimes in the Marine Environment and Relevant Exceptions

a) Operation of Vessel: An Introduction to the Shipping Structure in relation to Marine Pollution Incidents

The vessel's operation is being carried out by the ship management company based on a ship management contract signed between the registered owner and the ship management company. The ship management company usually has the same shareholding interests with the registered owner, but it can also manage third party ships where there is no ship-owning interest. The ship management company is responsible for the vessel's maintenance, operation, and crewing but also for the vessel's safety and security via the ISM code. Accordingly, there is the operations deputy (dept), the crew dept., the technical dept., the legal dept., the vetting dept., and the safety and security dept. nested within the ship management company.

The International Safety Management (ISM) Code[215] requires that each vessel has a DPA (Designated Person Ashore) to ensure on a daily basis that the vessel is adhering to the ISM Code and all maritime conventions on ship safety and security. In practice, each company has safety procedures which have been provided on board the vessel and are being monitored by way of correspondence between the crew and the office, as well as by various inspections carried out on board. The vessel has regular, daily contact with the office and the DPA. The latter's name appears

215 See further information at < https://www.imo.org/en/ourwork/humanelement/pages/ISMCode.aspx#:~:text=The%20purpose%20

on official documents and can be considered the person responsible as to whether the vessel abides by the ISM and all other company's policies.

In a marine pollution incident, it depends on the national law of the coastal State concerned as to which person is held responsible. Practically, in most jurisdictions the master, but also other high ranked crew members, such as the chief officer and the chief engineer, would be held personally responsible and criminally liable for a marine pollution incident, especially if the relevant infringements have been committed by willful misconduct. It goes without saying that all depends on the respective evidence.

The port State control (PSC) inspector would usually carry out inspections at port and would check the ship physically as well as the ship's documents, including deck logs and engine logs. The inspector would also check whether the crew is familiar with safety drills and abides by the company's policies. Thus, the PSC inspector (for example in the USA it's the US Coast Guard) is able to find out whether the ship was in breach of the ISM code by, for example, bypassing the oil water separator. The act of pollution might have taken place on the high seas, but the forging of the oil record book by way of wrong entries by the chief engineer takes place in that State's jurisdiction.

Besides the master, the criminal liability for a pollution incident can be extended to a physical person in the ship management company. Such a person could be the DPA, but the local authorities must find irrefutable evidence that either the DPA or a person from the company's technical or operations dept. instructed the vessel to commit the relevant criminal activity.

Otherwise, the authorities will have to prove that the ship management company is negligent ('gross negligence') in ensuring that the vessel is adhering to the required procedures. All companies have very detailed procedures so that ostensibly - even if an incident happens - the ship management company will be able to present documents according to which it had abided by the relevant laws and regulations, and the incident resulted from an accident or without their knowledge. From the ship management company's viewpoint, their responsibilities have thus been satisfied.

It is true that there could be national legislation providing for the strict liability of the ship management company, which might then be fined by the local court or by the harbour master for breach of international and local regulations. However, cases where criminal liability of a physical person in the office (e.g. the DPA) has been found for the actions of the crew are rare.

To establish such liability, the authorities must provide evidence, for example, an email from the DPA to the master, instructing the crew to bypass the oil water separator or indeed to commit a specific breach. Notably, the PSC officer does not have access to such correspondence.

Even if there has been conspiracy between the office/shore personnel and the vessel - highly unlikely today with various regulations and procedures in place - these persons would have communicated actions by applications and telecoms, which makes the collection of evidence a difficult task. In such incidents, it is more usual that the conspiracy would be between the crew members on board, with the office personnel having no clue about the events on board the vessel. It is for this reason that regular inspections take place on board on a precautionary basis, some of which are not even notified to the crew members so that they do not have the time to hide the equipment or to correct documents etc.

b) Master and Other Crew Members

In light of the foregoing, the master of the vessel is the physical person that would readily be considered as responsible and, for present

of%20the%20ISM,ships%20and%20 for%20 pollution%20prevention.>

purposes, criminally liable, in cases of marine pollution. As stated above, there has been case law in support of that person's strict liability in infringements of applicable law (see French Azura case above).

Similarly, other persons onboard, like the chief engineer or the chief officer, could be held criminally liable, especially for document falsification.

This notwithstanding, the master, the other members of the crew or the owner to this effect, may invoke certain exceptions, as laid down by the MARPOL Convention and its Annexes, excluding liability.

For example:

MARPOL

Annex I

Regulation 4

Regulations 15 and 34 of this Annex shall not apply to:

1. *the discharge into the sea of oil or oily mixture necessary for the purpose of securing the safety of a ship or saving life at sea; or*
2. *the discharge into the sea of oil or oily mixture resulting from damage to a ship or its equipment:*

2.1 provided that all reasonable precautions have been taken after the occurrence of the damage or discovery of the discharge for the purpose of preventing or minimising the discharge; and

2.2 except if the owner or the master acted either with intent to cause damage, or recklessly and with knowledge that damage would probably result; or

2.3 the discharge into the sea of substances containing oil, approved by the Administration, when being used for the purpose of combating specific pollution incidents in order to minimise the damage from pollution. Any such discharge shall be subject to the approval of any Government in whose jurisdiction it is contemplated the discharge will occur.

c) Ship Operator And Legal Persons' Liability

As explained above, the ship operator, in particular the DPA, would rarely be found criminally liable for marine pollution incidents. Interestingly, some national legislation provides that either the master or the agent of the ship shall be prosecuted,[216] which seems not to correspond to the reality of marine pollution incidents.

Noteworthy in this regard is the principle of the 'unity of the vessel' under international law of the sea. As ITLOS held in the M/V Norstar case, under the Convention (UNCLOS), a ship is to be considered a unit "as regards the obligations of the flag State with respect to the ship and the right of a flag State to seek reparation for loss or damage caused to the ship by acts of other States", so that "[t]hus the ship, everything on it, and every person involved or interested in its operations are treated as an entity linked to the flag State".[217]

This pronouncement of the Tribunal concerned the claim of the coastal State that the application of the flag State was inadmissible due to the lack of the exhaustion of legal remedies. What is significant for the purposes of the present enquiry is that the

216 For example, under the Part VIII of the Sri Lankan Marine Pollution Prevention Act, No. 35 of 2008, it is *either the master or the agent* of the ship that should be prosecuted; see at https://faolex.fao.org/docs/pdf/srl161921.pdf. This led to legal complexities in the pending *X-Press Pearl case*, as both the master and the agent were charged, but this was the most important preliminary objection. Ultimately, their preliminary objection was rejected, but this underscores the importance of establishing clarity within domestic legislations to avoid such uncertainties.

217 M/V 'Norstar' (Panama v. Italy), Preliminary Objections, Judgment, ITLOS Reports 2016, p. 44. See also M/V 'SAIGA' (No. 2) (Saint Vincent and the Grenadines v. Guinea), Judgment, ITLOS Reports 1999, p. 10, at p. 48, para. 106; M/V 'Virginia G' Case (Panama/Guinea-Bissau), Judgment, ITLOS Reports 2014, p. 4, at p. 48, para. 126.

Tribunal considered the vessel as a whole, including the people on board and its activities, as linked with the flag State and its respective obligations. This, by necessary implication, means that in order to discharge its duties the flag State would have, amongst others, to legislate accordingly, and thus, effectively, assert its jurisdiction not only over the vessel itself but also over "everything on it, and every person involved or interested in its [the vessel's] operations".[218]

In terms of criminal jurisdiction this entails that the flag State may extend its criminal jurisdiction to any person, regardless of its nationality, on board its vessels and any other person being involved in the related criminal offence - here a marine pollution crime (e.g. subject to each State's legislation, to persons having committed secondary or even inchoate offences, namely, attempt, solicitation, or conspiracy, or those being accessories, namely having aided, contributed to, or concealed the crime concerned).

Coastal States whose marine environment is affected by marine pollution may also enact similar legislation providing for the criminal liability of the legal persons along with that of the physical persons involved therein, like the master of the vessel. Suffice it to note the EU Directive on ship-source pollution:

EU

Directive 2009/123/EC of the European Parliament and of the Council of 21 October 2009 amending Directive 2005/35/EC on ship-source pollution and on the introduction of penalties for infringements

Article 8b

Liability of legal persons

1. Each Member State shall take the necessary measures to ensure that legal persons can be held liable for the criminal offences referred to in Article 5a(1) and (3) and Article 5b, committed for their benefit by any natural person acting either individually or as part of an organ of the legal person, and who has a leading position within the structure of the legal person, based on:

a power of representation of the legal person;

authority to take decisions on behalf of the legal person; or

authority to exercise control within the legal person.

2. Each Member State shall also ensure that a legal person can be held liable where lack of supervision or control by a natural person referred to in paragraph 1 has made the commission of a criminal offence referred to in Article 5a(1) and (3) and Article 5b possible for the benefit of that legal person by a natural person under its authority.

3. The liability of a legal person under paragraphs 1 and 2 shall not exclude criminal proceedings against natural persons involved as perpetrators, inciters or accessories in the criminal offences referred to in Article 5a(1) and (3) and Article 5b.

Article 8c

Penalties against legal persons

Each Member State shall take the necessary measures to ensure that a legal person held liable pursuant to Article 8b is punishable by effective, proportionate and dissuasive penalties.

218 Ibid.

Secondary and Inchoate Offences

Besides disobedience of port State authorities in the case of the Prestige (see above), there could be other secondary offences that could find application in the context of the present enquiry. Article 5(1)(b) of the Organised Crime Convention requires States Parties to establish liability for persons who organise or direct serious crimes involving an organised criminal group, as well as those who aid, abet, facilitate, or counsel such crimes.[219] This provision enables the prosecution of leaders, organisers, and accomplices, as well as persons involved in pollution offending at lower levels. States may consider attaching more serious penalties to those who organise or direct such offending, given their greater degree of culpability. Such legislation could be applicable in the case of marine pollution crimes.

219 See also the model provision on secondary liability in UNODC: *Guide on Legislative Responses to Pollution Crime* (forthcoming).

IV.

INTERNATIONAL COOPERATION AMONG STATES FOR THE SUPPRESSION OF POLLUTION CRIMES IN THE MARINE ENVIRONMENT

UNCLOS provides for international cooperation between States on a global basis and, as appropriate, on a regional basis, directly or through competent international organisations, in formulating and elaborating international rules, standards and recommended practices and procedures consistent with this Convention, for the protection and preservation of the marine environment, as per Article 197 of UNCLOS.

Specifically, regarding enforcement jurisdiction, close coordination between flag and coastal States is required, as the provisions of Part XII of UNCLOS aim to reduce the possibility of a conflict of jurisdictions based on such cooperation. Multiple jurisdictions are involved in almost all incidents of ship-source pollution in the maritime environment unless three conditions are met: the criminal offender is a national of the prosecuting state, the discharge occurred within the coastal zones of that state and the vessel is currently in the port of that state.

Enforcing measures against foreign ships may result in conflicts of jurisdiction. The primary aim of UNCLOS is to restrict the right of non-flag States to undertake enforcement measures against foreign ships. In this respect, as stated above, Article 228 of UNCLOS, for example, delineates the right of the flag State to take over the proceedings for pollution crimes committed beyond territorial sea.[220] Also, under Article 231 of UNCLOS, there is an obligation of prompt notification of the flag State after any initiation of proceedings against a foreign vessel by port State authorities.[221] Further, under Article 220 (4) of UNCLOS, flag States are required to enact laws and regulations and take other measures so that vessels flying their flag comply with requests of the coastal state for information in cases of pollution within its maritime zones by a foreign ship.[222]

Besides UNCLOS, the Organised Crime Convention, to the extent that is applicable to a marine pollution crime, provides for various mechanisms of inter-state cooperation, including extradition[223] and mutual legal assistance.[224] Needless to say, all other bilateral or multilateral extradition or mutual legal assistance treaties applicable between flag and coastal States could be of relevance here. Similarly, other police cooperation and subsequent tools for the exchange of confidential police information in real time could provide practical support for the work of the law enforcement agencies in this regard.

220 See Article 228 of UNCLOS (n 5).
221 See Article 231, ibid.
222 See Article 220 (4), ibid.
223 See Article 16 of the Organised Crime Convention (n 21).
224 See Article 18, ibid.

V.

PRETRIAL DETENTION OF CREW MEMBERS, AS WELL AS SENTENCING ELEMENTS IN LINE WITH UNCLOS

Pre-Trial Detention and Prompt Release Procedures

Detention of crew members of foreign flagged vessels may be considered as appropriate to safeguard the interests of the State in ensuring the enforcement of its criminal law and the punishment of the pollution crimes in the marine environment. However, such pretrial detention must be in accordance with the right to liberty and security,[225] as enshrined in international and regional human rights treaties and relevant national Constitutions and other laws.

INTERNATIONAL COVENANT OF CIVIL AND POLITICAL RIGHTS (1966)

Article 9

1. Everyone has the right to liberty and security of person. No one shall be subjected to arbitrary arrest or detention. No one shall be deprived of his liberty except on such grounds and in accordance with such procedure as are established by law.

2. Anyone who is arrested shall be informed, at the time of arrest, of the reasons for his arrest and shall be promptly informed of any charges against him.

3. Anyone arrested or detained on a criminal charge shall be brought promptly before a judge or other officer authorised by law to exercise judicial power and shall be entitled to trial within a reasonable time or to release. It shall not be the general rule that persons awaiting trial shall be detained in custody, but release may be subject to guarantees to appear for trial, at any other stage of the judicial proceedings, and should occasion arise, for execution of the judgement.

4. Anyone who is deprived of his liberty by arrest or detention shall be entitled to take proceedings before a court, in order that that court may decide without delay on the lawfulness of his detention and order his release if the detention is not lawful.

5. Anyone who has been the victim of unlawful arrest or detention shall have an enforceable right to compensation

In view of this, therefore, strict requirements should be observed for the pre-trial detention to be applied. Apart from pre-trial detention, there are other measures available to ensure that the defendants do not flee justice. These include the seizure of travel documents, the condition to appear before enforcement officials or the court at regular intervals, and posting of financial bond.

Article 226 of UNCLOS provides that States, either coastal or port, shall not delay a foreign vessel "longer than is essential for the purposes of the investigations provided for in Articles 216, 218 and 220". This principle should be reflected in domestic procedural rules, which should not provide for excessive pretrial detentions and other non-proportional limitations on accused individuals' freedom.

Inexorably linked to the question of pre-trial detention is that of prompt release. Under Article 220 (7) of UNCLOS the ship detained should be released with assurance of appropriate financial security. This provision should be read together with Article 226 (1) of UNCLOS according to which:

"(b) If the investigation indicates a violation of applicable laws and regulations or international rules and standards for the protection and preservation of the marine environment, release

225 The right to liberty and security, which is of primary importance in a 'democratic society', enshrines a fundamental human right, namely the protection of the individual against arbitrary interference by the State with his or her right to liberty. Its purpose is to protect against any arbitrary deprivation of that liberty in its classic sense of imprisonment. According to the General Conclusion No 35 on the Right of Liberty and Security of the ICCPR Human Rights Committee, "deprivation of liberty includes: police custody, house arrest, remand detention, imprisonment after conviction, house arrest, administrative detention, involuntary hospitalisation, institutional custody of children and confinement to a restricted area of an airport, as well as being involuntarily transported".

shall be made promptly subject to reasonable procedures such as bonding or other appropriate financial security.

(c) Without prejudice to applicable international rules and standards relating to the seaworthiness of vessels, the release of a vessel may, whenever it would present an unreasonable threat of damage to the marine environment, be refused, or made conditional upon proceeding to the nearest appropriate repair yard. Where release has been refused or made conditional, the flag State of the vessel must be promptly notified and may seek release of the vessel in accordance with Part XV".[226]

Through the safeguards included in Article 226, the Convention seeks to establish a balance between the right of coastal States to enforce its laws and regulations and that of flag States to obtain prompt release of its vessels. Article 226 (1)(b) does not require the presentation of a bond or financial security for a flag State to be able to request the prompt release of a vessel or for the coastal State to release it. This provision merely indicates bonding or other appropriate financial security as reasonable procedures, alongside others that the relevant States may consider suitable. As rightly noted, "it would be difficult to argue that a ship that constitutes an unreasonable threat to the marine environment could be released merely upon the posting of a bond or appropriate financial security. The detaining State may, however, release the ship based on the guarantee by the flag State that the ship will be demolished, decommissioned, or repaired".[227]

Under Article 226 (1)(c) of UNCLOS, the detaining State shall promptly notify the respective flag State and submit all official reports.[228] Release may be refused or made conditional upon the ship proceeding to the nearest appropriate repair yard,[229] in which case the respective flag State shall be promptly notified.

Should the detaining State refuse to release the ship after receiving financial security, pursuant to Article 226 (1)(c) the flag State may request prompt release, in accordance with Article 292 of UNCLOS. To date, however, no submission for prompt release has ever been made to ITLOS or other competent courts or tribunals, in contrast to cases of fisheries violations in the EEZ pursuant to Article 73 of UNCLOS. Indeed, there are a host of prompt release applications brought before the ITLOS related to the arrest of foreign fishing vessels in the EEZ.[230] These cases could provide useful insights should there be a case with a prompt release application under Articles 220 (7), 226, and 292 of UNCLOS.

In any event, the procedures concerning prompt release under national law would be of direct relevance to pretrial detention since the vessel would be released with the crew.

Sentencing Elements in Line with UNCLOS

The criminal penalties that are to be imposed in relation to pollution crimes in the marine environment is a matter that concerns each State individually. In the previous Chapters, there was long discussion as to when the crimes at hand could amount to 'serious crimes' as per the Organised Crime Convention, and various examples of national laws providing for imprisonment sentences more than 4 years were introduced.

226 Article 226 (1) of UNCLOS (n 5).

227 Becker-Weiberg, 'Article 226', in Proelss Commentary (n 54). 1541.

228 Article 231 of UNCLOS (n 5).

229 Art. 5 (2) MARPOL 73/78, Reg. 6.3.3 Annex I MARPOL 73/78, Reg. 8.2.5 Annex II MARPOL 73/78, Reg. 4.5 Annex IV MARPOL 73/78; Regs. 6 (c) and 19 (c), Ch. I SOLAS 1974; Art. 21 (1) EC Directive on PSC; Sect. 3.8 Paris MoU; Sect. 3.8.1 Abuja MoU; Sect. 3.8.1 Indian Ocean MoU; Sect. 3.8.1 Black Sea MoU; Sect. 3.8.1 Mediterranean MoU; Sect. 3.8 Asia Pacific MoU; Sect. 3.17 Riyadh MoU.

230 See the docket of the ITLOS here: <https://www.itlos.org/en/main/cases/list-of-cases/>. See also M.l White, Prompt Release Cases in ITLOS, in: Tafsir Malick Ndiaye/Rudiger Wolfrum (ed.), *Law of the Sea, Environmental Law and Settlement of Disputes: Liber Amicorum Judge Thomas A. Mensah* (2007), 1025–1052.

The question of interest is whether such penalties are in accordance with international law, particularly UNCLOS. In this regard, as has been already observed, under Article 230 of UNCLOS:

"1. Monetary penalties only may be imposed with respect to violations of national laws and regulations or applicable international rules and standards for the prevention, reduction, and control of pollution of the marine environment, committed by foreign vessels beyond the territorial sea. 2. Monetary penalties only may be imposed with respect to violations of national laws and regulations or applicable international rules and standards for the prevention, reduction, and control of pollution of the marine environment, committed by foreign vessels in the territorial sea, except in the case of a willful and serious act of pollution in the territorial sea".[231]

This is the only provision of UNCLOS that alludes to criminal penalties for present purposes, since generally UNCLOS does not explicitly address the criminal jurisdiction of States in cases of pollution of the marine environment. This article reflects the general restrictive approach of UNCLOS towards criminalisation of pollution from foreign ships. Notably, on its face, Article 230 of UNCLOS limits non-monetary penalties only to cases of willful and serious pollution committed by foreign vessels within the territorial sea. However, as Article 230 of UNCLOS refers to foreign vessels, it does not explicitly impose restrictions on flag States' jurisdiction regarding the criminalisation of ship-source pollution caused by their own vessels. Also, the use of the term 'may only' in Article 230 (1) does not denote a blanket prohibition of the possibility of the imposition of non-monetary penalties (including imprisonment) even beyond the territorial sea.

Further, the relevance of this provision is questioned specifically in the light of the various national legislations that impose non-monetary penalties for either marine pollution crimes committed beyond the territorial sea - for example, in the EEZ - or for marine pollution which might not satisfy the requirement of 'willfulness'.

Indeed, it seems that the subsequent practice of States, i.e., one of the treaty interpretation canons under the 1969 Vienna Convention on the Law of the Treaties (Article 31 (3) (b)), warrants the assertion that States are not considering themselves as strictly bound by that provision. Nevertheless, one should not lightly contend that Article 230 has fallen in disuse or desuetude, specifically in the absence of any international judicial decision to this end.

231 Article 230 UNCLOS (n 5). See also A. Bernhardt, A Schematic Analysis of Vessel-Source Pollution: Perspective and Enforcement Regimes in the Law of the Sea Conference (1980) 20 *Virginia Journal of International Law* (1980), 265–311.

VI.

INCLUDING THE USE OF MARITIME DOMAIN AWARENESS (MDA) AS DIGITAL EVIDENCE IN RELATION TO POLLUTIONS CRIMES IN THE MARINE ENVIRONMENT

Investigation of Vessels

The preventive as well as deterring aspect of criminal law could not be accomplished without enforcement of the administrative and criminal laws. It is critical that a State establish an effective regime for investigating marine pollution offences to be effective in achieving its goals. This includes empowering investigative officers with the powers necessary to carry out their functions in combating marine pollution crime. Officers involved in investigating marine pollution crime and related offences may include coast guard officers, port authority officers, military personnel, officers of financial intelligence units, and multi-agency task forces. The appropriate powers for each such officer will differ depending on the State's domestic legislation. In accordance with Article 224 of UNCLOS the powers of enforcement against foreign vessels for the protection and preservation of the marine environment may only be exercised by officials or platforms clearly marked and identifiable as being on government service and authorised to that effect.

UNCLOS provides for further specific safeguards regarding investigative methods. In exercising their enforcement powers States should not endanger the safety of navigation or otherwise create any hazard to a vessel, or bring it to an unsafe port or anchorage, or expose the marine environment to an unreasonable risk, as per Article 225 of UNCLOS. ITLOS has elaborated further on the modus operandi of law enforcement at sea, focusing also on the protection of human life during constabulary operations. The Tribunal ruled against the excessive and unnecessary use of force stating inter alia that "the use of force should be avoided as far as possible and, where... unavoidable, it must not go beyond what is reasonable and necessary in the circumstances.... It is only after the appropriate actions fail that the pursuing may, as a last resort, use force... Even then... All efforts should be made to ensure that life is not endangered." [232]

Also of relevance is Article 226 (1) of UNCLOS, setting out that "any physical inspection of a foreign vessel shall be limited to an examination of such certificates, records or other documents as the vessel is required to carry by generally accepted international rules and standards or of any similar documents which it is carrying; further physical inspection of the vessel may be undertaken only after such an examination and only when: (i) there are clear grounds for believing that the condition of the vessel or its equipment does not correspond substantially with the particulars of those documents; (ii) the contents of such documents are not sufficient to confirm or verify a suspected violation; or (iii) the vessel is not carrying valid certificates and records."

It must be also added that the subsequent seizure and confiscation of vessels should be in line with Article 226 of UNCLOS setting out guarantees for the prompt release of the vessels and with applicable national legislation.

Maritime Domain Awareness and Satellite Evidence

Understandable that the investigation of a single ship does not shed a comprehensive light on the issue. It should be noted that the high threshold of suspicion established by Article 220 of UNCLOS, regarding enforcement by coastal States ("clear grounds for believing" and "clear and objective evidence"), could not be achieved without Maritime Domain Awareness (MDA). MDA means the effective understanding of anything associated with the maritime domain that could impact security, safety, the economy, or the marine environment. MDA could be used for the monitoring or recording of activities,

232 See M/V 'SAIGA' (No. 2) (n 190), paras. 155 and 156.

including by the use of earth observation tools, such as satellites, for the purposes of investigating an offence.

The complex, near chaotic nature of the maritime domain and the culture of secrecy that permeates activities at sea, necessitate the ability to observe, comprehend and share information in order to complete the maritime picture. The latter tasks are multi-agency and interstate functions requiring observation of activities at sea, fusion and analysis of the information, and dissemination across several governmental agencies. Traditional human intelligence is always critical in this process but, undoubtedly, modern earth observation tools, such as the Automatic Identification Systems (AIS)[233], Long-Range Identification Tracking (LRIT),[234] Vessel Monitoring Systems (VMS),[235] and satellite observation through Synthetic Aperture Radar (SAR)[236], are of great importance to detect pollutants, and to ensure these technologies produce evidence that is admissible in court.

For example, the EU has established CleanSeaNet, which is a European satellite-based oil spill and vessel detection service which offers assistance to participating States for the following activities: identifying and tracing oil pollution on the sea surface; monitoring accidental pollution during emergencies; and contributing to the identification of polluters. Per the European Maritime Safety Agency (EMSA), "The CleanSeaNet service is based on the regular ordering of SAR) satellite images, providing night and day worldwide coverage of maritime areas independent of fog and cloud cover. Data from these satellites is processed into images and analysed for oil spill, vessel detection and meteorological variables. The information retrieved includes among others: spill location, spill area and length, confidence level of the detection and supporting information on the potential source of the spill (i.e., detection of vessels and oil and gas installations). Optical satellite images can also be acquired upon request, depending on the situation and user's needs." [237]

Also, again in the European context, reference should be made to the Bonn Agreement, by which ten States, together with the European Union, cooperate in dealing with the pollution of the North Sea by oil and other harmful substances. Most countries operate routine counter pollution flights focused on pollution from shipping and enforcement of the MARPOL Convention, which designates the North Sea as a special area in which the adoption of special mandatory methods for the prevention of sea pollution by oil is required. Some countries however, have adopted the use of satellite images, provided by EMSA, to provide a first alert for oil pollution rather than routine patrolling.[238]

No matter how useful such earth observation tools are, there is a need for them to be coupled with traditional surveillance equipment, such as sea patrols. A striking example of the collaboration of traditional surveillance equipment, such as

233 Automatic identification systems (AIS) are designed to be capable of providing information, including the ship's identity, type, position, course, speed, navigational status and other safety-related information, automatically to appropriately equipped shore stations, other ships and aircraft. Under Chapter V of the IMO Convention on Safety of Life at Sea, as amended in 2001 and effective for all ships since 31 December 2004, AIS shall be fitted aboard all ships of 300 gross tonnage and upwards engaged on international voyages, cargo ships of 500 gross tonnage and upwards not engaged on international voyages and all passenger ships irrespective of size; see further information at <http://www.imo.org/en/OurWork/Safety/Navigation/Pages/AIS.aspx>.

234 Allen, *Maritime Counterproliferation Operations and the Rule of Law* (Praeger Security International, Westport, 2007), 82–83.

235 A Vessel Monitoring System (VMS) is a 'cooperative system' in which each participating vessel must carry a piece of hardware, commonly known as an Automatic Location Communicator (ALC) or Mobile Transceiver Unit (MTU), which transmits the position of the vessel to communications satellites. This information is then relayed to land earth stations and transmitted by internet connection to a fisheries monitoring centre in a coastal State (or an RFMO). See on VMS FAO, Report of the Expert Consultation on the Use of Vessel Monitoring Systems and Satellites for Fisheries Monitoring, Control and Surveillance (Rome, 24-26 October 2006), FAO Fisheries Report No. 815 (FIEL/R815); available at < http://www.fao.org/3/a-a0959e.pdf>.

236 Synthetic Aperture Radar (SAR) is a form of radar providing high-resolution imagery. SAR complements photographic and other optical imaging capabilities because it is not limited by the time of day or atmospheric conditions; see at <https://www.sandia.gov/radar/what_is_sar/>. See also G. Rowland et al, supra note, p. 40 and the references therein.

237 See at <https://www.emsa.europa.eu/csn-menu.html>

238 See further information at <https://www.bonnagreement.org/activities/aerial-surveillance>

aerial surveillance and sea patrols, with innovative technologies including satellite imagery, drones, vessel tracking systems, as well as a variety of advanced IT and forensic equipment, was the EUROPOL Operation 30 Days at Sea in the so-called Euro-Mediterranean region. As reported by Interpol, "INTERPOL and its Pollution Crime Working Group (PCWG) coordinated Operation 30 Days at Sea in October 2018, in cooperation with Europol in the European region. It was the first global operation ever led to focus a law enforcement response to marine pollution, with the participation of 276 law enforcement and environmental protection agencies from 58 countries worldwide. As a result of 15,446 inspections conducted during the Operation, 1507 marine pollution related offences committed on land, in internal waters or at sea were detected, 202 vessels and 76 companies were reported to INTERPOL, and 701 investigations were initiated with subsequent fines and prosecutions in numerous cases."[239]

239 Operation 30 Days at Sea (2018), Interpol Final Operational Report (24 June 2019); 2019/405/OEC/ILM/ENS/BNI, Executive Summary.

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