EFFECTIVENESS OF INTERNATIONAL INSTRUMENTS OF LIABILITY AND COMPENSATION FOR VESSEL-SOURCED POLLUTION: CASE STUDY OF THE SOUTHERN OCEAN

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Good international environmental governance in marine pollution matters largely rests with effective instruments of liability and compensation for trans-boundary environmental damage. This paper examines concepts and legal instruments in global and regional international law for providing prompt, adequate and effective compensation for harm to the marine environment itself, on the example of the Southern Ocean.

Key words: international law of marine pollution, vessel-sourced pollution, liability and compensation for pure environmental damage, effectiveness of international instruments, Southern Ocean.

INTRODUCTION

The last century saw the fall of the vision of the oceans as an inexhaustible reservoir of resources to be plundered and polluted by humankind at will. Ever since the tanker *Torrey Canyon* ran aground on Pollard Rock on the Seven Stone Reef in Cornwall on 18 March 1967, the international community has struggled

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with many legal, political and human dimensions of vessel-sourced pollution incidents. Despite the extensive international legal responses to this ecological challenge the catastrophic proportions of the 2002 *Prestige* and 1999 *Erica* tanker spills highlight the ineffectiveness of the present approach in combating vessel-sourced pollution.[1] While 'an ounce of prevention' is still worth 'a pound of cure,' this paper argues that good international environmental governance in marine pollution matters largely rests with effective international instruments of liability and compensation for transboundary environmental damage.

International liability and compensation regimes related to vessel-sourced pollution emerged as a reaction to the unwillingness and incapability of flag States to institute elaborate domestic regimes for remedying of transboundary pollution damage, as well as in order to harmonise various municipal legal systems. Namely, legal rules on liability and redress are commonly developed on a domestic level, however, the problem of the inadequacy of such domestic regimes is particularly evident in the sphere of marine pollution given that almost 50 percent of the world maritime fleet is registered with the 'flags of convenience' (FOC) countries,[2] that offer 'relaxed' environmental regulation, and a more lenient system of fines and sanctions. In response to this, international instruments of liability and compensation were established either in the form of a separate treaty or a supplementary element to an existing multilateral maritime environmental agreement (MMEA). The first such international instruments that also remain the only operative and successful ones are the 1969 *International Convention on Civil Liability for Oil Pollution Damage* [1969 CLC],[3] and the 1971 *International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage* [1971 Fund Convention].[4] Despite numerous other international agreements having since been

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1 Tanker *Prestige* spilled some 63,000 tons of oil carried as cargo, while *Erica* spilled around 20,000 tons: <www.itopf.com/pastspil.html> 1 August 2005.

2 See the United Nations Conference on Trade and Development (UNCTAD) Secretariat, "2004 Review of Maritime Transport," UNCTAD/RMT/2004, X.

3 973 UNTS 3 (in force 19 June 1975), as amended by the *Protocol of 1992 to Amend the International Convention on Civil Liability for Oil Pollution Damage 1969*, [1996] ATS No 2 (in force 30 May 1996) [hereinafter '1992 Liability Convention'].

4 1110 UNTS 57 (in force 16 October 1978), as amended by the *Protocol of 1992 to Amend the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage 1971*, [1996] ATS No 3 (in force 30 May 1996) ['hereinafter '1992 Fund Convention'].

negotiated,[5] they have not come into force as yet. What is more, Daniel warns that "of the regimes that have been developed and are not in force, there are flaws in those regimes that have been identified."[6]

This paper explores the effectiveness of MMEAs and international environmental regimes (IERs)[7] relating to remedying vessel-sourced pollution harm. The primary measurement of effectiveness is taken to be the ability of the relevant international instruments to provide prompt, adequate and effective relief for damage resultant from marine pollution. Other subsidiary parameters of effectiveness employed in this discussion include the success of the relevant international mechanisms in deterrence, and the extent of compliance therewith. Furthermore, this paper accentuates the need for effective remedies concerning pure marine environmental damage, in particular when vessel-sourced pollution affects the high seas marine environment. Unlike damage to persons or property pursuant to pollution, damage to the environment itself, so-called pure environmental damage, is overlooked in environmental liability regimes domestically as well as internationally. None of the MMEAs negotiated or in force enable compensation for the costs of clean up, and restoration of pure environmental damage inflicted to the high seas. As a result, vessels polluting the high seas marine environment are not subject to any international fine or penalty.

The Southern Ocean was chosen as the case study for this paper since it is representative of both coastal State maritime zones and the high seas, and the

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5 1962 *Convention on the Liability of Operators of Nuclear Ships* [1962 Nuclear Ships Convention] 57 AJIL 268 (1963) (not in force); 1996 *International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea* [HNS Convention] (1996) 35 ILM 1406 (not in force); 1999 *Basel Protocol on Liability and Compensation for Damage Resulting from Transboundary Movements of Hazardous Wastes and Their Disposal* [Basel Liability Protocol] UNEP/CHW.1//WG.1/9/2 (not in force); 2001 *International Convention on Civil Liability for Bunker Oil Pollution Damage* [Bunkers Convention] IMO document: LEG/CONF 12/19 of 27 March 2001 (not in force).

6 A. Daniel "Civil Liability Regimes as a Complement to Multilateral Environmental Agreements: Sound International Policy or False Comfort" (2003) 12(3) *RECIEL* 225.

7 IERs are instruments of regulation slightly different to MMEAs; S Krasner "Structural Causes and Regime Consequences: Regimes as Intervening Variables" (1982) 36 (2) *International Organisation* 186 defines regimes as "principles, norms, rules and decision-making procedures around which actor expectations converge in a given issue area," hence comprising an institutional element outside the treaty's normative components.

region therefore permits an assessment of the totality of the global international law related to vessel-sourced marine pollution. The Southern Ocean is also subject to a regional regime, the Antarctic Treaty System (ATS), which allows for a study of the interactions between global and regional instruments in remedying environmental harm.

1. VESSEL-SOURCED MARINE POLLUTION

Vessel-sourced pollution is a wide generic term that includes accidental spills and intentional discharges by sea-going vessels. Pollution of the marine environment is most appropriately described in 1982 United *Nations Convention on the Law of the Sea* [UNCLOS][8] as:

> the introduction by man, 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 1973 *International Convention for the Prevention of Pollution from Ships* as amended by the *1978 Protocol* [MARPOL][9] defines vessel-sourced pollution incidents as:

> an event involving the actual or probable discharge into the sea of a harmful substance, or effluents containing such substances.

In principle, vessel-sourced pollution comprises all categories of pollutants originating from all types of vessels engaged in navigation or transportation. This term extends to pollution wherever it may occur affecting the marine environment of whichever section of the oceans and seas. [10]

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[8] 1833 UNTS 3 (in force 16 November 1994), Art. 2(4).

[9] *1973 MARPOL*, (1973) 12 ILM 1319 (not intended to enter into force without the 1978 Protocol); *1978 Protocol*, 1340 UNTS 61 (in force 2 October 1983), Art. 2(6); MARPOL 1973 as amended by the 1978 Protocol hereinafter 'MARPOL'.

[10] The term vessel relates to: a vessel of any type whatsoever operating in the marine environment and including hydrofoil boats, air-cushion vehicles, submersibles, floating craft and fixed or floating platforms: MARPOL, art. 2(4); for more information on various types of ships see K Van Dokkum *Ship Knowledge, A Modern Encyclopaedia* (2004).

Accidental pollution by oil when carried as cargo is still believed to be the most common pollutant originating from ships. According to International Tanker Owners Pollution Federation Limited (ITOPF), the number of oil spills caused by tankers has decreased dramatically since the 1970s when the annual average of spills was 25.2, in comparison to 3.8 spills average in the period between 2000-2004.[11] Despite the decrease in the number of incidents, their severity, however, remains alarming when considering the quantities of oil spilt.[12] Moreover, contrary to general perception, the greatest threat of ecological harm from ships comes from operational discharges, and in particular the illegal discharge of oil through routine operations. The 2003 OECD Report indicates that:

> the illegal discharge of oil into the sea through routine operations is equal to over eight times the Exxon Valdez oil spill or over 48 times the 1997 Nakhodka spill off the coast of Japan - every year.[13]

Aside from oil, seaborne transport of hazardous substances carried in packaged forms, or noxious liquid chemicals carried in bulk, also have the potential for environmental catastrophe. The IMO warns that over 50 percent of goods carried in dry cargo ships, including chemical tankers, are potentially dangerous.[14] Though rare, accidents involving nuclear ships or ships carrying radioactive matter also still occur.[15] In addition, it was only in the past 15 years that the scientific community managed to persuade States and maritime related industries to address the serious detrimental effects of ballast waters released[16] in pristine marine eco-systems, the dumping of sewage and garbage

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[11] Statistics available from ITOPF: <www.itopf.com/stats.html> 1 August 2005.

[12] According to ITOPF only in the past 15 years some 861,700 tons of oil carried as cargo was spilt into the ocean as a result of tanker incidents; see id, table 3.

[13] Maritime Transport Committee (OECD), "Costs saving from Non-Compliance with International Environmental Regulations in the Maritime Sector" (2003) 4: <www.oecd.org/dataoecd/4/26/2496757.pdf > 20 December 2005.

[14] *IMO leaflet on Preventing Marine Pollution* (March 1998): <www. imo.org> 20 July 2005.

[15] Such like accidents include the sinking of the nuclear submarine *K-141 Kursk* in the Barents Sea in 2000, and the 1997 incident involving surface vessel *MSC Carla* carrying packages containing radioactive matter; see the International Atomic Energy Agency (IAEA), "Inventory of accidents and losses at sea involving radioactive material" (2001, Vienna), IAEA - TECDOC - 1242.

[16] 2004 *International Convention for the Control and Management of Ships' Ballast Water and Sediments* [Ballast Water Convention], IMO document(s): Final Act_BWM/CONF/37 (not in force), art. 1(2) defines ballast water as "…water with its suspended matter taken

from ships, and the harmful characteristics of certain substances used as anti--fouling systems for ships hulls.[17] It is also important to note that the dumping of waste at sea[18] and atmospheric pollution[19] fall outside the notion of vessel-sourced pollution and will not therefore be examined here.[20] Pollution by ships must also be distinguished from marine pollution caused by seabed activities and land-based sources. Still, where an incident is such that it was caused by a vessel that was not engaged in the 'activities in the Area' as defined in UNCLOS, in particular that of exploration and exploitation of the seabed and the subsoil, such incidents are taken into account.

2. THE SOUTHERN OCEAN

2.1. Searching for an Ocean

In 2000, the International Hydrographic Organization (IHO) delimited as the world's fifth ocean a vast body of water encircling Antarctica, and linking the Indian, Atlantic and Pacific Oceans - the Southern Ocean.[21] The IHO defines

on board a ship to control trim, list, draught, stability or stresses of the ship"; id, art. 1(11): "[s]ediments means matter settled out of ballast water within a ship."

17 2001 *International Convention on the Control of Harmful Anti-Fouling Systems* [Anti -fouling Convention] IMO Doc. Final Act_AFS/CONF 25 and Resolutions 1,2,3,4 (E/F/S); Convention AFS/CONF/26 (E/F/S) (not in force), art. 2 (2) establishes a set of rules for reducing or eliminating adverse effects on the marine environment caused by "a coating, paint, surface treatment, surface, or device that is used on a ship to control or prevent attachment of unwanted organisms."

18 1972 *Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter* [London Dumping Convention] 1046 UNTS 120 (in force 30 August 1975); *Protocol of 1996 to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter*, (1997) 36 ILM 1 (not in force).

19 MARPOL, *1996 Annex VI - Prevention of Air Pollution from Ships* (in force 19 May 2005); see IMO, *Marine Pollution Conventions*: <www.imo.org/InfoResource/mainframe.asp?topic_id=830> 1 July 2005. No international treaty specifically relates to the prevention of air pollution from ships.

20 See R R Churchill and A V Lowe *The Law of the Sea* (3rd ed, 1999) 379 -392; IMO, *Annex VI of MARPOL 73/78: Regulations for the Prevention of Air Pollution from Ships and NOx Technical Code* (1998, IMO Publication).

21 IHO Special Publication S-23 (2000), chp. 10.

the Southern Ocean as the body of water falling below the 60^0S.[22] It is, however, argued that the Southern Ocean in fact extends beyond 60^0S, as far north as the Antarctic Convergence - a divide between the cold Antarctic waters and the warmer more northerly waters. Therefore, while its 'southern' boundary is taken to be the coast of the Antarctic continent, the outer limits of the Southern Ocean follow the line of the Antarctic Convergence, customarily referred to as "the biographic boundary that separates the Antarctic environment from that of the rest of the world."[23] Given that the Antarctic Convergence is an intrinsically unsettled natural occurrence, the northern boundaries of the Southern Ocean are understood to follow the coordinates of the Antarctic Convergence set in the 1980 *Convention on the Conservation of Antarctic Marine Living Resources* [CCAMLR].

This is however a scientific understanding, and though it may well be the geographically and ecologically correct one, the Southern Ocean is presently administratively and politically divided into two regions:

1. Southern Ocean south of 60^0S (Antarctic region); and
2. Southern Ocean north of 60^0S as far as the Antarctic Convergence (sub--Antarctic region).

The 60^0S, a political boundary, denotes the scope of application of the Antarctic Treaty - the founding agreement of the regional regime for environmental governance of the Southern Ocean - the ATS.[24] Currently, three international legal regimes overlap and interact in the Southern Ocean:

1. Antarctic Treaty System as the regional source of law;
2. General international law; and
3. Domestic laws of the Antarctic and the sub-Antarctic claimant States.

Though the present partition of the Southern Ocean at 60°S cannot be ignored, the inter-dependence of the sub-Antarctic and the Antarctic and their

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[22] Ibid.

[23] Antarctic convergence is in average positioned at 58_S, and south of that boundary "lives the specific Antarctic biota"; see *The World Bank, The World Conservation Union (IUCN), Great Barrier Reef Marine Park Authority A Global Representative System of Marine Protected Areas: Antarctic, Arctic, Mediterranean, Northwest Atlantic, Northeast Atlantic and Baltic* (Vol. 1, 1995) 45- 49.

[24] The term ATS was introduced for the first time in 1973 by Roberto Guyer, an Argentine scholar and diplomat.

ecological homogeneity, call for uniform environmental regulation of the marine area extending as far north as the Antarctic Convergence.

The CCAMLR boundary more closely aligns with the Antarctic ecosystem than other Antarctic agreements, an aspect that is particularly important to conservation considerations.[25]

2.2. The Problem of Vessel-Sourced Pollution

The Southern Ocean has become particularly prone to seaborne pollution in the past 15 years following the boom in the polar tourism industry[26] and the growing number of substandard illegal fishing vessels in the region.[27] A notable number of these fishing and tourism vessels are registered with FOC countries[28] or 'unknown' flag States.[29] On the other hand, the danger from marine spills in the Southern Ocean does not come from their frequency, but from the severity of the potential impact on the polar marine environment.[30] Given the unpredictable weather conditions and the sensitivity of its physical environment, pollution in the Southern Ocean, including by noise originating

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[25] A Global Representative System of Marine Protected Areas, above n 42 at 45.

[26] In the 2004/2005 season 22,297 passengers landed in the Antarctic on commercially organized tour and sailing vessels, excluding sailing vessels and yachts operated by non-IAATO members. This is a 300 percent increase in comparison to the 1992/93 season (6704 passengers); see International Association of Antarctic Tour Operators (IAATO), "Overview of Antarctic Tourism - 2004-2005 Antarctic Season," doc. XXVIII/IP 82 (2005).

[27] The problem of Illegal, Unregulated and Unreported (IUU) fishing is widespread in the Southern Ocean and the Australian Antarctic Division (AAD) approximates that "[t]he total IUU catch of toothfish over the past six years is almost equal to the total catch by legal fishers (80,960 tons and 83,696 tons respectively)": <www.aad.gov.au/default.asp?casid=11981> 12 July 2005.

[28] United Nations Food and Agriculture Organisation (FAO) projects that the number of fishing vessels on open registers continues to increase; see Lloyd's Maritime Information Services 1997 and Lloyd's Register - Fairplay Ltd. "World Fleet Statistics 2001" reproduced in the FAO, "State of World Fisheries and Aquaculture 2002," at FAO: <www.fao.org> 1 January 2005.

[29] See "The Status of the Fishing Fleet in FAO" in FAO, "The State of World Fisheries and Agriculture" (2004, Rome).

[30] COMNAP, "'Worst Case' & 'Less than Worst Case' Environmental Scenarios," doc. XXV ATCM/WP25 (2002) 19.

from ships,[31] could cause greater harmful effects than expected. Detection of environmental damage and the polluters is made difficult by the vastness of this region and the polar conditions that only allow for clean-up and rescue actions during the brief Southern Hemisphere summer season (November - March).

The most serious pollution incident to date occurred in the Southern Ocean in 1989 following the sinking of the Argentinean supply and tourist vessel *Bahia Paraiso* which spilled some 830,000 litres of diesel fuel and lubricants.[32] Many other tourist and fishing vessels have found themselves in distress in the Southern Ocean due to rough seas, pack ice, icebergs or mechanical malfunctioning, but there are records of only a few having released pollutants.[33] Data concerning fishing vessels is particularly questionable given the extent of illegal fishing vessels operating in this region. There was only one reported incident involving pollution from a fishing vessel, the sinking of the longliner *Sudur Havid* in June 1998.[34] However, one must only consider the various categories of material entering the marine environment from fishing vessels to realize the potential harm to marine wildlife that may be caused by them.[35] Tourism and scientific research are the two human activities that are most likely to lead to marine pollution involving ships in this region.

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[31] See Report by Antarctic and Southern Ocean Coalition (ASOC) "Marine Acoustic Technology and the Antarctic Environment": <www.cep.aq/MediaLibrary/asset/MediaItems/ml_377774981018519_IP%20xx%204c%20ASOC%20marine%20acoustics%200522final.doc> 2 July 2005.

[32] P A Penhale, J Coosen, and E R Marschoff "The Bahia Paraiso: A case study in environmental impact, remediation and monitoring" in B Battaglia, J Valencia and D W H Walton (eds.) *Antarctic Communities, Species, Structure and Survival* (1997) 437-444.

[33] Incidents involving sinking vessels south of 60(S: *Gotland II* (1981); *Southern Quest* (1986); *Nella Dan* (1987); *Bahia Paraiso* (1989); see COMNAP Report 2002, above n 30.

[34] K-H Kock "The direct influence of fishing and fishery-related activities on non-target species in the Southern Ocean with particular emphasis on longline fishing and its impact on albatrosses and petrels - a review" (2001) 11 *Reviews in Fish Biology and Fisheries* 31, 34.

[35] Id at 35-38 suggests that such material includes for example: beach litter and floating marine debris; ingestion of and entanglement in plastic material; plastic package bands from bait boxes and fishing nets; the impact of bottom trawling on benthic communities.

3. SETTING THE INTERNATIONAL LEGAL FRAMEWORK FOR REMEDYING VESSEL-SOURCED POLLUTION

The international law of marine pollution can be found in all the sources of international environmental law:[36]

1. Legally binding instruments:[37]
   a. Treaty law;
   b. International customary law;
   c. General principles of international law;
   d. Judicial decisions;
   e. Writings of eminent publicists.
3. International soft law.

This paper solely considers international agreements of both 'soft-law' nature as non-legally binding principles and standards, as well as instruments of 'hard law' nature that constitute legally binding norms. Apart from global international law, regional instruments for environmental governance of the Southern Ocean, in particular the Antarctic Treaty,[38] and the 1991 *Protocol on Environmental Protection to the Antarctic Treaty* [Environmental Protocol],[39] are also considered.

3.1. Framework Treaties

The two milestone multilateral agreements specifically concerning environmental law of the oceans and seas are MARPOL and UNCLOS. MARPOL is an example of an MMEA that has advanced beyond a compendium of rules and regulations into an international environmental regime (IER) viewed by Young and Levy as the "social institutions consisting of agreed upon principles, norms, rules, procedures, and programs that govern the interactions of actors in specific issue areas."[40] Neither MARPOL or UNCLOS provide

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[36] For sources of international environmental law, see P Sands *Principles of International Environmental Law* (2nd ed, 2003) 123 - 268.

[37] ICJ Statute, art. 38 (1).

[38] 402 UNTS 71 (in force 23 June 1961).

[39] (1998) ATS No 6 (in force 14 January 1998).

[40] O R Young and M A Levy "The effectiveness of International Environmental Regimes" in O R Young (ed) *Effectiveness of International Environmental regimes: causal connections and behavioural mechanisms*'(1999) 1.

remedies for ship-sourced pollution damage, save through the concept of state responsibility, which will not be subject to analysis in this paper.

3.2. Global Agreements

3.2.1. Pollution by Oil

The 1992 Liability[41] and the 1992 Fund Convention,[42] establish a comprehensive multi-tiered reparation regime regarding loss or damage pursuant to discharge or escape of oil from laden and non-laden tankers, including spills of bunker oil from such ships.[43] The Bunkers Convention[44] applies to pollution incidents resulting from the escape or discharge of bunker oil from non-tankers, without prejudice to bunkers of tankers since these are covered under the 1992 Liability and Fund Conventions.[45]

Apart from the abovementioned treaties, a number of other international agreements and supplementary legal instruments have been negotiated regarding tanker oil pollution. None of these establish liability and compensation regimes:

- 1969 *International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties* [1969 Intervention Convention];[46]
- 1990 *International Convention on Oil Pollution Preparedness, Response and Co-operation* [OPRC 1990];[47] and
- Annex I to MARPOL.[48]

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41 Above n 3.

42 Above n 4; see also I Dramé "Recovering Damage to the Environment *per se* following an Oil Spill: the Shadows and Lights of the Civil Liability and Fund Conventions of 1992" (2005) 14 (1) *RECIEL* 63.

43 1992 Liability Convention, art. 1(5): "[o]il means any persistent hydrocarbon mineral oil such as crude oil, fuel oil, heavy diesel oil, lubricating oil, whether carried on board a ship as cargo or in the bunkers of such a ship"; see also 1992 Fund Convention, art. 1(2); on the definition of a ship, see 1992 Liability Convention, art. 1(1); 1992 Fund Convention, art. 1(2).

44 Above n 5.

45 Bunkers Convention, art. 4(a).

46 970 UNTS 211 (in force 6 May 1975), as amended by the Protocol of 1973.

47 [1995] ATS No 12 (in force 13 May 1995).

48 MARPOL, 1973 *Annex I - Regulations for the Prevention of Pollution by Oil* (came into force with MARPOL 73/78 on 2 October 1983),

3.2.2. Pollution by Hazardous Substances

3.2.2.1. Hazardous Noxious Substances

Several legal instruments regulate pollution in connection with the carriage of hazardous noxious substances (HNS):

- HNS Convention;[49]
- 2000 *Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances* [OPRC-HNS Protocol];[50]
- Annex II to MARPOL;[51]
- Annex III to MARPOL;[52] and
- 1974 *International Convention for the Safety of Life at Sea* [SOLAS].[53]

From the above instruments, only the HNS Convention establishes a liability and compensation regime.

3.2.2.2. Hazardous Waste

The 1999 Basel Liability Protocol[54] to the 1989 *Basel Convention* ***on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal*** **[Basel Convention]**[55] establishes a comprehensive regime of liability and redress concerning:

> damage resulting from the transboundary movement of hazardous wastes and other wastes and their disposal including illegal traffic of those wastes.[56]

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[49] Above n 5.

[50] IMO Doc. HNS-OPRC/CONF/11/Rev 1 of 15 March 2000 (not in force).

[51] MARPOL, 1973 *Annex II - Regulations for the Control of Pollution by Noxious Liquid Substances in bulk* (in force 6 April 1987)

[52] MARPOL, 1978 *Annex III - Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form* (in force 1 July 1992).

[53] 1355 UNTS 341 (in force on 25 May 1980), Chapter VII- carriage of dangerous goods.

[54] Above n 5.

[55] **1673 UNTS 57 (in force 5 May 1992)**.

3.2.2.3. Marine Pollution by Radioactive Matter

There are two types of nuclear incidents involving radioactive substances at sea, governed under two separate regimes, in particular:

- Pollution by a ship operated by means of nuclear power (nuclear ships); and
- Pollution during carriage of radioactive substances.

Pollution by nuclear ships is effectively left unregulated given that the sole instrument governing such incidents is the 1962 Nuclear Ships Convention[57] that has never come into force. On the one hand, nuclear incident occurring during transboundary transport of radioactive substances is extensively regulated under domestic law, and a number of treaties and other soft law international instruments. Two international regimes can be identified. The first regime collectively referred to as the Paris regime, is regionally linked to European countries, and it comprises the 1960 *Convention on Third Party Liability in the Field of Nuclear Energy* [1960 Paris Convention],[58] as amended by the 1964, 1982 and 2004 Protocols,[59] and supplemented by the 1963 *Supplementary Convention*.[60] The second regime, the Vienna regime, rests on the 1963 *Convention on Civil Liability for Nuclear Damage* [1963 Vienna Convention][61] as amended by the 1997 Protocol.[62] Neither the Paris nor the Vienna Convention engage a

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[56] Basel Liability Protocol, art. 1. The Protocol adopts the terminology and the general scope of application from the Basel Convention as its supplementary mechanism; see Basel Liability Protocol, art. 2(1); Basel Convention, art. 2(10).

[57] Above n 5.

[58] 956 UNTS 251 (in force 1 April 1968) as amended by Additional Protocol of 28 January 1964, and Protocol of 1982.

[59] *Protocol to Amend the Convention on Third Party Liability in The Field of Nuclear Energy of 29 July 1960, as amended by the additional Protocol of 28 January 1964 and by the Protocol of 16 November 1982*, at Nuclear Energy Agency (NEA): <www.nea.fr/html/law/paris_convention.pdf> 1 July 2005.

[60] *Supplementary Convention to the Paris Convention of 29 July 1960 on Third Party Liability in the Field of Nuclear Energy* [1963 Brussels Convention] 1041 UNTS 358, (in force 4 December 1974).

[61] 1063 UNTS 265 (in force 12 November 1977).

[62] (1997) 36 ILM 1454 (in force 4 October 2003)[the 1963 Vienna Convention as amended by the 1997 Protocol, hereinafter '1997 Vienna Convention']; full text of the 1997 Vienna Convention in 1997 Protocol, Annex, at: <.iaea.org/Publications/Documents/Conventions/protamend_annex.html#Anchor-1>20 January 2006.

significant number of States, 15 and 33 respectively.[63] The Conventions were joined into one liability regime by the 1988 *Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention* [1988 Joint Protocol], that enables interchangeable application of the two instruments among State parties to either of them.[64] Still, these two conventions in reality represent two separate mechanisms, evident from the dissimilarities between the latest 2004 Protocol to the Paris Convention, and the 1997 Protocol to the Vienna Convention. Another treaty to consider in the context of seaborne carriage of nuclear material is the 1971 *Convention Relating to Civil Liability in the Field of Maritime Carriage of Nuclear Material* [Nuclear Convention].[65] This Convention is also intended to resolve potential conflicts in the application of the 1963 Vienna and the 1960 Paris Conventions, and any other international instrument that regulates the same subject-matter. One must add to this list the 1997 *Convention on Supplementary Compensation for Nuclear Damage* [1997 Supplementary Convention],[66] that offers a unified nuclear liability system open to all States, not solely contracting parties to the 1963 Paris and the 1997 Vienna Conventions.

3.2.3. Pollution by All Other Substances

Pollution by garbage and discharge of sewage from ships is regulated under Annexes IV and V to MARPOL, respectively.[67] Neither of these two Annexes contains provisions on liability and compensation whatsoever. Similarly, the Ballast Water Convention[68] and the Anti-fouling Convention[69] solely focus on

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[63] For the latest status of ratifications,
see: < http://www.nea.fr/html/law/paris-convention-ratification.html> 1 June 2005;
< http://www.iaea.org/Publications/Documents/Conventions/liability_status.pdf> 1 June 2005.

[64] 1672 UNTS 293 (in force 27 April 1992).

[65] 974 UNTS 255 (in force 15 July 1975).

[66] (1997) 36 ILM 1473 (not in force).

[67] MARPOL, *1978 Annex IV - Prevention of Pollution by Sewage from Ships* (in force 27 September 2003); MARPOL, 1978 *Annex V - Prevention of Pollution by Garbage from Ships* (in force 31 December 1988).

[68] Above n 16.

[69] Above n 17.

the complex technical aspects of pollution prevention and regulation, while completely omitting rules on liability and compensation. Both conventions are yet to come into force. Another important maritime liability treaty is the 1976 *Convention on Limitation of Liability for Maritime Claims* [LLMC] and its 1996 Protocol.[70] The Convention establishes uniform rules on limitation of liability for maritime claims as a general category, thus possibly including claims for environmental damage pursuant to vessel-sourced pollution.

3.2.4. The International Law Commission's Project on International Liability

In 2004 the International Law Commission (ILC) adopted after over 26 years of negotiations the *Draft Principles on the allocation of loss in the case of transboundary harm arising out of hazardous activities*.[71] These Principles are the second and the final stage of the ILC's project on "International liability for injurious consequences arising out of acts not prohibited by international law" that was placed on its agenda in 1978. In 1992 this project was divided into two segments - prevention and international liability, with the first phase finalised in 2001 with the adoption of the 2001 *Draft Articles on the Prevention of Transboundary Harm from Hazardous Activities*.[72] The 2001 ILC's Draft Articles solely define and impose obligations on States with regard to prevention of transboundary harm, whereas the topic of international liability went on to undergo extensive structural metamorphosis for another three years before being completed in 2004 in the form of the Draft Principles.

As a soft law agreement general and residual in nature, the 2004 ILC's Draft Principles represent a (d)evolution from the previous proposals that sought to establish a comprehensive liability and compensation mechanism. These Principles are solely meant to provide appropriate guidance to States in re-

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[70] 1456 UNTS 221 (in force 1 December 1986); *Protocol of 1996 to amend the Convention on Limitation of Liability for Maritime Claims, 1976* [LLMC PROT 1996] (1996) 35 ILM 1433 (not in force).

[71] Hereinafter '2004 ILC's Draft Principles', in Report of the ILC on the work of its 56th session, UN GAOR sess. 59, Supplement No. 10 (A/59/10) (2004), chp. VII, 159. [hereinafter '2004 ILC's Report'].

[72] Hereinafter '2001 ILC's Draft Articles on Prevention' Report of the ILC on the work of its 53rd sess, UN GAOR, 56th session, Supplement No 10 (A/56/10), chp. V.E.1.

spect of hazardous activities not covered by specific agreements, and to indicate matters that should be dealt with in such agreements.[73] Consequently, they did not echo noticeably with the scholars or the international legal community.

3.3. Regional Agreements

A comprehensive set of regional environmental rules and regulations tailored to the Antarctic continent and the Southern Ocean south of 60(S, was developed in 1991 in the form of Environmental Protocol to the Antarctic Treaty.[74] Annexes I,[75] III,[76] and IV[77] to this Protocol specifically regulate vessel-sourced pollution. While the Protocol itself does not contain provisions on liability and compensation in relation to environmental damage, Article 16 of the Protocol explicitly calls for the establishment of an environmental liability regime. Following 13 years of negotiations, *Annex VI to the Environmental Protocol* [Environmental Protocol Annex VI][78] dealing with liability and compensation for environmental harm south of 60^0S was negotiated. Environmental Protocol Annex VI is of limited scope, as it effectively only establishes a system concerning response actions performed in case of environmental emergencies taking place in the Antarctic Treaty Area (ATA), hence south of 60^0S, therefore excluding the sub-Antarctic sections of the Southern Ocean.

4. SEARCHING FOR EFFECTIVE INTERNATIONAL INSTRUMENTS

In its first segment, the discussion on effectiveness considers the justifiability of the various concepts and instruments of liability and compensation presently employed in the above nominated international regimes related to ves-

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73 2004 ILC's Report, chp. VII, above n 71 at 158.

74 Above n 39.

75 Environmental Protocol, *Annex I - Environmental Impact Assessment.*

76 Id, *Annex III - Waste Disposal and Waste Management.*

77 Id, *Annex IV - Prevention of Marine Pollution.*

78 Environmental Protocol Annex VI (Liability Arising from Environmental Emergencies), Measure XXX, doc. XXVIII ATCM/WP69 (2005).

sel-sourced pollution in the sense of providing prompt and adequate compensation when the same is not otherwise available.[79] Secondly, the discussion considers the role of 'liability', and in a wider sense MMEAs, in deterrence of future incidents, arguing that any such role is at present minor. As the third evaluation test, the study examines the 'authority' of the regimes as per their enforcement and compliance. When considering that the majority of the MMEAs do not comprise rules on liability and compensation at all, and only one comprehensive regime is in force, the test of authority becomes a quest to discover the rationale for the inertness in the overall international liability law concerning vessel-sourced pollution. For the purpose of this discussion, compliance is understood as whether States meet their obligations assumed under MMEAs, while enforcement relates to the implementation of consequences for non-compliance with the adopted treaty obligations.[80] Implementation is comprised within the notion of enforcement, and it specifically refers to incorporating international norms into domestic law through "legislation, judicial decision, executive decree or other process."[81] One must note that authority of an international instrument is interlinked with the notion of legitimacy that Vidas defines as "determining whether and to what extent those addressed by a rule see themselves as obligated by it."[82] Legitimacy and effectiveness are considered separate notions.[83] Nonetheless, the position assumed for the pur-

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79 L Bergkamp *Liability and Environment* (2003) 68 - 119 debates the different objectives that environmental liability aims to achieve: compensation and victim protection; deterrence; cost and risk spreading; wealth distribution; corrective justice; and justice and economics.

80 T E Crossen "Multilateral Environmental Agreements and the Compliance Continuum" (2003) 36 *ExpressO Preprint Series,* Berkley Electronic Press: <http://law.bepress.com/cgi/viewcontent.cgi?article=1075&context=expresso> 1 October 2005.

81 D Shelton "Introduction" in D Shelton (ed) *Commitment and Compliance: The Role of Non-binding Norms in the International Legal System* (2000) 1, 5.

82 O S Stokke and D Vidas "Effectiveness and legitimacy of international regimes" in O S Stokke and D Vidas *Governing the Antarctic: Effectiveness and Legitimacy of the Antarctic Treaty System* (1996) 13, 20-21.

83 Unlike effectiveness, legitimacy does not focus on the results that the regime achieves in resolving specific issues, but it is rather concerned with the applicability and acceptance of an IER's norms and structure; see id at 26-28; see also M Koskenniemi *The Gentle Civilizer of Nations: The Rise and Fall of International Law 1870-1960* (2001); M Koskenniemi "Book Review of Thomas Franck's The Power of Legitimacy among Nations (1992) 86 (1) *A J Int'l L* 175; T M Franck *The Power of Legitimacy among Nations* (1990).

pose of this paper is that success of an MMEA or an IER inevitably draws on successful enforcement and compliance, which warrants a brief discussion.

Table 1 below is provided for the purpose of offering a comparative overview of the key features of the relevant agreements from section 3 of this paper. Table 1 considers whether MMEAs determine any or all of the following:

- Pure environmental damage as compensable;
- Pure environmental damage affecting the high seas marine environment as compensable;
- Persons liable and the standard of liability imposed on them;
- Financial security: compulsory insurance and/or pollution compensation fund;
- Conflict of laws rules: court of competent jurisdiction, applicable law, and guarantee of the recognition and enforcement of foreign judgments; and
- Provisions on residual State liability.

Table 1 also indicates whether an MMEA is in force or not, the number of its State parties, and the percentage of the world fleet that it is representative of.

Table 1 Overview of international maritime liability regimes concerning vessel-sourced pollution (as at 1 July 2005)

Treaty		In force	State party (No)	WT (%)	International Civil liability		Fund/ Insurance	Conflict of Laws	RSL	PED	PED High Seas
					Person	Type					
FRAMEWORK TREATIES											
1982 UNCLOS		Yes	149	Na	Na	Na	No	No	No	Yes	Yes
1973/78 MARPOL	Annex I, II	Yes	133	97.33	Na	Na	No	No	No	Yes	Yes
	Annex III	Yes	117	3. 88	Na	Na	No	No	No	Yes	Yes
	Annex IV	Yes	103	58.45	Na	Na	No	No	No	Yes	Yes
	Annex V	Yes	122	95.49	Na	Na	No	No	No	Yes	Yes
	Annex VI	Yes	25	62.93	Na	Na	No	No	No	Yes	Yes
TREATIES REFERRING TO MARITIME LIABILITY AND COMPENSATION											
1960 Paris Convention		Yes	15	Na	Operator	Strict	CI	Yes	No	No	No
1962 Nuclear Ships Convention		No	Na	Na	Operator	Strict	CI	Yes	No	Yes	Maybe
1963 Vienna Convention		Yes	33	Na	Operator	Strict	CI	Yes	No	No	No
1969 CLC		Yes	46	4.83	Shipowner	Strict fault	CI	Yes	No	No	No
1971 Nuclear Convention		Yes	17	19.76	Operator	Na	No	No	No	No	No
1976 LLMC		Yes	47	49.75	Na	Na	No	No	No	Yes	Maybe
1992 Liability Convention		Yes	109	93.84	Shipowner	Strict fault	CI	Yes	No	Yes	No
1992 Fund Convention		Yes	94	88.40	Fund	Strict	Fund	Yes	No	Yes	No
1996 HNS Convention		No	8	5. 37	Shipowner	Strict fault	CI & Fund	Yes	No	Yes	No
1996 LLMC PROT		Yes	14	14.94	Na	Na	No	No	No	Yes	Maybe
1997 Vienna Convention		Yes	5	Na	Operator	Strict	CI	Yes	No	Yes	Yes

1997 Supplementary Convention	No	3	Na	Operator	Strict	CI	Yes	Yes	Yes	No
1999 Basel Liability Protocol	No	5	Na	Specific Persons Any Person	Strict Fault	CI	Yes	No	Yes	No
2000 OPRC HNS Protocol	No	13	16.5	Na	Na	No	No	No	Yes	No
2001 Bunkers Convention	No	7	4.76	Shipowner	Strict	CI	Yes	No	Yes	No
2003 Protocol to the 1992 Fund Convention	Yes	10	10.26	Fund	Strict	Fund	Yes	Maybe	Yes	No
	REGIONAL INSTRUMENTS									
1959 Antarctic Treaty	Yes	45	Na	Na	Na	No	No	No	No	No
1991 Environmental Protocol to the Antarctic Treaty	Yes	45	Na	Na	Na	No	No	No	No	No
2005 Environmental Protocol Annex VI	No	Na	Na	Operator Fund	Strict Strict	CI & Fund	Yes	No	No	Yes
	INSTRUMENTS IN NEGOTIATIONS									
2004 ILC's Draft Principles	No	Na	Na	Operator	Strict	CI & Fund	No	No	Yes	No

Legend for Table 1

PED	Pure Environmental Damage
PED High seas	Pure Environmental Damage on the High Seas
CI	Compulsory Insurance
Fund	Pollution Compensation Fund
RSL	Residual State Liability
WT	World Tonnage

4.1. The Goal of Prompt and Adequate Relief

The primary goal of international instruments on liability and compensation is to ensure that the victims of environmental harm are not left unprotected. This is achieved by: facilitating quicker processing of claims for compensation; reducing forum shopping through unification of relevant international rules; and by erasing the costs of the numerous 'middle men' such as lawyers and government officials characteristic of incoherent international legal system. However, it is only in case of the tanker oil pollution regime, that the victims of environmental harm are in an undisputedly better position than if no such regime was available. Other regimes that have been developed are not in force, except for the system of liability for nuclear damage that has been in force for over three decades, but never resorted to. Despite their present 'paper back' existence, certain ambiguities may already be identified in these regimes that will inevitably impede upon their ability to provide prompt and adequate relief once they are enforced. The same issues already hinder the effectiveness of the tanker oil pollution regime. This concerns the restricted understanding of compensable pure environmental damage that is either completely overlooked in the treaty law, or restricted to a 'reasonable' minimum. Irreparable environmental harm, and pollution affecting marine areas beyond national jurisdiction are completely neglected. These regimes also fail in that they set the liability limits too low and inflexible, and they do not envisage adequate subsidiary means of compensation so as cover loss beyond the limits of liability of the primary liable party. Alternative compensation mechanisms that could be further exploited include: extending the number of persons primary liable; residual State liability; compensation funds; compulsory insurance; unlimited fault based liability for intentional or reckless behaviour contributing to environmental harm.

4.1.1. Probing the 'Strict Liability/Fund' Formula

This section explores the principal weak spots of the international regimes of liability and compensation that at the same time hold the greatest potential for increasing supplementary funding for vessel-sourced pollution damage: (a) defining compensable pure environmental damage; (b) widening or enhancing polluter's liability; (c) expanding the list of liable persons; (d) establishing

pollution compensation funds; (e) strict and fault based liability; (f) limited and unlimited liability; (g) damages with a punitive character and residual State liability; and (h) sovereign immunity of public vessels.

a. Defining Pure Environmental Damage

The most suitable understanding of pure environmental damage is found in the definition of the United Nations Environment Programme (UNEP):

> a measurable adverse impact on the quality of particular environment or any of its components including its use and non-use values and its ability to support and sustain an acceptable quality of life and a viable ecological balance.[84]

Another example of an extensive approach in defining environmental damage *per se* can be found in the 1988 *Convention on the Regulation of Antarctic Mineral Resource Activities* [CRAMRA]:[85]

> any impact on the living or non-living components of that environment or those ecosystems, including harm or atmospheric, marine or terrestrial life, beyond that which is negligible or which has been assessed and judged to be acceptable pursuant to the convention.

Both of the above definitions are far more extensive than any comprised within the liability and compensation regimes discussed here. Nonetheless, both CRAMRA and UNEP employ adjectives of 'measurable adverse impact' and 'beyond negligible' to ensure that compensation is kept at the manageable level. The 1992 Liability Convention offers a seemingly wide understanding of oil-pollution damage as "loss or damage caused by escape or discharge of oil from the ship, wherever such escape or discharge may occur."[86] However, it limits the same to the costs of 'reasonable' measures of reinstatement undertaken or to be undertaken.[87] The same principle is followed in other international

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[84] UNEP, "Working Group of Experts on Liability and Compensation for Environmental Damage Arising from Military Activities" in A Timoshenko (ed) *Liability and Compensation for Environmental Damage, Compilation of Documents* (UNEP Publication, 1998) 9.

[85] (1988) 27 ILM 868 (not in force).

[86] 1992 Liability Convention, art. 1(6.a).

[87] Id, art. 1(6.b); see comments in R H P Brans *Liability for Damage to Public Natural Resources: Standing, Damage and Damage Assessment* (2001) 353-354.

regimes that offer compensation for pure environmental harm.[88] None of these regimes defines what is implied by 'reasonable measures' that act as the measurement for the level of available compensation.

Some insight as to the logic behind adopting restrictive definitions of pure environmental damage is exposed in the practical experience of the tanker oil pollution regime. The International Oil Pollution Compensation (IOPC) Funds Assembly's[89] *1980 Resolution No 3* recognises as compensable solely the quantifiable losses, while claims based on the use of "abstract quantification of damage calculated in accordance with theoretical models" are to be rejected.[90] Moreover, by asserting that solely measures of reinstatement to be undertaken or that have been undertaken can be compensated, the IOPC Funds, and other relevant regimes, predetermine and define the level of compensation by linking it with particular actions. Among others, measures of reinstatement may also include costs of post-spill environmental studies that determine the nature and the extent of environmental damage, as well as those identifying the conditions of 'necessity' and 'reasonableness' of reinstatement.

As for the condition of 'reasonableness', neither the 1992 Liability or the 1992 Fund Conventions, or any other relevant regime, deliberate on the condition of reasonableness. However, the 1971 and the 1992 Fund Claims Manuals,[91] two explanatory booklets that illustrate the process of bringing claims for compensation against the 1971 and 1992 IOPC Funds, offer an interpretation of 'reasonableness'. Specifically, the 1992 Claims Manual asserts:

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88 1992 Fund Convention, art. 1(2); 2001 Bunkers Convention, art. 1(a,b); HNS Convention, arts. 1(6c,d), 2(2.c(iv,v)); Basel Liability Protocol, art. 2(c(iv,v), d, e); 1997 Vienna Convention, art. 1(1.k (4,6), m, n).

89 The IOPC Funds 1971 and 1992 are two separate intergovernmental organizations administering and enforcing the 1971 Fund and 1992 Fund Conventions, and their subsequent Amendments and Protocols.

90 FUND/A/ES 1/13 (10 October 1980), para. 2 (1), and Annex I; similar was argued by the 1971 IOPC Fund in the *General Nation Maritime Transport Co. v Patmos Shipping Co.*, [The Patmos Claim] Court of Appeal (Civil Division) Messina, Judgments (30 March 1989 and 24 December 1993) in Fund/EXC.16/8,220 (October 1986); see I Dramé "Recovering Damage to the Environment *per se* following an Oil Spill: the Shadows and Lights of the Civil Liability and Fund Conventions of 1992" (2005) 14 (1) *RECIEL* 63, 66-68.

91 For the full text of the 1992 and the 1971 Fund Claims Manuals, see: < www.iopcfund.org/publications.htm> 20 June 2005.

> "[t]he aim of any reasonable measures of reinstatement should be to re-establish a biological community in which the organisms characteristic of that community at the time of the incident are present and are functioning normally."[92]

This Manual determines that unquantifiable damage will not be compensated.[93] Here one must note that irreparable damage is not compensable whether as unquantifiable, i.e. because the components of the environment cannot be reinstated, or as unreasonable because the overall costs of reinstatement, or damage cannot be evaluated. Dramé warns that "[this] inevitably implies that the prospect for compensation decreases as damage to the environment increases in size and severity," placing:

> the polluter who causes environmental damage of an irreparable nature ..in a more favourable situation than the one responsible for less serious damage but 'reinstatable" at reasonable cost.[94]

What is disconcerting is that industry organizations such as the ITOPF continue arguing the 'self-healing capabilities of the marine environment,' and the supposed detrimental effects of the human involvement.[95] Since the industry still has a deciding word in the formulation of MMEAs, pure environmental damage caused by ships is not likely to be made compensable in the adequate scope in an international instrument. Progression is solely possible through 'creative' interpretation of the condition of 'reasonableness' by domestic courts deciding cases that fall under the relevant international regimes.

b. Liability Limits and Insurance

Liability is regularly employed in international marine environmental law in its simplified form - limited, strict, and attributable to the shipowner or the operator. Here, one must note that the concept of liability considered is civil liability.[96] Attributing strict liability to the shipowner/operator regardless of

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92 1992 Fund Claims Manual, id at 32.

93 Id at 21-24, 31-34.

94 Dramé, above n 90 at 64.

95 Id at 70.

96 Criminal and administrative liability have not been the subject of this thesis; for a detailed analysis of the concept of civil liability see J L Coleman *Risk and Wrongs, Cambridge Studies in Philosophy and the Law* (1992); P Cane *The Anatomy of Tort Law* (1997); C De la Rue *Liability for Damage to the Marine Environment* (1993).

fault is welcomed as it allows for a relaxed burden of proof for the claimant, thereby ensuring that victims are ultimately compensated. Namely, the claimants must only prove that the damage suffered was caused by a vessel, without having to identify a particular one, in order for their claims to be admissible. However, limiting strict liability to an inadequate sum significantly diminishes its relevance in the covering of loss. Most treaties envisage limits of liability, and establish their own tables of limitation, apart from the Bunkers Convention. In addition, Griggs argues that imposing limits on liability and compensation in fixed amounts diminishes the effectiveness of an international instrument since by the time it comes into force, the set limits lose their value.[97]

States are pressured by various interest groups in international shipping such as shipowners, operators, oil industry, insurers, and other States to maintain the present system of limited strict liability. Various arguments are put forth by different lobby groups against expanding polluter's liability, and liability for pure environmental damage. The central argument reiterates the presumptions of restricted capacity of the insurance market and the shipowner/operator being already financially over-burdened under the existing regimes. It is further contended that liability limits should not be set above the maximum insurable liability, given that this would leave the shipowners and other potentially liable parties financially exposed, thus disrupting their legitimate businesses. In addition, the insurers and reinsurers accentuate that the profitability of their underwriting policies is threatened by the growing trend of expanding of strict liability, and indemnifications for non-pecuniary damage such as punitive damages, or damage to natural resources.[98] Even if one is to accept the argument of limited insurance market capacity, the present liability limits are set well below the reasonable maximum. What is more, there is much that questions the presumption of the restricted capacity of the Protection and Indemnity (P&I) Clubs, in particular insurance club pooling.[99] One of the reasons for this

[97] P J S Griggs "Obstacles to Uniformity of Maritime Law: The Nicholas J. Healy Lecture" (2003) 34 *Mar. L.* & *Com.* 191, 202; Griggs, ibid in response to this problem, as well as so as to accommodate the different perception of the limits by the developed north and developing south, suggests including a range of limitation figures in conventions that would function under the "opt out clause."

[98] J Brewer "Reinsurers delve into growing exposures" *Lloyd's List* (Company News) (6 October 2005).

[99] Insurance pool is an organization of insurers or reinsurers through which particular types of risks are written with the premiums, losses, and expenses shared in agreed amounts among the insurers belonging to the pool.

is that environmental damage risk coverage is still insufficiently developed and lethargic.[100] For instance, the McKenna Report suggests that the majority of insurance policies available in the EU market are limited to sudden and accidental damage, and predominately solely concerning highly hazardous and risk carrying activities.[101] Particular limitations refer to compensation for damage to the natural resources, which is commonly unrecoverable. This is not surprising bearing in mind that damage to the natural resources is not compensable under the tanker oil pollution regime, or the Bunkers Convention. Furthermore, Røsæg from the Scandinavian Institute of Maritime Law maintains that the legislators of the IMO Conventions on liability have been influenced too much by the insurance practices in excepting the limited capacity argument.[102] Røsæg holds that the insurance market, in particular the P&I clubs would generally strengthen by increases of liability and insurance, hence such increases are possible. Still, the 'limited capacity' myth is best evidenced when comparing insurance covers available for different types of marine pollution damage. For instance, the maximum level of liability for the operator in case of damage by oil when carried as cargo goes up to 89 million 770 thousand SDR, while the shipowner under the HNS regime may limit its liability to the maximum of 100 million SDR. This bar is further raised in the 2004 Protocols to the 1960 Paris Convention and the 1997 Supplementary Convention, reaching 617 million SDR (€700 million).

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[100] ERM Economics, London "Economic aspects of liability and joint compensation systems for remedying environmental damage - summary report" (1996), reproduced in European Commission *(EC) White paper on environmental liability* (9 February 2000) COM (2000) 66 final, 37, 41 - 43.

[101] McKenna & Co, London, "Study of civil liability systems for remedying environmental damage - executive summary," June 1996, (EC Report D-G XI; 1996).

[102] E R_ścg "The impact of insurance practices on liability conventions," published in *Legislative Approaches in Maritime Law: Proceedings from the European Colloquium on Maritime Law* (Lysebu, Oslo, 7-8 December 2000) MalrIus No 283, Scandinavian Institute of Maritime Law: <www.jus.uio.no/nifs/> 1 July 2005.

Table 2[103] Comparative overview of compensation limits in global and regional treaty law

COMPENSATION LIMITS AVAILABLE UNDER THE 1992 LIABILITY AND FUND CONVENTIONS		
Liable Entity	Ships Tonnage	Compensation
SHIPOWNER'S LIABILITY	Ship <5 000 gt	4 510 000 SDR (US$ 6.58 million)
	Ships: 5 001 - 139 000 gt	+ 631 SDR (US$ 921) for each additional unit of tonnage
	Ships: 140 000 gt or over	89 770 000 SDR (US$ 131 million)
1992 IOPC FUND (including maximum payable by shipowner)		203 million SDR (US$ 296 million)
SUPPLEMENTARY FUND (only for incidents after 3 March 2005)		Additional 547 million SDR (US$ 798.5 million)
MAXIMUM PER INCIDENT		750 million SDR (US$ 1 billion 94 million)

LIMITS OF LIABILITY OF THE SHIPOWNERS AND SALVORS UNDER THE 1976 LLMC		
Liable Entity	Ships Tonnage	Compensation
CLAIMS FOR INJURY, PERSONAL LOSS AND PROPERTY	≤ 5000 gt	500,000 SDR (US$ 729,920)
	Between 501 - 3,000 gt	+ 667 SDR (US$ 973) for each additional unit of tonnage
	Between 3,001 - 30,000 gt	+ 467 SDR (US$ 681) for each additional unit of tonnage
	Between 30,001 - 70,000 gt	+ 375 SDR (US$ 547) for each additional unit of tonnage
	≥ 70,000 gt	+ 250 SDR (US$ 365) for each additional unit of tonnage

[103] The employed conversion rates SDR -US$, and Euro - US$ for this table are as determined by the International Monetary Fund (IMF) on 15 June 2005: 1 SDR = 1.45984 US$; 1 EURO = 1.2069 $US.

LIMITS OF LIABILITY OF THE SHIPOWNERS AND SALVORS UNDER THE 1996 PROTOCOL TO THE LLMC		
Compensable loss	Ships Tonnage	Compensation
CLAIMS FOR LOSS OF LIFE OR PERSONAL INJURY	≤ 2,000 gt	2 million SDR (US$ 2.9 million).
	Between 2,001 - 30,000 gt	+ 800 SDR (US$ 1167) for each additional unit of tonnage
	Between 30,001 - 70,000 gt	+ 600 SDR (US$ 876) for each additional unit of tonnage
	> 70,000 gt	+ 400 SDR (US$ 584) for each additional unit of tonnage
PROPERTY CLAIMS	≥ 2,000 gt	1 million SDR (US$ 1.45 million).
	Between 2,001 - 30,000 gt	+ 400 SDR (US$ 584) for each additional unit of tonnage
	Between 30,001 - 70,000 gt	+ 300 SDR (US$ 438) for each additional unit of tonnage
	> 70,000 gt	+ 200 SDR (US$ 292) for each additional unit of tonnage

FINANCIAL LIMITS FOR LIABILITY UNDER THE 1999 BASEL LIABILITY PROTOCOL		
Liable Entity	Units of shipment (Tonnes)	Unit of account (SDR)
LIABILITY FOR INCIDENTS DURING THE TRANSPORT OF HAZARDOUS WASTES (the importer, exporter or notifier)	≤ 5	Minimum 1 million SDR (US$ 1.45 million)
	≤ 25	Minimum 2 million SDR (US$ 2.91 million)
	≤ 50	Minimum 4 million SDR (US$ 5.84 million)
	≤ 1000	Minimum 6 million SDR (US$ 8.76 million)
	≤ 10.000	Minimum 10 million SDR (US$ 14.5 million)
	> 10 000	10 million SDR + 1000 SDR (US$ 1459) for each additional ton
	Maximum per incident	30 million SDR (US$ 43.79 million)
LIABILITY OF THE DISPOSER FOR DISPOSAL OPERATIONS	Minimum per incident	2 million SDR (US$ 2.91 million)

COMPENSATION LIMITS UNDER THE 1996 HNS REGIME		
Liable Entity	**Ships Tonnage**	Compensation
SHIPOWNER'S LIABILITY	≤ 2000 gt	10 million SDR (US$ 14.5 million)
	Between 2,001 - 50,000 gt	+ 1 500 SDR (US$ 2189) per each addition unit of tonnage
	> 50,000 gt	+ 360 SDR (US$ 525.5) for each additional unit of tonnage
	MAXIMUM per incident	100 million SDR (US$ 145 million)
HNS FUND (including maximum payable by the shipowner)	250 million SDR (~US$ 365 million)	

THE 2004 PROTOCOLS TO AMEND THE 1960 PARIS CONVENTION ON NUCLEAR THIRD PARTY LIABILITY AND THE 1963 BRUSSELS SUPPLEMENTARY CONVENTION	
OPERATOR (NUCLEAR INSTALLATION)	Up to € 700 million (US$ 844.8 million) per incident
PUBLIC FUNDS BY THE INSTALLATION STATE	Up to € 500 million (US$ 603.5 million) per incident
PUBLIC FUNDS BY ALL CONTRACTING PARTIES	Up to € 300 million (US$ 362 million) per incident
MAXIMUM	€ 1.5 billion ($US 1.81 billion) per incident

2005 ENVIRONMENTAL PROTOCOL ANNEX VI		
OPERATOR'S LIABILITY		
	Ships tonnage (gt)	Compensation
Limitations of liability (MAXIMUM per incident)	Ships < 2000	1 million SDR (US$ 1.45 million)
	Ships: 2001-30 000	+ 400 SDR (US$ 584) per each addition unit of tonnage
	Ships: 30 001- 70 000	+ 300 SDR (US$ 434) for each additional unit of tonnage
	Ships: 70 000 +	+ 200 SDR (US$ 294) for each additional unit of tonnage
	Incidents other than ships	3 million SDR (US$ 4.37 million)
Unlimited operator's liability	All incidents when environmental emergency is caused by negligence or intent of the operator	
FUND		
No limit - all reasonable and justified costs incurred by a party/s in taking response actions		

In light of the above, it is clear that the reluctance of the P&I clubs to see the level of shipowner's liability increase, is not driven by the restrictions dictated by market demands, but the fear of stagnating profit. For example, it would not be profitable enough to offer higher cover for less hazardous type of activities, that are also more frequently performed, and hence the cover is more likely to be activated. Moreover, the insurance companies are well protected under the international environmental liability regimes since in cases of direct action against them, the insurers may rely upon any defences available to the shipowner to have a particular claim dismissed. They may also avoid liability for otherwise admissible claims if it is established that the damage resulted from the wilful misconduct of the shipowner.[104] The reality is that the insurance pools do have the right to protect their business interests, and are powerful enough to sabotage any proposals for increased level of liability for pollution damage. Similar to the insurance clubs, the shipowners and operators continuously emphasise that any further raising of the liability cap would put them out of business. The power of the insurance and the shipowners lobby groups was once again evidenced in October 2005 when the possibility for raising the liability limits under the 1992 Liability Convention was discussed. The proposal to increase the limits was defeated , and an alternative option proposed by Greece with the support of INTERTANCO was adopted. The Greek proposal envisages increasing shipowners' share of the costs of compensation for oil pollution damage through extension of the Small Tanker Oil Pollution Indemnification Agreement (STOPIA),[105] an industry instrument put forth by the P&I clubs.

Unlike the raising the liability limits, a more prospective measure for ensuring the availability of funds for compensation is the mechanism of compulsory insurance. Compulsory insurance is imposed upon the shipowner/operator.[106] It circumvents the difficulties of 'piercing the corporate veil,' the possibility of filing for bankruptcy, or other methods of evading payment of compensation since the funds must be made available through insurance before the voyage. Compulsory insurance is also a means of ensuring enforcement of pollution

[104] P Griggs "International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001" (2001) II *Il Diritto Marittimo* 859-867.

[105] "Oil spill Payout pact welcomed" *Lloyd's List* (Company News) (24 October 2004).

[106] 2001 Bunkers Convention, art. 7; 1992 Liability Convention, art. 7; HNS Convention, art. 12; Basel Liability Protocol, art. 14; 1960 Paris Convention, art. 10; 1997 Vienna Convention, art. VII.

prevention regulations. Namely, it is in the best interest of the shipowner/ operator to comply with the set standards of pollution prevention, given that the P&I clubs assess the 'record' of its past covers before issuing a new policy. The IMO has recognised the importance of compulsory insurance, and the need to extend it to all shipowners in the *IMO Guidelines on Shipowners' Responsibilities in respect of Maritime Claims.*[107] However, the level of compulsory insurance cover is dependent on the restrictive policy of the P&I clubs. Therefore, while it makes compensation readily available, compulsory insurance does not help increase its level.

Ultimately, it is not to be expected that the necessary funds for covering loss resulting from marine environmental damage will be secured by stretching the liability limits, and the compulsory insurance to the necessary level. It is for this very reason that the second tier, independent of insurance and liability, has been added to the international maritime liability regimes.[108]

c. Pollution Compensation Funds

An alternative or a supplement to the mechanism of liability for environmental damage can be found in purely financial schemes for the covering of loss from environmental harm - the so-called pollution compensation funds.[109] The two principle objectives of a pollution compensation fund are: (a) providing primary and additional monetary resources for ensuring prompt, adequate and effective compensation; as well as (b) realising the principle of fairness in terms of equitable sharing of the risk of pollution damage between carriers[110] and cargo owners. In case of the nuclear incidents, the said risk sharing occurs

[107] IMO Guidelines were adopted in the form of a Resolution by the IMO 21st Assembly, Resolution A. 898 (21) (25 November 1999): <http://folk.uio.no/erikro/WWW/corrgr/insurance/898.pdf > 1 May 2005.

[108] See M Faure and W Hui "The international regimes for the compensation of oil-pollution damage: Are they effective?" (2003) 12(3) *RECIEL* 242-253.

[109] N Howke and P Hargreaves "Environmental funds, compensation and liability" (2003) 2 *Environmental Liability* 30, 45 classify this type of environmental fund as the 'liability model', as opposed to the 'enhancement model' whereby contributions are primarily intended for environmental enhancement and protection, rather than remedying pollution damage.

[110] Carriers are owners or operators of vessels providing transportation to individuals or businesses who purchase transportation services or commodities.

between the operator of the nuclear installation and the State where the installation is located, and ultimately all State parties to the liability regime. This is not typical for the maritime domain, as the nuclear liability conventions cover all nuclear incidents, and not solely those referring to seaborne carriage of nuclear matter.

As can be witnessed in the 1992 Fund and the HNS Conventions, pollution compensation funds are financed through contributions by those whose economic activity is seen to put the environment at risk, hence by physical and legal persons other than the shipowner or the operator. The cargo owners - recipients, are obligated to contribute to the environmental funds in amounts correspondent to the size of their cargo and the tonnage of the ship involved.[111]

Apart from the industry funds, there also exists the possibility of State levied funds such as the public funds established on the domestic level in case of the 1960 Paris and the 1963 Vienna Conventions and their subsequent Protocols and amendments. The 2004 Protocols to the Paris Convention and the 1963 Supplementary Convention, require public funds to be instituted by: (a) the State where the nuclear installation of the primary liable operator is located;[112] (b) all contracting States.[113] Similarly, the 2003 Supplementary Fund for covering tanker oil pollution damage also envisages a minimum contribution by State parties when the cargo owners are not obligated to contribute, hence when the amount of contributing oil is below the prescribed minimum.[114] Nonetheless, State levied Funds are rare, and in general States successfully lobby against any such financial commitments concerning "activities whose benefit lies in the private sector."[115] This discussion will therefore focus on industry-levied funds.

While the notion of a pollution compensation fund as a supplementary source of financing is already well acclaimed and realised, the idea of applying the fund solution without the liability tier is still paper-based. In an exclusively

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[111] See Table 2.

[112] 2004 Protocol to the 1960 Paris Convention, Article 10 (amended), K (c); 2004 Protocol to the 1963 Supplementary Convention, Article 3 (amended), b(ii).

[113] 2004 Protocol to the 1963 Supplementary Convention, Article 3 (amended), b(iii).

[114] *Protocol of 2003 to the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage 1992* (2003 Protocol), (in force 3 May 2005), art. 14; full text of the Protocol available from: < www.iopcfunds.org> 1 January 2005.

[115] Daniel, above 6 n at 240.

fund based compensation system, the same role players - carriers and cargo-owners, would remain the main contributors, liability of the fund would remain strict, and insurance coverage would also be available, including compulsory insurance to a certain level. The amounts payable to a fund would continue to differ depending on the contributor, ship's tonnage, and risk involved. Ideally, compensation under the fund would not be limited in line with the alleged restrictions of the insurance market, but the maximum costs of the worst-case scenario for a particular type of pollution incident.[116] A fund-based system would envisage incentives and benefits for the contributors such as a periodical reimbursement mechanism for contributions in access of the costs of loss related to each particular incident, and after the passage of a certain period of time. The 1971 and 1992 IOPC Funds already follow the practice of reimbursement of contributions for surpluses.[117]

Regrettably, a purely financial fund-based system for remedying vessel-sourced pollution damage has not been adopted in any MMEA thus far. Reasons for this may be found in the reluctance of States to reject the contemporary system reliant on carrier's liability and insurance cover, and the pressure of the powerful insurance lobbies that petition against any change that may considerably increase liability limits. What is more, the present treaty practice, including regional instruments such as the EU White paper on environmental liability, reflect the preference of States and the industry for a pollution compensation fund to remain a supplement to liability rather than its substitute.[118]

Some practical critiques directed against the environmental funds as opposed to, for instance, the expanded liability of the 'polluter' include the disproportioned costs associated with the setting up and administering of a pollution compensation fund, in comparison to the incomparably less costly issuing of

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[116] Already, compensation available under the US Superfund is far greater than the 1992 IOPC Funds liability limits; see "Comprehensive Environmental Response, Compensation, and Liability Act" (CERCLA) (December 11, 1980) Title 42, *U.S. Code*, Sec. 9620. , as amended in 1996.

[117] For instance the 1992 IOPC Fund reimbursed on 1 March 2004 by the decision of the Fund's Assembly, a surplus of £ 37.7 million on the *Nakhodka* Major Claims Fund to contributors; see *IOPC Funds Annual Report 2004:* <www.iopcfund.org/npdf/AR2003 English.pdf>1 June 2005.

[118] EC White paper on environmental liability, above n 28 at 30.

insurance certificates for carriers that can nowadays also be done electronically. Moreover, a fund may arguably double charge the cargo owners by levying contributions at a rate and in the amount far greater than that imposed upon the shipowner. This stems from the presumption that the charges levied from the cargo owners are already increased by the costs of environmental regulation that is reflected in the price of transport and cargo itself, as well by the costs incurred by the carrier, including their insurance cover.[119]

Nonetheless, keeping in mind the lack of other supplementary mechanisms of compensation, the pollution compensation funds become an indispensable factor in ensuring remedying pollution damage, whether the funds are employed as a second tier or the central tool for compensation.

d. Liable Parties

The operator is the person that is commonly nominated as the party liable for transboundary environmental harm in international environmental law jargon, but various meanings are attributed to such a person. The 2004 ILC's Draft Principles refer to an operator as the person in command or in control of the activity at the time the incident causing damage occurs. The meaning of a 'person in control of the activity' is taken to a level further in the Basel Liability Protocol that nominates several persons with the primary responsibility over different stages in the process of transboundary movement and disposal of hazardous wastes.[120] Environmental Protocol Annex VI, for instance, deems an operator as any person, which organises activities to be carried out in the Antarctic Treaty Area (ATA).[121] Alternatively, the 1960 Paris Convention and the 1997 Vienna Convention concerning nuclear incidents during shipment of radioactive substances nominate as the primarily liable person an operator of a nuclear installation[122] that is not 'in charge or in control of the activity' in the sense of the seaborne carriage of cargo. An operator liable under these conventions is the person that had organised the transport to be performed, and/or will benefit from this transport.

[119] Howke and Hargreaves, above n 109 at 39.

[120] Basel Liability Protocol, art. (4).

[121] Environmental Protocol Annex VI, art. 2(c).

[122] 1960 Paris Convention, art. 1(a.2); 1997 Vienna Convention, art. II(1).

The two key global liability and compensation regimes for marine pollution, the 1992 Liability and the HNS Conventions, channel liability to the owner of the vessel,[123] while expressly exonerating a number of other persons such as the charterer, operator and the pilot from their applicability.[124] Such exclusion seems unjustified given that these persons often contribute considerably, and at times are the primary cause of pollution incidents.[125] Liability of such persons can be invoked upon proof that pollution damage resulted by their own fault when they acted with intent or recklessly to cause damage.[126] However, the burden of proof falls on the claimant, and is regularly difficult to achieve. Both the tanker oil pollution and the HNS regimes aim to counterbalance the channelling of liability onto the shipowner and its limited strict liability by establishing a pollution compensation fund as a supplementary source of funding.

An alternative to the establishment of a fund would be to increase the number of strictly liable parties beyond the owner or the operator of a ship. This has been done in the Bunkers Convention and the Basel Liability Protocol.[127] The United States Oil Pollution Act (OPA 1990) is an excellent example of a domestic instrument that provides for strict liability of the shipowner, the operator, and the bare boat charter.[128] While this idea seems sound conceptually, it is uncertain how multiple party liability will be performed in practice and with regard to transboundary pollution.

As neither the Bunkers Convention or the Basel Protocol have as yet come into force, their liability models are yet to be tested. Some concerns were voiced by Wu who pointed to the shortcomings of not channelling liability in the Bunkers regime, warning that this will cause delays in the processing of claims against multiple liable parties, in particular given the complex network of multiple insurance covers.[129] What is more, not all of the parties that are most

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123 1992 Liability Convention, art. 3 (1); HNS Convention, art. 7.

124 1992 Liability Convention, art. 3(4); HNS Convention, art. 9 (2).

125 The *Sea Empress* incident was known to be caused by the pilot; see the 1971 IOPC Fund documentation, 1971 Fund/EXC.55/19 (24 October 1997).

126 1992 Liability Convention, art. 5(2); Basel Liability Protocol, art. 5; Environmental Protocol Annex VI, art. 9 (3).

127 Basel Liability Protocol, art. 4(1); Bunkers Convention, art. 1 (3).

128 *1990 OPA,* US. Pub. L.101-380 (18 August 1990).

129 C Wu "Liability and Compensation for Bunker Pollution" (2002) 33 *J.Mar.L.&Com*. 553.

likely to contribute to pollution incidents were included in the list of those potentially liable under the Bunkers Convention. For instance, time charters should have also been added to the list of primary liable parties, as they are responsible for supplying bunkers to the ship under the terms of their charter.[130]

e. Strict and Fault Based Liability

A number of additional liability based mechanisms may be employed in order to fully cover the costs associated with environmental harm. One such method entails differentiating between fault based and strict liability. This system has already been employed in a number of international liability and compensation regimes related to vessel-sourced pollution.[131] There are many arguments in favour of the strict liability[132] of the polluter, usually being the carrier and/or the cargo-owner, in particular given the difficulties in proving fault in cases of transboundary marine pollution.[133] This relates to the fact that environmental damage is usually gradual, it is detected long after the polluter left the place of the incident. In the context of the Southern Ocean, ice and other polar features, as well as the vastness of the region, render detection even more difficult. What is more, compensation for grave environmental harm when highly hazard activities are involved, should not be restricted by the proof of fault of the liable parties, at least to the extent that they were aware of the hazards involved in the seaborne activities in question. Bergkamp offers a structured line of argumentation against employing strict liability, advocating the primacy of fault based liability for environmental harm as a principle instead.[134] It is argued here that Bergkamp's critique primarily takes account of the realities of the insurance world, the industries and commercial interests

[130] Ibid.

[131] 1992 Liability Convention, art. 5(2); Basel Protocol, art. 5; Environmental Protocol Annex VI, art. 9(3);

[132] Cane, above n 96 at 45-47 differentiates between various types of strict liability for environmental harm: conduct based liability; relationship based (link between the liable persons and tortfeasor); and outcome based liability based on the idea of risk creation.

[133] X Hanqin *Transboundary Damage in International Law* (2000) 33, 108 favours strict liability in cases when the allocations of risk can be measured and calculated with reasonable accuracy, and specifically concerning hazardous activities; for opposing view see discussion in Bergkamp, above n 79 at 120 - 150.

[134] See Bergkamp, above n 79 at 150 -161, 366-373.

involved, while neglecting the value of the ecological component that does not respond to the common language of economy and insurance policies. One cannot rely on the industry to self-regulate, or not resort to various methods of escaping liability, which are far more flexible when conditioned by the burden of proof of fault, as opposed to strict liability. Bregkamp's arguments for eliminating strict liability function with the ideal background of perfectly harmonised domestic claims settlement procedures, and when no technical obstacles in detection of environmental damage hinder the proof of fault. Without deconstructing the poles of thought in favour and against strict liability, the view upheld here is that there is a place for strict liability in ensuring that prompt and adequate compensation is available for vessel-sourced pollution damage, regardless of the nature of the polluting activity being hazardous or not. The distinction between the degree of risks involved should be reflected in the portion of liability deemed strict as opposed to that left to the proof of fault, hence through the system of financial limits of liability. It is fairer to shift the burden of proof to the shipowner that may subsequently seek recourse against a third party should it feel to be without fault, rather than impose it upon the victim. It is further argued that a combination of strict and fault based liability appears the most appropriate standard of liability in connection with pollution damage caused by ships.

f. Unlimited and Limited Liability

Another matter to consider is the notion of unlimited liability. The formula employed in the MMEAs such as the 1992 Liability Convention, the Basel Protocol and the Environmental Protocol Annex VI, entails unlimited liability for acts committed with intent or negligence, hence based on fault, as opposed to limited liability for accidental pollution. Unlimited liability is attributed both with respect to the strictly liable polluter, but also other persons that are liable solely on the bases of fault.[135] Specifically, the strictly liable person is relieved of the right to limit liability when acting with intent or recklessly. The central justification for unlimited fault based liability is that intentional and negligent pollution are preventable actions, hence the level of liability in relation

[135] This refers to servants, the master, operator, charterer and other non-primary liable persons not designated as the primary liable one under the Protocol; 1992 Liability Convention, art. 3(4); Basel Protocol, art. 5.

to them must have a stronger deterrent component as opposed to liability for accidental pollution.[136] In this sense, it will not matter that the level of compensation awarded entails economic failure for the liable carrier, if the objective of prevention so commands.

g. Damages with a Punitive Character and Residual State Liability

When a pollution incident is the result of an intentional or negligent act, or consequential to violations of international environmental obligations, additional compensation could be secured through special types of damages primarily aimed at exerting compliance and deterrence. This primarily relates to awarding punitive damages payable by liable persons that acted with intent or negligence in causing environmental harm. So far, punitive damages are exclusively employed in municipal law.[137] One must also note the idea of establishing an obligation of *restitutio in integrum* for all loss suffered from environmental harm. Relevant international regimes do not preclude such a possibility under other regimes, primarily domestic law, but they do not permit *restitutio in integrum*, as this clashes with the common principle of limited liability of the operator, and limiting compensation for pure environmental damage. It is unlikely that either *restitutio in integrum* or punitive damages will be adopted in international marine liability regimes given the resistance of the States and industries likely to be affected. Another strong argument against such mechanisms is the question of how the amount of these damages would be assessed and determined.[138] Another means for ensuring adequate redress is the concept of residual State liability that thus far has been seldom included in international treaty law. Some aspects of residual State liability may be identified in the minimum contribution requirement levied on the State parties to the 2003 Supplementary Fund,[139] or the requirement of holding public funds for supplementary compensation as is sought under the 1997 Supplementary Convention concerning nuclear incidents.[140] Residual State liability is still to

[136] See comments by Faure and Hui, above n 108 at 252-253.

[137] Hanqin, above n 133 at 258; see also M-L Larsson *The Law of Environmental Damage: Liability and Reparation* (1999) 395 discussing the inclination in the American tort law to employ punitive damages.

[138] See Hanqin, Ibid.

[139] 2003 Protocol to the 1992 Fund Convention, art. 14.

[140] 1997 Supplementary Convention, Chapter III (Compensation).

attract the necessary recognition as a valid subsidiary means of compensation for transboundary environmental harm.

h. Sovereign Immunity of Public Vessels

As a general rule, warships, naval auxiliary or other ships owned or operated by a State and used only on government non-commercial services (public vessels)[141] enjoy a privileged status in international law through the institute of sovereign immunity. Such ships are in principle exempt from the application of international regimes concerning the protection and preservation of the marine environment. Sovereign immunity in the maritime context may entail the guarantee of non-application of an entire international agreement or a number of its parts, to public vessels. It may also refer to exemption of public vessels from domestic jurisdiction of any State other than the flag State, in view of claims arising under an applicable international agreement.

The guarantee of sovereign immunity is particularly disconcerting when considering that military vessels are a significant contributing factor to marine pollution. This is even more evident in the case of the Southern Ocean south of 60(S since most of the vessels sailing this region are State owned and/or operated. While military activities are prohibited in the region, the passage of military vessels and warships is permitted.[142] What is more, a particular problem to consider is the qualification of government owned and operated vessels engaging in research activities in the Southern Ocean as vessels on non-commercial governmental activity, hence enjoying sovereign immunity privileges and being left outside the uniform international systems of liability and redress. While the guarantee of immunity of public vessels from enforcement under foreign jurisdiction is understandable as a manifestation of State sovereignty, it seems unwarranted to lower the bar entirely by placing public ships outside the generally adopted marine environmental regimes such as UNCLOS or MARPOL. Specifically, both UNCLOS and MARPOL exempt public vessels from compliance with their provisions concerning protection and preservation of the marine environment. Both agreements, however, require flag States to

[141] J S Dehner "Vessel-source pollution and public vessels: sovereign immunity v. compliance, implications for international environmental law" (1995) 9 *Emory Int' L Rev* 507 employs the term 'public vessel'.

[142] Antarctic Treaty, art. 1.

adopt appropriate measures so as to ensure that public vessels "act in a manner consistent, so far as is reasonable and practicable, with this Convention," but solely to the extent that the said measures do not impair the operations or operational capabilities of public ships.[143] The requirement of adopting appropriate measures in line with UNCLOS or MARPOL is without real substance given its vague and ambiguous language, as well as in reality being completely unenforceable. Specifically, the flag State will determine which measures are appropriate and necessary in accordance with international law.

Consequently, violations of the flag State imposed 'appropriate measures' for public ships may be deemed punishable, and pollution damage characterised as compensable, only when the domestic law of that same flag State so permits. In addition, UNCLOS expressly guarantees complete immunity for public vessels from jurisdiction of any State other than the flag State.[144] There exists no control mechanism concerning the compatibility of the activities of public ships with UNCLOS or MARPOL other than by the very flag State, and perhaps through the highly indolent and seldom used mechanism of State responsibility.

With regard to treaties concerning liability and compensation, the 1992 Liability Convention, the HNS Convention, the Bunkers Convention, and Annexes IV (marine pollution) and Annex VI (environmental liability) to the Environmental Protocol to the Antarctic Treaty, explicitly do not apply to public vessels. In addition, the IOPC Fund expressly redeems itself of the obligation to pay compensation when such ships caused pollution damage.[145] The 1962 Nuclear ships Convention is the sole global instrument in international maritime law that extends its application to all vessels including war ships. It is largely for this very reason that this Convention never came into force.

In the end, while it is not to be expected that the sovereign immunity clause will ever be entirely lifted, much can be done to prevent pollution from public vessels, and ensure that any damage resulting from them is compensable in a prompt, adequate and timely manner. One way of achieving this is by having

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[143] UNCLOS, art. 236; MARPOL, art. 3(3); see also 1926 *International convention for the unification of certain rules concerning the immunity of state-owned ships,* with the Protocol of 24 May 1934, 176 LNTS 199, (in force 8 January 1937).

[144] UNCLOS, art. 95, 96.

[145] 1992 Liability Convention, art. 11(1); 1992 Fund Convention, art. 4(2a), HNS Convention, art. 4(4); Bunkers Convention, art. 4(2); Environmental Protocol Annex VI, art. VI(5), Environmental Protocol Annex IV (marine pollution), art. 11.

the IMO attempt to gather reports concerning pollution by public vessels. The IMO, as well as the international community, should also engage further in ensuring that flag States develop national environmental liability regimes applicable to their public vessels in the same scope as the international regime in place for commercial vessels.

4.2. Prevention

International liability and compensation regimes contribute to pollution prevention given that they attribute harmful consequences for inflicted environmental harm to the polluter. Liability in general is designed as one of the many subsidiary means of deterrence. Strict liability as envisaged in the international maritime liability and compensation schemes, is not a strong deterrent given that its primary focus is placed on providing compensation, rather than punishing/deterring the polluter. It is the amount of damages awarded on account of pollution damage, which determines the potentially preventive effect. Liability holds greater importance in pollution prevention when damage is the result of someone's negligence or intent, rather than being purely accidental. But even in this case, only when the liability is defined as unlimited, or when the set limits go beyond the threshold of reasonableness, can preventive effect of fault liability be significant. Limits of strict liability are presently at an inadequate level so as to deter polluters.[146]

Prevention through liability and the award of damages would best be achieved by punitive damages in cases when the polluter acted with intent and malice in causing environmental harm. Punitive damages would be particularly effective when attributed solely based on the violation of an environmental obligation, or the threat of environmental harm, regardless of whether injurious consequences occurred or not. Similarly, it is not the international liability and compensation regimes that will ever assume the role, or be the most effective deterrents.[147] The central role lies with regulatory mechanisms, and maximising cooperation between States, in particular capacity building and technical

[146] Bergkamp, above n 79 at 95: "Liability's deterrence objective thus does not require a strict liability regime for environmental damage."

[147] Faure and Hui, above n 108 at 253 argue that "legal remedies can only, to a limited extent, hope to influence the behaviour of social actors."

assistance to developing States and States in transition. Domestic environmental liability regimes, and in some cases regional ones, will have a stronger deterrent component as they often employ instruments such as unlimited fault liability, imposing of punitive damages, and in case of the EU, even criminal liability for vessel-sourced pollution.[148]

4.3. Effectiveness through Implementation, Compliance and Enforcement

The connection between effectiveness and the degree of enforcement of and compliance with an international regime is self-evident. A regime that is not enforced or complied with is destined to fail. Given that apart from the nuclear and tanker oil pollution regimes, no other relevant regime is in force, the issue is one of implementation, as much as enforcement. One must be cautious and note that neither the broad participation of the international community in a treaty regime, nor the high level of compliance, is a guarantee of effectiveness in the sense that an international liability instrument will achieve its goal of providing effective remedy. Still, it is necessary to look to reasons why states are not implementing and enforcing international instruments on liability and redress that they have signed.

4.3.1. The Problem of Implementation

Kiss emphasises that "States that have voluntarily negotiated, drafted, and adopted an international instrument comply with the agreement which is the final product of their efforts."[149] Why is it then that states that have adopted MMEAs concerning liability and redress have failed to implement them beyond any reasonable time limit? In case of the 1996 HNS Convention for instance, this limit has reached 10 years. These delays in ratification are often attributable to the slow domestic administrative procedures that can be the result of a

[148] 2005 *EU Directive on ship source pollution and the introduction of penalties for infringements 2005/35/EC,* (OJ L 255/11 of 30 September 2005).

[149] A Kiss 'Commentary and Conclusions' in D Shelton (ed) *Commitment and Compliance: The Role of Non-binding Norms in the International Legal System* (2000) 223, 242.

change in diplomatic representatives responsible for a particular treaty, or because a more pressing issue has taken priority in the relevant governmental department. Moreover, states often wait for one another to ratify a treaty, carefully choosing the time for it to come into force. Smaller states often rely on the guidance of strong states. Further issues arise when domestic legal systems do not correspond with the adopted international rules and regulations.

The reality is that developing countries and countries in transition often sign or adhere to treaties without having the right domestic infrastructure, the know-how or the funds to implement and enforce them. Other elements impeding upon implementation and enforcement refer to costs associated with these processes. This includes expenses intrinsic to the establishment of the convention's secretariat; providing technical assistance; setting up and managing a pollution compensation fund, and other. However, in some cases delays in ratification are difficult to comprehend. For example, in case of the 2001 Bunkers Convention, Australia was the state that made the first proposal for such an international instrument in 1994, and was a part of the initiative and later on the negotiating team for this convention until its adoption in 2001.[150] Australia to date has not ratified the Bunkers Convention, and neither have any of the six countries, apart from South Africa, that submitted the 1996 Joint Statement advocating the need for such an international agreement before the IMO Legal Committee.[151]

4.3.2. Non-Compliance

There are many factors that may lead to compliance with an international norm. They include presence of non-compliance mechanisms, enforcement measures, trade sanctions and dispute resolution procedures accompanying a particular international instrument. It is argued here that the effectiveness in achieving environmental goals, as well as effectiveness as per compliance, is attained through processes originating predominately from the realm of internal relations and external to international law. Therefore, the role of coercive enforcement instruments is of subsidiary relevance. States rarely and reluctantly

[150] See Wu, above n 129 at 554.

[151] For the status of the Ballast Water Convention, see the IMO: <www.imo.org/includes/blastDataOnly.asp/data_id%3D12617/status.xls> 1 August 2005.

resort to methods such as dispute resolution procedures, invocation of State responsibility, trade and other sanctions, to compel obedience from defiant States. While the threat of sanction may be an incentive for a State to act in line with an international instrument, state practice has proven that this is not the primary means for exerting obedience. From the perspective of legal theory, Koh reasons "voluntary obedience, not forced compliance, must be the preferred enforcement mechanism."[152]

Some of the non-coercive means of compelling obedience as viewed by the two leading legal scholars Franck and Chayeses include:

If Nations must regularly justify their actions to treaty partners…they are more likely to obey it…. [153]

and

If nations internally "perceive" a rule to be fair…they are more likely to obey it.[154]

Therefore, two of the primary instruments for enforcement of international law include: (a) applying pressure by other participating States in the same MMEA or an IER; and (b) effective incorporation of an international instrument into domestic regimes as a process of legitimising international norms. As for the former, the pressure can be exerted through political bargaining as per the system of concessions and reprisals in various areas of interstate cooperation, especially trade issues. This technique is particularly popular among the countries of the industrialised north. The key element of effective internalisation of international liability regimes refers to developing domestic regimes of liability and redress that are harmonised with the relevant international instruments. In general, there exists a consensus among scholars that effective integration of international law into domestic systems is among the primary instigators of compliant behaviour.[155]

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[152] H H Koh "Why nations obey international law" (1997) 106 *Yale Law Journal* 2599, 2645; for an account of bibliography relating to compliance with international law, see W C Bradford "International Legal Compliance: and annotated bibliography" (2004) 30 *N.C.J.Int'l L.&Com.Reg.* 379.

[153] Koh account of Chayeses, above n 152 at 2645; see also A Chayes and A H Chayes *The New Sovereignty: Compliance with International Regulatory Agreements* (1995).

[154] Koh account of Franck, ibid; see also Franck, above n 83.

[155] C Giraud-Kinley "The Effectiveness of International Law: Sustainable Development in the South Pacific Region" (1999) 12 *Geo. Int'l Envtl. L. Rev*. 125, 170 notes that "the effectiveness of international law as its capacity to be implemented at the international

In addition, Mrema identifies a list of effective non-coercing means of enforcement including diplomatic and management measures such as the use of financial measures, capacity building, reporting requirements and compliance monitoring.[156] Chayeses also suggests a list of potential non-forceful mechanisms: transparency; reporting and data collection; verification and monitoring; dispute settlement; and strategic review and assessment.[157] Examples of monitoring and reporting as non-compliance mechanisms can be found in the 1992 Fund Convention concerning tanker oil pollution. Specifically, the member-States to the 1992 Fund are obligated to submit reports on oil received in one calendar year, and monitor the timely submission of these reports. However, in view of the IOPC Fund's Assembly, there are no legal grounds for imposing sanctions on member States that fail to submit the reports,[158] and no sanctions have been asserted thus far. Similarly, consultations and negotiations are in progress concerning "giving teeth" to the non-compliance procedures established under the HNS Convention, that refer to member States failing to report on the amounts of the received hazardous cargo in the calendar year. No progress has been made in this respect so far.

Furthermore, one must also acknowledge that compliance by both States and non-state target actors will depend on the cost-benefit ratio. As the 2003 OECD Report illustrated, it remains cheaper to pollute the marine environment than to comply with strict environmental standards.[159] If the disobedient non-

and national levels ... the effectiveness of international law ... is ultimately measured according to its enforcement at the local level."; Koh, above n 86 at 2659 emphasizes that the key element in obedience of international regimes is their reaffirmation in the form of "internally binding domestic legal obligation" through processes such as judicial description, legislative embodiment, or executive acceptance.

156 See Elizabeth Mrema, Senior Legal Officer, UNEP DEPI, presentation at the 2005 Summer Course on Environmental Law-Making and Diplomacy, Joensuu, Finland: < file:///C:/Documents%20and%20Settings/ivanaz/Local%20Settings/Temporary%20Internet%20Files/Content.IE5/ODQRGP2V/295,1, CROSS-CUTTING ISSUES IN COMPLIANCE AND ENFORCEMENT OF MEAs>, 1 October 2005 (the course was attended by the author).

157 Chayeses in Koh, above n 152 at 2637.

158 The only possible sanction identified by the 1992 IOPC Fund Assembly is taking the non-submission of oil reports into account when electing members of the Executive Committee of the IOPC Funds; IOPC Funds Doc. 92FUND/A.10/14/1: < www.iopcfund-docs.org/ds/pdf/92a10-14-1_71ac17-9-1-sfaes1-8-1_e.pdf> 1 August 2005.

159 OECD Report, above n 13.

-state targeted actors are also a powerful lobby group in one of the participating States, it is likely that that State will allow such disobedience, and hence be itself in violation of the international instrument. Finally, the number of state parties, and the participation of the leading maritime and FOC countries, are also factors adding to a regime's effectiveness. In case of the Southern Ocean, Environmental Protocol Annex VI fails in this respect, given that not one of its State parties is an FOC country.

International institutions such as the UNEP and the IMO have undertaken to resolve the problems in non-compliance and lack of enforcement by developing a number of techniques and mechanisms for ensuring enforcement and compliance in international environmental law. For instance, the 2002 UNEP *Guidelines on Compliance with and Enforcement of Multilateral Environmental Agreements*[160] advise states on a step-by-step basis of the many aspects of the infrastructure that should evolve around an international agreement so as to ensure its enforcement and compliance. In the context of the prevention and remedying of environmental harm caused by ships, one such specific method is black listing non-complainant ports and FOC countries.

CONCLUSIONS

This paper has demonstrated that the present formula of 'strict liability plus reasonable compensation' in relation to vessel-sourced environmental damage, suffers many shortcomings resulting in the complete lack of regulatory response regarding certain types of pollution incidents, the delayed coming into force of the negotiated treaties, and the incompleteness of the international regimes which are in force. Regimes in relation to highly hazardous activities have been established, and out of those only the tanker oil pollution regime is enforced successfully. The number of negotiated treaties that are not implemented or complied with reveals the inconsistency between actual States' positions concerning international liability for environmental harm and the attitudes expressed in the negotiated and adopted international agreements. This study questioned international civil liability as the most appropriate means by which to keep raising the bar when it comes to the level of compensation available concerning pure environmental damage. Following analysis, it appears

[160] UNEP Publication, Nov. 2002.

that strict liability of a carrier, without supplementary means of compensation such as funds and compulsory insurance, is not effective in covering loss pursuant to vessel-sourced pollution. The tanker oil pollution regime as the most successful mechanism establishes three tiers of liability, also having gradually increased the shipowner's and the IOPC funds' liability limits. It is important to note however that this international regime is an anomaly in the regular progression of international environmental liability law. Its driving force - the high financial and power stakes, as well as the frequency and gravity of incidents, are not characteristic of other types of marine pollution.

The paper outlined a number of concrete measures that should be incorporated in any future, and wherever possible, in the existing international regimes of liability and redress. These include:

- Enabling full restoration of environmental damage *per se;*
- Envisaging liability for environmental harm on the high seas;
- Increasing the number of primary and strictly liable persons;
- Higher level of limits to strict liability in line with the average costs projections for covering a specific type of loss, rather than dubious 'insurance market capacity';
- Unlimited liability for intentional and negligent pollution, including prescription of punitive damages where possible;
- Re-affirmation of the concept of unlimited fault-based international civil liability;
- Attributing liability for the threat of pollution arising from violations of environmental rules and standards;
- Introducing punitive damages at least in cases of intentional or negligent pollution involving hazardous activities;
- Expanding on the use of compulsory insurance and State and industry levied pollution compensation funds;
- Applying international regimes of pollution prevention to public vessels;
- Imposing obligation on State parties to institute domestic regimes correspondent to the international ones for its public vessels; and
- Maximising the role of States in loss allocation schemes through residual State liability.

As for the role of international rules of liability and compensation in exerting prevention of pollution, any such contribution is limited, in particular with regard to employing liability in international law for compliance with pollution prevention regulations. Much has to change in the perception of the internati-

onal community before the key measures of enforcement and deterrence through liability such as punitive measures, unlimited liability, or compulsory insurance for all carriers, are introduced in the international maritime sphere. Finally, it is a fact that in the case of vessel-sourced pollution, the relevant regimes are at present ineffective through their inactivity. However, the problem lies not in the lack of enforcement and compliance mechanisms, but the fact that global, comprehensive and legally binding instruments of liability and redress have been negotiated without the negotiating States having been truly capable of implementing the adopted measures in their domestic law, and with serious concerns about the possibility of compliance. Ultimately, an international instrument can only be considered effective when the processes of negotiations and implementation do not render its development insignificant, and as long as it can be successfully enforced and complied with.

Sažetak

Ivana Zovko*

UČINKOVITOST MEĐUNARODNIH INSTRUMENATA U SLUČAJU ODGOVORNOSTI I NAKNADE ŠTETE ZBOG ONEČIŠĆENJA S BRODOVA: SLUČAJ JUŽNOG OCEANA

Iako je određeni broj međunarodnopravnih instrumenata koji uređuju pitanja naknade štete i odgovornosti u pogledu zagađivanja pomorskog okoliša od strane brodova dogovoren, ili čak stupio na snagu, njihova učinkovitost je upitna, kao i sama pravna sredstva i principi koje promoviraju. Ovaj članak propituje učinkovitost relevantnih međunarodnopravnih instrumenata u tri vida: (a) sposobnost osiguranja pravovremene i odgovarajuće naknade za "čistu ekološku štetu"; (b) prevencija zagađivanja od strane brodova uopće; (c) razmjer primjenjivosti, izvršavanja i poštovanja međunarodnopravnih instrumenata kao mjera njihove učinkovitosti. Problem primjerenosti međunarodnopravnih instrumenata za naknadu ekološke štete sagledava se na primjeru štete nanesene samom pomorskom okolišu (čiste ekološke štete), za razliku od štete na stvarima i osobama. Predmetna analiza provedena je na primjeru Južnog oceana. Naime, Južni ocean kao i Mediteran,

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uključuje zone pod nadležnosti obalne države, kao i otvoreno more, te uživa zaštitu pod općim međunarodnopravnim kao i posebnim regionalnim sustavom zaštite i očuvanja pomorskog okoliša. Osim toga, najnoviji regionalni pravni instrument za odgovornost i naknadu ekološke štete je upravo Aneks Protokolu za zaštitu okoliša, Ugovora o Antarktici, koji je donesen 17. lipnja 2005. i primjenjiv je na Južni ocean.

Ključne riječi: međunarodno pravo zaštite i očuvanja pomorskog okoliša, zagađivanje pomorskog okoliša od strane brodova, učinkovitost međunarodnopravnih instrumenata za odgovornost i naknadu čiste ekološke štete, Južni ocean

Zusammenfassung

Ivana Zovko[**]

DIE EFFIZIENZ INTERNATIONALER INSTRUMENTE BEI HAFTUNG UND SCHADENSERSATZ WEGEN VERUNREINIGUNG DURCH SCHIFFE: DER FALL DES SÜDLICHEN OZEANS

Obwohl eine Reihe von völkerrechtlichen Instrumenten zur Regelung von Schadensersatz und Haftung hinsichtlich der Verschmutzung der maritimen Umwelt durch Schiffe vereinbart wurden oder auch in Kraft getreten sind, ist ihre Effizienz ebenso wie die Instrumente selbst und die Grundsätze, für die sie stehen, fagwürdig. Dieser Beitrag untersucht die Effizienz der relevanten völkerrechtlichen Instrumente auf drei Aspekte hin: (a) die Fähigkeit, rechtzeitigen und angemessenen Schadensersatz für „reinen Umweltschaden" zu leisten; (b) die Verhütung der Verschmutzung durch Schiffe als solcher; (c) das Verhältnis der Anwendbarkeit, der Durchsetzung und der Beachtung der völkerrechtlichen Instrumente als Maßstab ihrer Effizienz. Das Problem der Angemessenheit der völkerrechtlichen Instrumente für den Schadensersatz bei Umweltschäden wird anhand des Beispiels eines der maritimen Umwelt direkt zugefügten Schadens (reiner Umweltschaden) im Unterschied zu Personen- und Sachschaden behandelt. Die gegenständliche Analyse wurde am Beispiel des Südlichen Ozeans durchgeführt. Dieser umfasst nämlich wie auch das Mittelmeer Zonen unter der Ingerenz des jeweiligen Küstenstaates wie auch die offene See und steht unter dem Schutz allgemeiner völker-

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rechtlicher Normen wie auch besonderer regionaler Vorschriften zum Schutz und zur Erhaltung der maritimen Umwelt. Das jüngste regionale Rechtsinstrument für Haftung und Schadensersatz bei Umweltschäden stellt der Annex zum Umweltschutzprotokoll des Antarktisvertrages dar, der am 17. Juni 2005 vereinbart wurde und für den Südlichen Ozean gilt.

Schlüsselwörter: Völkerrecht im Bereich Schutz und Erhaltung der maritimen Umwelt, Verschmutzung der maritimen Umwelt durch Schiffe, Effizienz völkerrechtlicher Instrumente für die Haftung und den Schadensersatz bei reinen Umweltschäden, Südlicher Ozean