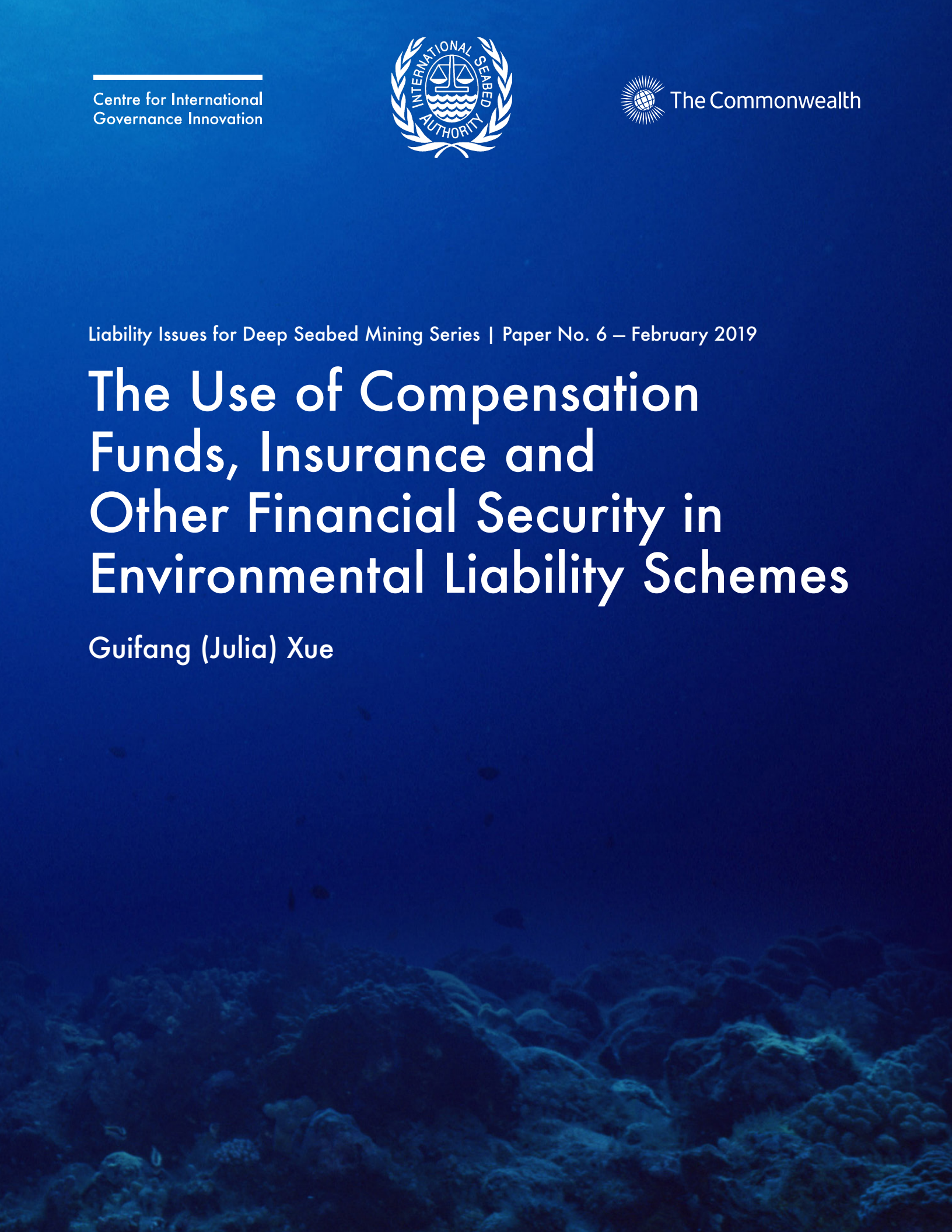
Centre for International Governance Innovation

The Commonwealth

Liability Issues for Deep Seabed Mining Series | Paper No. 6 – February 2019

The Use of Compensation Funds, Insurance and Other Financial Security in Environmental Liability Schemes

Guifang (Julia) Xue



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About the Project

The Liability Issues for Deep Seabed Mining project was developed by the Centre for International Governance Innovation (CIGI), the Commonwealth Secretariat and the Secretariat of the International Seabed Authority (ISA) to assist in clarifying legal issues of responsibility and liability underpinning the development of exploitation regulations for the deep seabed. CIGI, in collaboration with the ISA Secretariat and the Commonwealth Secretariat, in 2017, invited leading legal experts to form the Legal Working Group on Liability for Environmental Harm from Activities in the Area (LWG) to discuss liability related to environmental damage, with the goal of providing the Legal and Technical Commission, as well as members of the ISA with an in-depth examination of potential legal issues and avenues.

Papers in the series cover the following topics: the current legal architecture for liability/responsibility under the United Nations Convention on the Law of the Sea; the scope of activities covered under a liability regime; the responsible parties; the potential claimants; the range of recoverable damages; and the appropriateness of using insurance and compensation funds to ensure adequate resources for compensation. CIGI Senior Fellow Neil Craik coordinated the development of the paper series.

About the LWG

The LWG was co-convened by CIGI, the Commonwealth Secretariat and the Secretariat of the ISA, under the joint direction of Neil Craik (CIGI), Hannah Lily (Commonwealth Secretariat) and Alfonso Ascencio-Herrera (ISA Secretariat). Other members of the LWG were invited based on their expertise in areas related to international law of state responsibility and liability, international environmental law and law of the sea. While working under the auspices of the ISA, the LWG is an independent group of legal experts.

The members of the LWG are:

- Alfonso Ascencio-Herrera, Deputy Secretary-General, ISA
- Christopher Brown, Legal Officer, ISA
- Eden Charles, Independent Consultant on International Law, and Former Deputy Permanent Representative of Trinidad and Tobago to the United Nations*
- Neil Craik, Senior Fellow, CIGI, and Professor of Law, University of Waterloo*
- Tara Davenport, Research Fellow, Centre for International Law, National University of Singapore*
- Elie Jarmache, Special Adviser on the Law of the Sea, Member, Legal and Technical Commission, ISA
- Hannah Lily, Legal Adviser, Commonwealth Secretariat*
- Ruth Mackenzie, Reader in International Law, University of Westminster*
- Stephen E. Roady, Professor of the Practice of Law, Duke University School of Law
- Andres Rojas, Diplomat, Ministry of Foreign Affairs and Worship, Argentina*
- Dire Tladi, Professor, University of Pretoria, and Member, International Law Commission
- Guifang (Julia) Xue, Professor, KoGuan Law School, Shanghai Jiao Tong University*

*Contributing authors to the paper series.

About the Author

Guifang (Julia) Xue is chair professor of international law at KoGuan Law School, Shanghai Jiao Tong University. She serves as director of the Center for Polar and Deep Ocean Development and the Center for the Rule of Ocean Law Studies; chief expert and executive director, Shanghai Social Science Innovation Research Base; and executive director, Shanghai University Think Tank Research Base on National Marine Rights and Strategy.

In addition to the day-to-day institutional functions and responsibilities for funding management and project operation, Julia has research interests in the law of the sea in general and in areas related to the United Nations Convention on the Law of the Sea and state practice in particular. She chairs commissioned projects for drafting and revising national laws and regulations for conservation of marine living resources and protection of the marine environment, and she provides consultancy on policy making and practical issues for ocean-related agencies.

Julia is actively involved in academic activities by providing a platform for national and international symposia and conferences on law of the sea topics, polar issues and deep seabed mining law and policy. She has participated in international fora, contributed to committees as a professional adviser and serves as an executive member of academic associations. Julia also represents her institute as an observer in the ISA and contributes to the advancement of China's participation in the global governance of the maritime domain. She has published widely on relevant issues.

Acronyms and Abbreviations

ATCM	Antarctic Treaty Consultative Meeting
CHM	common heritage of mankind
CLC	International Convention on Civil Liability for Oil Pollution Damage
CRAMRA	Convention on the Regulation of Antarctic Mineral Resource Activities
HNS	hazardous and noxious substances
IAEA	International Atomic Energy Agency
IMO	International Maritime Organization
IOPC	International Oil Pollution Compensation
ISA	International Seabed Authority
ITLOS	International Tribunal for the Law of the Sea
LOSC	United Nations Convention on the Law of the Sea
OECD	Organisation for Economic Co-operation and Development
P&I	protection and indemnity
SDC	Seabed Disputes Chamber
SDRs	Special Drawing Rights
TOPIA	Tanker Oil Pollution Indemnification Agreement

Executive Summary

This paper reviews the legal and institutional frameworks associated with the use of compensation funds, insurance and other forms of security as part of the broader liability scheme for environmental damages. The compensation funds designed and implemented in the fields of oil pollution, nuclear accidents, hazardous and noxious substances (HNS) transport, and the Antarctic have been summarized and examined. Possible applicability of these compensation mechanisms to deep seabed mining activities is considered.

Introduction

Under the framework of the United Nations Convention on the Law of the Sea (LOSC),[1] there exist general provisions concerning environmental damage and legal liability. However, these provisions alone may not be the best model for potential environmental damage at issue, since the approach, without further refinement, leads to a number of liability gaps identified by the Seabed Disputes Chamber (SDC) in its Advisory Opinion on the Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area (the SDC Advisory Opinion 2011).[2] In particular, the SDC raises concerns about insolvent contractors and circumstances where harm arises from accidental or unforeseen circumstances and does not trigger the fault-based liability under the LOSC provisions.[3] To fill in the gaps of this nature, a supplementary mechanism may need to be established to ensure that "prompt and adequate compensation"[4] is available in cases where the compensation received from the contractor and its sponsoring state is not sufficient to cover the losses and restoration of the damage caused or if both the contractor and its sponsoring state carried out their responsibilities as required, but accidental damage still occurred, resulting in harm but no responsible party.

Such situations happen not only in deep seabed mining but also in other hazardous or ultra-hazardous activities.[5] In other hazardous or ultra-hazardous activities, the international community has developed sector-specific civil liability regimes, which provide mechanisms such as mandatory insurance and compensation funds as a means to provide adequate funds for compensation in the event of damages arising from risky activities. In developing liability rules for deep seabed mining, there is no doubt that the deep seabed regime could learn from these examples.

The deep seabed regime provides a solid foundation for the establishment of a compensation fund. For instance, article 235(3) of the LOSC makes reference to a compensation fund as a means of ensuring "prompt and adequate compensation," which provides legitimacy for the establishment of a compensation fund. Likewise, in the 2011 SDC Advisory Opinion, the SDC suggests that the International Seabed Authority (ISA) may establish a trust fund to cover liability gaps.[6] Although using distinct terms ("compensation" or "trust" funds), both article 235(3) and the Advisory Opinion refer to a fund, which suggests the establishment of some form of broader institutional mechanism.

Theoretically, a compensation fund's emphasis may be distinct from a trust fund's. The objectives of a compensation fund are to provide prompt, adequate and effective remedies to those who have suffered damages in accidents or certain lawful activities, including personal or property damage and environmental damage. Importantly, a compensation fund aims to mitigate harm and restore and reinstate the environment. Compensation funds may also serve as preventive measures, especially in the case of environmental emergencies. By contrast, an international trust fund is typically aimed at disbursing moneys to eligible recipients, i.e.,

1 *United Nations Convention on the Law of the Sea*, 10 December 1982, 1833 UNTS 397 art 139 (entered into force 16 November 1994) [*LOSC*]; *ibid*, Annex III, art 22.

2 SDC of the International Tribunal for the Law of the Sea (ITLOS), *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area* (2011), Advisory Opinion, No 17, 50 ILM 458 [SDC Advisory Opinion 2011].

3 *Ibid* at para 203, referencing the *LOSC*, *supra* note 1, art 139(2).

4 *LOSC*, *supra* note 1, art 235.

5 For general discussions of standards of liability in international environmental law, see Louise Angélique de La Fayette, "International liability for damage to the environment" in Malgosia Fitzmaurice, David M Ong & Panos Merkouris, eds, *Research Handbook on International Environmental Law* (Cheltenham, UK: Edward Elgar: 2010) 320; Alan Boyle, "Globalizing Environmental Liability: The Interplay of National and International Law" (2005) 17 J Envtl L 3; Philippe Sands & Jacqueline Peel, *Principles of International Environmental Law*, 3rd ed (New York: Cambridge University Press, 2012), c 17.

6 SDC Advisory Opinion 2011, *supra* note 2 at para 205.

assisting known or future beneficiaries in specified fields. Such beneficiaries are specified in the trust fund's terms of reference, usually by reference to a class or category. Furthermore, trust funds may also aim at providing assistance to developing states to comply with treaty obligations or to assist with development and poverty alleviation goals.[7]

Despite the reference to trust funds in the Advisory Opinion, the focus of this paper is on compensation funds as identified in article 235. In order to consider establishing a compensation fund, it is necessary to clarify a number of preliminary issues, including the sources of funding (i.e., who should contribute to this fund); the executor of this fund (i.e., who manages the fund); and substantive issues, such as scope of application, rights of recourse and admissibility of claims. In this regard, the compensation funds designed in connection with civil liability in the fields of oil and bunker fuel pollution, HNS pollution, nuclear damage and pollution of the Antarctic may provide references, albeit with some important differences, and even serve as models for the development of a deep seabed mining compensation regime.

Against this background, this paper starts with an overview of the existing compensation schemes in the aforementioned fields, followed by a description of the common elements of a compensation scheme. The paper then considers the application of the models used in existing civil liability schemes to deep seabed mining in the seabed area beyond national jurisdiction ("the Area"). By so doing, the paper seeks to provide guidance for the potential development of a compensation scheme for deep seabed mining in the Area.

Existing Compensation Schemes

Oil and Bunker Fuel Pollution

The civil liability and fund conventions that address pollution damage caused by spills of persistent oil from tankers are the most active and well-developed models among existing compensation schemes. Compensation for oil pollution damage caused by spills from oil tankers is regulated by three international instruments adopted under the auspices of the International Maritime Organization (IMO): the Brussels International Convention on Civil Liability for Oil Pollution Damage (1992 CLC);[8] the Brussels International Convention on the Establishment of an International Fund for Compensation of Oil Pollution Damage (1992 Fund Convention);[9] and the 2003 Protocol to the 1992 Oil Fund Convention (2003 Supplementary Fund Convention).[10] The 1992 CLC originated from the 1969 CLC, which has been the subject of three amending protocols, the most recent of which is the 1992 Liability Protocol. Likewise, the 1992 Fund Convention (which originated from the 1971 Fund Convention) was adopted to provide additional compensation for victims of oil pollution. In addition to the shipowners subject to the 1969 CLC, the 1992 Fund Convention provides that owners of oil cargo are to be held liable for some of the economic consequences of oil pollution.

The compensation scheme for oil pollution can be divided into three tiers. The first tier is

7 See Ilias Bantekas, "Trust Funds" in Rüdiger Wolfrum, ed, *Max Planck Encyclopedia of Public International Law* (Oxford, UK: Oxford University Press, 2015) 99; Chie Kojima, "Compensation Fund" (*ibid* at 519).

8 *Brussels International Convention on Civil Liability for Oil Pollution Damage*, 29 November 1969, 973 UNTS 3 (entered into force 19 June 1975) [*1992 CLC*]; amended by the *1976 Protocol*, 19 November 1976, 16 ILM 617 (1977) (entered into force 8 April 1981); *1984 Protocol*, 25 May 1984, 23 ILM 177 (1984) (not in force); *1992 Protocol*, 27 November 1992, IMO LEG/CONF.9/15 (entered into force 30 May 1996) [*1992 Protocol*]. The 1992 Liability Protocol replaced the 1984 Protocol and entered into force after it had been ratified by at least four states, each with not less than one million units of gross tanker tonnage: see article 13 (the 1984 Protocol required ratification by six such states). See International Oil Pollution Compensation (IOPC) Funds, *Liability and compensation for oil pollution damage: Texts of the 1992 Civil Liability Convention, the 1992 Fund Convention and the Supplementary Fund Protocol* (London, UK: IOPC, 2018) [IOPC Funds, *Liability and compensation*], online: <www.iopcfunds.org/fileadmin/IOPC_Upload/Downloads/English/WEB_IOPC_-_Text_of_Conventions_ENGLISH.pdf>; 124 states are parties.

9 *Brussels International Convention on the Establishment of an International Fund for Compensation of Oil Pollution Damage*, 18 December 1971, 1110 UNTS 57 (entered into force 16 October 1978) [*1992 Fund Convention*]; amended by *1976 Protocol*, 19 November 1976, 16 ILM 621 (1977) (not yet in force); *1984 Protocol*, 25 May 1984, (not yet in force); *1992 Fund Protocol*, 27 September 1992, IMO LEG/CONF.9/16 (entered into force 30 May 1996). The 1971 Fund Convention ceased to be in force on May 24, 2002, when the number of 1971 Fund member states fell below 25. The 1992 Protocol entered into force after ratification by eight states in which contributing importers had received a total of 450 million tonnes of oil in the preceding calendar year (the 1984 Protocol required eight states and 600 million tons). See IOPC Funds, *Liability and compensation*, *supra* note 8; 105 states are party.

10 *Protocol to the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage*, 16 May 2003, 92FUND/A.8/4, Annex I (entered into force 3 March 2005) [*2003 Supplementary Fund Convention*].

established by the 1992 CLC, which governs the liability of shipowners for oil pollution damage by laying down the principle of strict liability for shipowners and creating a system of compulsory liability insurance to be held by shipowners. In normal circumstances, the shipowner is entitled to limit its liability (insurance amount) to an amount linked to the tonnage of its ship.[11]

A second tier of compensation was established by the 1992 Fund Convention, which is funded by the receivers of oil cargo. The IOPC Fund 1992 was established under the 1992 Fund Convention to provide compensation for victims who do not obtain full compensation under the 1992 CLC. The 1992 Fund pays compensation when:

- the damage exceeds the limit of the shipowner's liability under the 1992 CLC;
- the shipowner is exempt from liability under the 1992 CLC; or
- the shipowner is financially incapable of meeting its obligations in full under the 1992 CLC and the insurance is insufficient to pay valid compensation claims. This fund is currently limited to provide 203 million Special Drawing Rights (SDRs) for any one incident.[12]

The third tier of compensation is provided by the protocol of the 2003 Supplementary Fund Convention, which established the International Oil Pollution Compensation Supplementary Fund (IOPC Supplementary Fund) to provide compensation for victims who do not obtain full compensation under the above two tiers. It currently limits the compensation to 750 million SDRs.[13]

By becoming party to the 1992 Fund Convention, a state becomes a member of the IOPC Fund 1992. The IOPC Fund 1992 and the IOPC Supplementary Fund are administered by separate intergovernmental organizations (the 1992 Fund and the Supplementary Fund), which have a joint Secretariat, based in London. The IOPC funds are financed by contributions levied on any person who has received in a calendar year more than 150,000 tons of crude oil or heavy fuel oil by sea transport in a 1992 Fund member state. The Supplementary Fund is financed in the same way as the 1992 Fund Convention.

In addition to these treaty-based instruments, the broader oil pollution compensation scheme includes private arrangements that indemnify the 1992 Fund Convention and 2003 Supplementary Fund Protocol, respectively, for compensation paid above a shipowner's limit of liability under the 1992 CLC.[14] The Small Tanker Oil Pollution Indemnification Agreement 2006 is a voluntary agreement between owners of small tankers (i.e., 29,548 gigatonnes or less) and their insurers, under which the maximum amount of compensation payable by owners of small tankers is increased to 20 million SDRs. It applies to all small tankers entered in a protection and indemnity (P&I) club that is a member of the International Group[15] and reinsured through the pooling arrangements of the group. The Tanker Oil Pollution Indemnification Agreement 2006 (TOPIA 2006) is another voluntary agreement that applies to all tankers entered in P&I clubs that are members of the International Group and reinsured through the pooling arrangements of the group. Under TOPIA 2006, the Supplementary Fund is indemnified for 50 percent of any amounts paid in compensation in respect of incidents involving tankers entered in the agreement.

While the oil pollution conventions covered liability for fuel spills from ships' bunkers for tankers, they did not address liability for fuel spills from ships' bunkers for other ships.[16] This shortcoming was addressed in 2001, when the IMO adopted the International Convention on Civil Liability for Bunker Oil Pollution Damage (2001 Bunker Convention).[17] Based on the 1992 CLC, the 2001 Bunker Convention makes shipowners strictly

11 IOPC Funds, *Liability and compensation*, *supra* note 8.

12 *Ibid*.

13 *Ibid*.

14 Agreements reproduced in IOPC Funds Assembly, "STOPIA and TOPIA", SUPPFUND/A/ES.2/7, 1 February 2006.

15 There are 13 principal underwriting associations that comprise the International Group. Each group club is an independent, non-profit-making mutual insurance association, providing cover for its shipowner and chartered members against third-party liabilities relating to the use and operation of ships. Each club is controlled by its members through a board of directors or committee elected from the membership. Clubs cover a wide range of liabilities, including loss of life and personal injury to crew, passengers and others on board, cargo loss and damage, pollution by oil and other hazardous substances, wreck removal, collision and damage to property. Clubs also provide a wide range of services to their members on claims handling, legal issues and loss prevention, and they often play a leading role in coordinating the response to, and management of, maritime casualties.

16 Sands & Peel, *supra* note 5 at 755.

17 *International Convention on Civil Liability for Bunker Oil Pollution Damage*, 23 March 2001, UKTS 47 (2012) (entered into force 21 November 2008) [*2001 Bunker Convention*].

liable for fuel spills.[18] Under the convention, states can limit liability in accordance with national or international regimes, such as the amended 1976 Convention on Limitation of Liability for Maritime Claims.[19] The convention also requires owners of ships registered by state parties to maintain insurance or other financial security equal to their limitation of liability provided in article 6. By limiting compensation for environmental damage to "reasonable measures of reinstatement," the 2001 Bunker Convention relies on the same approach to environmental damage as the 1992 CLC, limiting compensation for environmental damage to reasonable measures of reinstatement.[20]

The HNS

The International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea (1996 HNS Convention)[21] was adopted by an international conference organized by the IMO in London in May 1996. The objective of the HNS regime is to provide adequate, prompt and effective compensation for loss or damage to individuals, property and the environment arising from the carriage of HNS by sea. The HNS Convention covers both pollution damage and damage caused by other risks, for example, fire and explosion, including loss of life or personal injury, as well as loss of or damage to property. The convention has not entered into force due to signatory states not meeting the ratification requirements by 2009. A second international conference, held in April 2010, adopted a Protocol to the HNS Convention (2010 HNS Protocol) that was designed to address practical problems that had prevented many states from ratifying the original convention.[22] Once the 2010 HNS Protocol enters into force, the 1996 Convention, as amended by the 2010 Protocol, will be called the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 2010 (2010 HNS Convention).[23] Entry into force of the 2010 HNS Protocol requires accession by at least 12 states, meeting certain criteria in relation to tonnage and reporting annually the quantity of HNS cargo received in a state.[24] Currently, only Canada, Denmark, France, Germany, Greece, the Netherlands, Norway and Turkey have signed the 2010 HNS Protocol, subject to ratification.[25] However, progress toward the convention's entry into force has gathered pace over the past year.[26]

The regime established by the 2010 HNS Convention is largely modelled on the existing regime for oil pollution of the 1992 CLC and 1992 Fund Convention. The HNS Convention introduces strict liability for the shipowner and a system of compulsory insurance and insurance certificates. The HNS Convention will establish a two-tier system for compensation. Tier one will be covered by compulsory insurance taken out by shipowners, who would be able to limit their liability. In those cases where the insurance does not cover an incident, or is insufficient to satisfy the claim, a second tier of compensation will be paid from a fund consisting of contributions from the receivers of HNS. Contributions will be calculated according to the amount of HNS received by each party in the preceding calendar year.

The maximum amount payable by the HNS Fund in respect of any single incident is 250 million SDRs, including the sum paid by the shipowner or its insurer. The HNS Convention also provides a simplified procedure to increase the maximum amount of compensation payable under the convention in the future. If the total amount of the admissible claims does not exceed the maximum amount available for compensation, then all claims will be paid in full. Otherwise the payments will have to be prorated, i.e., all claimants will receive an equal proportion of their admissible claims.[27]

18 *Ibid*, art 3.

19 *Ibid*, art 6.

20 *Ibid*, art 1(9)(a).

21 *International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996*, 3 May 1996, (not entered into force) [*1996 HNS Convention*].

22 *Protocol of 2010 to the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996*, 30 April 2010, (not entered into force) [*2010 HNS Protocol*].

23 *International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 2010*, 30 April 2010, (not entered into force) [*2010 HNS Convention*].

24 *Ibid*, art 21.

25 See IOPC Funds, "Status of the HNS Convention and 2010 Protocol", online: <www.hnsconvention.org/status/>.

26 To encourage the entry into force of the 2010 HNS Convention, the IMO made significant efforts, such as hosting regular workshops; see IOPC Funds, "Implementation of the HNS Convention and the 2010 Protocol", online <www.hnsconvention.org/implementation/>.

27 *Ibid*, art 14.

Nuclear Installations

The liability regime for nuclear damage sets out three layers of arrangements for compensation.[28] The first layer relies on the operator's liability based on the 1960 Convention on Third Party Liability in the Field of Nuclear Energy, as amended by the Additional Protocols adopted in 1964, 1982 and 2004 (Paris Convention),[29] and the 1963 Vienna Convention on Civil Liability for Nuclear Damage, as amended by the Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage (Vienna Convention).[30] The Paris Convention was later built up by the 1963 Supplementary Convention on Third Party Liability in the Field of Nuclear Energy, as amended by the Additional Protocols of 1964, 1982 and 2004 (the 1963 Brussels Supplementary Convention), which establishes the second and third layers of compensation arrangements in addition to the operator's liability under the Paris Convention.[31]

The Paris Convention was adopted under the auspices of the Nuclear Energy Agency within the Organisation for Economic Co-operation and Development (OECD) and it is open to any OECD country. The Vienna Convention was adopted under the auspices of the International Atomic Energy Agency (IAEA) and is open to all states. Under these conventions, liability is channelled exclusively to the operators of the nuclear installations. Liability of the operator is absolute, i.e., the operator is held liable without proof of fault, yet liability is limited in amount. Moreover, there are also exceptions to liability. Compensation rights are extinguished under both conventions if an action is not brought within 10 years from the date of the nuclear incident. Longer periods are permissible if, under the law of the installation state, the liability of the operator is covered by financial security. National law may establish a shorter time limit, but not less than two years (the Paris Convention) or three years (the Vienna Convention) from the date the claimant knew, or ought to have known, of the damage and the operator liable. The operator must maintain insurance or other financial security for an amount corresponding to its liability. If such security is insufficient, the installation state is obliged to compensate the difference up to the limit of the operator's liability.

Jurisdiction over actions lies exclusively with the courts of the contracting party in whose territory the nuclear incident occurred. Judgments are enforceable in the territory of any party, and the convention is to be applied without discrimination as to nationality, domicile or residence. Following the Chernobyl nuclear accident in 1986, which highlighted the inadequacies of the liability regimes established by the Paris and Vienna Conventions,[32] the IAEA initiated the work on all aspects of nuclear liability with a view to establishing an improved comprehensive liability regime. In order to avoid simultaneous application of both conventions, a link was created between the two conventions by the 1988 Joint Protocol relating to the Application of the Vienna Convention and the Paris Convention,[33] effectively combining them into one expanded liability regime. Parties to the Joint Protocol are treated as though they were parties to both conventions, and a choice of law rule is provided to determine which of the two conventions should apply to the exclusion of the other with respect to the same incident.

In 1997, a Protocol amending the 1963 Vienna Convention was adopted[34] together with a new Convention on Supplementary Compensation (1997

28 Kojima, *supra* note 7.

29 The 1960 Convention on Third Party Liability in the Field of Nuclear Energy, entered into force on April 1, 1968, was amended by protocols in 1964, 1982 and 2004. The convention, as amended by the 1964 and 1982 protocols, has 16 parties. The 2004 protocol has not entered into force.

30 *Vienna Convention on Civil Liability for Nuclear Damage*, 21 May 1963, (entered into force 12 November 1977) [*1963 Vienna Convention*]; *Protocol*, 12 September 1997, (entered into force 4 October 2003) [*Vienna Protocol*]. The Vienna Convention and the Protocol are to be read and applied together as a single text and may be referred to as the "1997 Vienna Convention on Civil Liability for Nuclear Damage" [*1997 Vienna Convention*].

31 The 1963 Convention and the 1964 Additional Protocol entered into force on December 4, 1974. The 1982 Protocol entered into force on August 1, 1991. The 2004 Protocol has not yet entered into force.

32 For a full account of the Chernobyl nuclear accident of 1986, see World Nuclear Association, "Chernobyl Accident 1986", online: <www.world-nuclear.org/information-library/safety-and-security/safety-of-plants/chernobyl-accident.aspx>. See also Philippe J Sands, *Chernobyl: Law and Communication: Transboundary Nuclear Air Pollution – The Legal Materials* (Cambridge, UK: Cambridge University Press, 1988).

33 This Joint Protocol was adopted in 1988 and entered into force on April 27, 1992, creating a "bridge" between the Vienna Convention and the Paris Convention. The Joint Protocol ensures that only one of the two conventions will apply to any particular nuclear incident, and both the liable operator and the amount of its liability are determined by the convention to which the state, in whose territory the liable operator's installation is situated, is a party. The Joint Protocol applies not only to the original Paris and Vienna Conventions but also to any amendments to either convention that are in force for a contracting party to the Joint Protocol.

34 *Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage*, 12 September 1997, 36 ILM 1454 (1997) (entered into force 4 October 2003).

Supplementary Compensation Convention).[35] The Protocol sets the possible limit of the operator's liability at not less than 300 million SDRs. The Convention on Supplementary Compensation defines additional amounts to be provided through contributions by states parties on the basis of installed nuclear capacity and the UN rate of assessment. The convention is an instrument to which all states may adhere, regardless of whether they are parties to any existing nuclear liability conventions or have nuclear installations on their territories. The Protocol contains, *inter alia*, a better definition of nuclear damage (now also addressing the concept of environmental damage and preventive measures), extends the geographical scope of the Vienna Convention, and extends the period during which claims may be brought for loss of life and personal injury. It also provides for jurisdiction of coastal states over actions incurring nuclear damage during transport. Taken together, the two instruments substantially enhance the global framework for compensation well beyond that foreseen by existing conventions.

In the case that the amount of compensation made by the operator under the Paris Convention is not sufficient to cover the damage, the 1963 Supplementary Convention on Third Party Liability in the Field of Nuclear Energy, as amended by the Additional Protocols of 1964, 1982 and 2004 (Brussels Supplementary Convention), establishes the second and third layers of compensation arrangements in addition to the operator's liability under the Paris Convention. The second layer consists of public funds made available from the installation state. The third layer is made out of public funds that are provided by the installation state and all contracting parties to the convention after a nuclear incident. The total compensation available under the Paris Convention and the Brussels Supplementary Convention amounts to €1,500 million (article 3 of the 2004 Protocol, not yet entered into force).[36]

Antarctic

The Convention on the Regulation of Antarctic Mineral Resource Activities (1988 CRAMRA) was the first Antarctic treaty to address liability issues, although it is now unlikely to enter into force.[37] The 1991 Antarctic Environment Protocol dispensed with the 1988 CRAMRA's substantive liability rules. In their stead, the parties committed to develop new rules and procedures relating to liability for damage arising from activities taking place in the Antarctic and covered by the Protocol. While a group of legal experts, convened under article 16 of the 1991 Protocol, presented their final report to the twenty-second Antarctic Treaty Consultative Meeting (ATCM) in 1998, it was not until the twenty-eighth ATCM in 2005 that the parties finalized and adopted a restricted liability regime in a new Annex VI.[38]

Although neither set of liability rules are in force, they are worthy of close reading because they also apply to common areas established by the 1959 Antarctic Treaty, much like the deep seabed mining regime. The 1988 CRAMRA also set up provisions in relation to sponsorship and compliance with international environmental obligations. Under the 1988 CRAMRA, the sponsoring state would be subject to obligations to ensure compliance by the operator with all provisions of the convention, such as environmental impact assessment, monitoring, emergency response and liability. Additional obligations upon the sponsoring state would include notification to the commission of planned prospecting at least nine months in advance, notification of the cessation of prospecting and the provision of a general annual report.[39]

Under Annex VI to the 1991 Antarctic Environment Protocol, the standard of liability on operators is strict.[40] Where an environmental emergency results from the actions of two or more operators, there

35 *Convention on Supplementary Compensation for Nuclear Damage*, 12 September 1997, 36 ILM 1473 (1997) (not in force) [*Nuclear Damage Convention*].

36 Kojima, *supra* note 7.

37 *Convention on the Regulation of Antarctic Mineral Resource Activities*, 2 June 1988 (not entered into force) [*1988 CRAMRA*]. The government of New Zealand is the depository of the treaty. The convention was signed by 19 states, but no states have ratified it.

38 Antarctic Treaty Secretariat, *Final Report of the Twenty-Eighth Antarctic Treaty Consultative Meeting* (Buenos Aires: Antarctic Treaty Secretariat, 2005) at 61. The rules form Annex VI to the Protocol and are not yet in force.

39 *1988 CRAMRA*, *supra* note 37, arts 37(3), (7), (8).

40 *Protocol on Environmental Protection to the Antarctic Treaty*, 4 October 1991, 30 ILM 1455 (1991), Annex VI, art 6(3) (entered into force 14 January 1998) [*1991 Antarctic Environment Protocol*]. This money is to be paid directly to a fund set up under article 12, to the party of that operator or to the party that seeks reimbursement of costs pursuant to domestic law mechanisms under article 7(3). A party receiving such money shall make best efforts to make a contribution to the fund referred to in article 12, which at least equals the money received from the operator.

is provision for joint and several liability.[41] Annex VI also requires that operators maintain adequate insurance or financial security.[42] The provisions of Annex VI provide for both exemptions[43] and liability caps, which vary depending upon whether the event involves a ship, and in the case of events involving ships, varies according to the tonnage of the ship in question.[44]

This regime mandates that parties require their operators to respond to environmental emergencies. Where operators fail in this duty, they are liable to pay the costs of response actions taken by the parties. The scheme allows those parties who have taken response action to recover those costs from the operator.

Elements of Compensation Schemes

An international compensation fund primarily offers a solution for providing prompt, adequate and effective remedies to those who have suffered damages in the event of accidents or damages arising out of certain lawful, but risky, activities. International compensation funds play a significant role when civil liability regimes at the national level are insufficient to cover the damage, especially under the situation where there are funds that do not have sufficient coverage domestically or where it is difficult to access funds through domestic avenues. Although each compensation scheme sets its own rules and procedures, similarities exist through which the common elements can be identified.

Channelling

The issue of channelling liability is a matter of clarifying who is liable for the risk of damage caused by a particular activity. There may be many actors that contribute to the damage to a different extent. A common choice for many international liability regimes is to channel liability to one of the actors, excluding the liabilities of other actors. The advantage of this is that it allows victims to more easily identify from whom they should seek damages. The regimes regarding oil pollution, hazardous and noxious activities, and nuclear installation activities have all channelled liability to the operator, although compensation funding may be derived from other actors benefiting from the regime. Installation states remain liable for residual damages under the nuclear regime. Similarly, under the Antarctic Environment Protocol, states are not responsible for the failure of non-state operators "to the extent that the Party took appropriate measures within its competence, including the adoption of laws and regulations, administrative actions and enforcement measures, to ensure compliance with this Annex."[45] The CRAMRA regime not only channels liability to the operator but also attributes residual liability to the sponsoring state. It stipulates that "[d]amage of the kind referred to in paragraph 2 above which would not have occurred or continued if the Sponsoring State had carried out its obligations under this Convention with respect to its Operator shall, in accordance with international law, entail liability of that Sponsoring State. Such liability shall be limited to that portion of liability not satisfied by the Operator or otherwise."[46]

It is said that this provision provides an important innovation in the manner by which it establishes "a link between civil liability and state liability in a unique way."[47]

Standard of Liability

The issue of the appropriate standard of liability under the deep seabed regime is addressed in another paper in this series.[48]

Under civil liability regimes, the potential options of the standard of care include fault, strict liability and absolute liability. However, it has been noted that "[t]here is probably no single basis of international responsibility, applicable in all

41 *Ibid*, Annex VI, art 6(4). However, it is open to the operator to refute the operation of this provision by establishing that only part of the environmental emergency results from its activities.

42 *Ibid*, art 11.

43 *Ibid*, art 8.

44 *Ibid*, art 9(1).

45 *Ibid*, art 10.

46 *1988 CRAMRA*, *supra* note 37, art 8(3).

47 Sands & Peel, *supra* note 5 at 761.

48 Neil Craik, "Determining the Standard for Liability for Environmental Harm from Deep Seabed Mining Activities", CIGI, Liability Issues for Deep Seabed Mining Series, 23 October 2018.

circumstances, but rather several, the nature of which depends on the particular obligation in question."[49] The obligation in question may distinguish between dangerous activities that are likely to cause serious environmental damage and other activities. The former activities usually adopt a strict or absolute obligation, such as in the case of oil pollution, HNS transportation, nuclear installations and the Antarctic. A strict liability standard serves to provide an incentive to operators to adopt special precautions when engaging in such activities. Nevertheless, it should be noted that international law remains inconclusive in this regard. For instance, the decisions of international tribunals in the *Trail Smelter* case, the *Corfu Channel* case, the *Lac Lanoux* case and the *Nuclear Tests* cases can be interpreted to support conclusions of absolute/strict liability or fault-based liability. The SDC Advisory Opinion 2011 identifies that the current wording of the LOSC rules out strict liability in relation to sponsoring states.[50]

Damages

Compensation schemes are required to identify the range of damages[51] covered by the scheme, which generally include both those caused to persons or property and those caused to the environment. Environmental damages are often limited to the costs of measures of reinstatement actually taken and apply to actions taken within areas of national jurisdiction. Currently, with the exception of the Antarctic, no international liability mechanisms exist for environmental damage that has occurred beyond areas of national jurisdiction. In the case of damage to the commons environment, an international fund would function to mitigate harm and restore and reinstate *res communis* (common property).

Compensation Schemes

A central motivating factor in the creation of compensation schemes is to avoid situations where the victims of environmental harm cannot get prompt, adequate and effective remedies due to the unavailability of sufficient funds. In this situation, a compensation scheme addresses this problem by creating mechanisms through mandatory insurance and compensation funds to ensure that there is a pool of available funds that can be tapped. An international compensation fund can function in a number of situations, such as where the civil liability system at the national level cannot provide sufficient compensation; where the liable person is incapable of providing compensation; where the person who caused the damage cannot be identified; or where a shared interest is damaged and there is no actual damage caused to a specific person.[52]

From the precedents cited above, most compensation schemes could be designed with at least two tiers, which may provide a good model for other compensation schemes. The first tier is that the operators pay for the losses or restoration costs, with caps on liability, and usually from compulsory insurance. Where the victims cannot obtain sufficient compensation from the first tier, they may turn to the second tier, which is often a compensation fund. In some circumstances, there may be more than one fund with different maximal amounts of compensation, such as the oil pollution compensation scheme. It should be noted that the establishment of compensation funds raises several critical issues that must be resolved: first, how to guarantee the first tier, which involves insurance; second, determining which entities should fund the second tier, which involves compensation funds; and third, establishing the appropriate institutional mechanism to ensure efficient and effective management of those funds.

Turning to the first issue, it is crucial to consider whether it would be advisable to require some form of mandatory insurance and whether the advantages of establishing such a system would outweigh its practical difficulties. Such an obligation serves the main purpose of ensuring solvency. This implies that an obligation to show, at all times, that in the event of pollution damage, adequate funds are made available to the victims, for instance, by way of compulsory insurance or by providing other types of financial security. In effect, the provisions for "compulsory insurance" in international civil liability conventions not only require the persons involved to purchase insurance policies and provide the evidence that they have done so, but also specify the insurance requirements relating to specified liabilities, the

49 Robert Jennings & Arthur Watts, eds, *Oppenheim's International Law*, 9th ed (Oxford, UK: Oxford University Press, 1992) vol 1 at 509.

50 SDC Advisory Opinion 2011, *supra* note 2 at para 189.

51 See Ruth Mackenzie, "Liability for Environmental Harm from Deep Seabed Mining Activities: Definition of Compensable Environmental Damage" CIGI, Liability Issues for Deep Seabed Mining Series, [forthcoming 2019].

52 Kojima, *supra* note 7.

coverage amounts and the insurer. However, as a commercial action, whether the market can absorb the additional price involved in the proposed insurance scheme must be considered. This will depend on the ability of the insurer to accurately quantify risks and the commercial attractiveness of the cost of insurance. Before 1969, insurance for any liability was an internal matter for shipowners, and the shipowners' liability insurance for oil pollution damage was not made compulsory until the advent of the 1969 CLC.

The second issue of identifying the potential contributors to a compensation fund is an important element of such a scheme because it may determine whether a compensable objective can be realized. The fund could be established through voluntary contributions by any state or person. However, it is necessary to specify compulsory contributors to guarantee the sources of a fund. The compulsory contributors may be, for example, receivers of oil or HNS in certain amounts in one calendar year,[53] nuclear installation states or even contracting parties to a convention.

Another crucial element of a compensation scheme is the administration of the fund. A compensation fund requires a sound governance structure, either by establishing an independent agency or granting the authority to an existing relevant agency. Whichever model is chosen, the agency's mandate should, at least, include managing the claims, collecting funds and calculating requirements. Typically, the administrator has no role in the adjudication of claims, which is a mandate of domestic courts or other arbitration processes. The IOPC Fund, which has legal personality under the laws of each party,[54] comprises an Assembly, a Secretariat and an Executive Committee.[55] The Secretariat strives to provide prompt payment of compensation to victims of oil pollution damage. In the great majority of cases, claims are settled out of court. The director has the authority to settle claims and pay compensation up to predetermined levels. However, for incidents involving larger claims, or where a specific claim gives rise to a question of principle that has not previously been decided by the governing bodies, the director needs approval from the relevant governing body of the fund in question. In addition, the legal proceedings that arise from those cases where it has not been possible to reach an out-of-court settlement can take several years to resolve. The daily work of the Secretariat therefore focuses both on processing claims relating to recent incidents and also finding resolutions to claims or outstanding issues relating to incidents that may have occurred several years earlier.[56]

The Assembly, in which all parties to the convention are members, has overall responsibility for the administration of the fund and for the proper execution of the convention. Its functions include approving the settlement of claims, taking decisions in respect of distributions under article 4(5) and provisional payments, and electing the Executive Committee.[57] There are 15 members of the Executive Committee, elected on the basis of equitable geographic distribution, including parties particularly exposed to the risks of oil pollution and having large tanker fleets, and approximately one-half from those parties in whose territory the largest quantities of oil were received.[58] The functions of the Executive Committee include approving the settlement of claims and giving instructions to the director.[59]

53 The 1992 Fund is financed by contributions levied on any person who has received in one calendar year more than 150,000 tonnes of crude oil and/or heavy fuel oil (contributing oil) in a member state of the 1992 Fund. Annual contributions to the Supplementary Fund are made on the same basis as contributions to the 1992 Fund. However, the contribution system for the Supplementary Fund differs from that of the 1992 Fund in that, for the purpose of paying contributions, at least one million tonnes of contributing oil are deemed to have been received each year in each member state. Compensation payments made by the HNS Fund will be financed by contributions levied on persons who have received, in a calendar year, contributing cargoes after sea transport in a member state in quantities above the thresholds (20,000 tonnes) laid down in the HNS Convention. For each contributor, the levies will be in proportion to the quantities of HNS received by that person each year. For the purpose of the contribution system, not only imported cargoes but also cargoes received after sea transport between ports in the same state are taken into account. However, cargo is not considered to be contributing cargo so long as it is in transit. That is, provided that the cargo is not imported, consumed or transformed, transhipment does not lead to a requirement for the payment of a contribution to the HNS Fund.

54 *1992 Fund Convention*, *supra* note 9, art 2(2).

55 *Ibid*, arts 16–30. The 1992 Protocol discontinued the Executive Committee: see 1992 Protocol, *supra* note 8, arts 17–24.

56 IOPC Funds, "Claims", online: <www.iopcfunds.org/about-us/what-we-do/claims/>.

57 *1992 Fund Convention*, *supra* note 9, arts 17, 18. Decisions of the Assembly and the Executive Committee are generally taken on the basis of a simple majority of those present and voting, with special provision for certain decisions to be taken on the basis of a three-fourths or two-thirds majority of those present (*ibid*, arts 32, 33).

58 *Ibid*, art 22.

59 *Ibid*, art 26.

Table 1: Value of One SDR

	US Dollar	Euro	British Pound	Japanese Yen	Chinese Yuan
2001–2005	0.5770 (44%)	0.4260 (31%)	0.0984 (11%)	21.0 (14%)	
2006–2010	0.6320 (44%)	0.4260 (31%)	0.0903 (11%)	18.4 (11%)	
2011–2015	0.6800 (41.9%)	0.4100 (34%)	0.1110 (11.3%)	12.1000 (9.4%)	
2016–2021	0.58252 (41.73%)	0.38671 (30.93%)	0.085946 (8.09%)	11.900 (8.33%)	1.0174 (10.92%)

Source: IMF, *SDR Review*.

Limits on Liability

In most cases, no matter whether it is strict liability or fault liability, there are limits on liability, including liability caps and limitation periods. The 1992 CLC stipulates that the shipowner is normally entitled to limit its liability to an amount that is linked to the tonnage of its ship as follows: (a) 4,510,000 units of account for a ship not exceeding 5,000 units of tonnage; (b) for a ship with a tonnage in excess thereof, for each additional unit of tonnage, 631 units of account in addition to the amount mentioned in subparagraph (a), provided, however, that this aggregate amount shall not, in any event, exceed 89,770,000 units of account.[60] However, the scheme imposes no limit to liability if the shipowner intended to cause damage or acted recklessly with knowledge that damage would result.[61] Similarly, article 9(1) of the 2010 HNS Convention (consolidated texts) limits the shipowner's liability to specified amounts,[62] while article 9(2) imposes no limit to liability if the shipowner intended to cause damage or acted recklessly with knowledge that damage would result. The other schemes discussed also contain liability caps, as discussed above.

It is clear that most shipowners take out P&I insurance to meet their liabilities for oil-pollution risks. As far as P&I clubs are concerned, they are not willing to cover oil pollution without limitation. They have consistently stressed that they are unable to provide financial security for unlimited amounts, and that a fixed limit is needed in any insurance certificate.[63] Accordingly, the concept of "capacity of insurance" is transformed into "limit of insurance," although each is different from the other. In other words, even if the insurance industry is capable of satisfying the liability insurance requirement without limitation, it prefers to impose a limitation on insurance coverage.

Exclusions

The 1992 CLC establishes joint and several liability for damage that is not "reasonably separable" and allows a limited number of exceptions, including war and hostilities, intentional acts, governmental negligence and contributory negligence, and it extinguishes all other claims for compensation.[64]

The shipowner is exempt from liability under the HNS Convention only if it proves that the damage resulted from an act of war, hostilities, civil war, insurrection or a natural phenomenon of an exceptional, inevitable and irresistible character; the damage was wholly caused by an act or omission done with the intent to cause damage by a third party; the damage was wholly caused by the negligence or other wrongful act of any government or other authority responsible for the maintenance of lights or other navigational aids in the exercise of that function; or the failure of the shipper or any other person to furnish information concerning the hazardous and noxious nature of the substances shipped has either caused the damage, wholly or partly, or has led the owner not to obtain insurance, provided that neither the shipowner, nor

60 Since SDRs are mentioned several times in this paper, Table 1 shows the value of one SDR in different currencies to illustrate the levels of these limits in relation to the risks.

61 *1992 CLC*, *supra* note 8, art V(1)(2).

62 The limitations for any one incident are 10 million SDRs for ships under 2,000 units of tonnage; an additional 1,500 SDRs for each unit of tonnage between 2,001 and 50,000; and an additional 360 SDRs for every unit of tonnage over 50,000, provided that the total limit on liability does not exceed 100 million SDRs.

63 See IMO LEG 74/4/2 of 9 August 1996.

64 *1992 CLC*, *supra* note 8, arts III(2), (3), IV.

its servants or agents knew or ought reasonably to have known of the hazardous and noxious nature of the substances shipped. If the shipowner proves that the damage resulted wholly or partly either from an act or omission done with intent to cause damage by the person who suffered the damage or from the negligence of that person, the shipowner may be exonerated wholly or partially from its obligation to pay compensation to such person.[65] Exemptions from liability are specified, including for an environmental emergency resulting from response action taken or authorized by a state to the extent that such response action was reasonable in all the circumstances.[66]

Processing of Claims: Adjudication and Enforcement

With regard to adjudication, two issues are worth noting. First, the scheme identifies limitation periods within which claims must be brought. Second, the scheme must specify the court that has the jurisdiction over claims brought under the scheme.

Conventions regulate different time limits for bringing actions for various types of incidents and damages. The 1992 CLC and 1992 Fund Convention, as well as the 2001 Bunker Convention provide that actions should be filed with the court within three years from the date when the damage occurred and, in any case, no more than six years from the date of the incident that caused the damage.[67] The 2010 HNS Protocol provides for a three-year limitation period from when the person suffering the damage knew or ought reasonably to have known of the damage.[68] The Protocol also provides that the time limit must be within 10 years. The Convention on Supplementary Compensation for Nuclear Damage and the 1963 Vienna Convention set up a 10-year limitation for the right of compensation since the incident,[69] but provide the competent court with discretion to extend such period. These conventions set up different periods of limitation for different types of damage and also establish a 20-year limit for actions concerning stolen, lost, jettisoned or abandoned materials.[70] The Convention on Supplementary Compensation for Nuclear Damage provides that claims concerning loss of life or personal injury should also be filed within 10 years from the date of the incident.[71] Both the 1960 Paris Convention and 1963 Vienna Convention set up limitations of 10 years from the date of the nuclear incident. Both the 1997 Vienna Protocol and the 2004 Paris Protocol adjust the limitation period for the rights of compensation with respect to loss of life and personal injury to 30 years.[72]

In relation to jurisdiction over the claims, the 1992 CLC provides that claims shall be brought in the domestic courts of the state where damage has occurred. Those same courts have exclusive competence over any action against the fund under article 4 of the 1992 Fund Convention in respect of the same damage.[73] Where that court is in a state that is not a party to the 1992 Fund Convention, the claimant may bring the case before the court where the fund is headquartered (London) or any court of a party to the 1992 Fund Convention competent under article IX of the 1992 CLC.[74] The conventions concerning nuclear damage provide that jurisdiction over actions shall lie only with the courts of the contracting party in whose territory the nuclear incident occurred.[75] Under the conventions on the carriage of HNS, jurisdiction lies only with the courts of any contracting state or states where an incident has caused pollution damage in the territory of one or more contracting states or where preventive measures have been

65 *2010 HNS Convention*, *supra* note 23, arts 7(2), (3).

66 *1991 Antarctic Environment Protocol*, *supra* note 40, art 8(2).

67 *1992 CLC*, *supra* note 8, art 8; *1992 Fund Convention*, *supra* note 9, art 6; *2001 Bunker Convention*, *supra* note 17, art 8.

68 *2010 HNS Protocol*, *supra* note 22, art 37.

69 *Nuclear Damage Convention*, *supra* note 35, Annex, art 9; *1963 Vienna Convention*, *supra* note 30, art VI.

70 *Nuclear Damage Convention*, *supra* note 35, Annex, art 9; *1963 Vienna Convention*, *supra* note 30, art VI.

71 *Nuclear Damage Convention*, *supra* note 35, Annex, art 9.

72 *1997 Vienna Convention*, *supra* note 30, art 8; *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*, 12 February 2004, art 8 [*2004 Paris Protocol*].

73 *Ibid*, art 7(3).

74 *Ibid*.

75 *2004 Paris Protocol*, *supra* note 72, art 13; *1963 Vienna Convention*, *supra* note 28, art XI.

taken to prevent or minimize pollution damage in such territory.[76] When an incident occurs outside the territory of the contracting parties or the place of the incident cannot be determined with certainty, jurisdiction over such actions shall lie with the courts of the contracting party in whose territory the nuclear installation of the operator liable is situated.[77] Under the Antarctic Environment Protocol, disputes involving non-state operators are to be brought in the domestic courts that have jurisdiction over the operator. Actions against state operators are resolved through the ATCM[78] and, in the event of a disagreement, under the enquiry procedures established by the parties.[79]

The 1992 Fund Convention also sets forth rules concerning the effect of judgments on the fund, the recognition and enforcement of judgments, and rights of recourse and subrogation.[80] Most of the conventions regulate that any decision and judgment concerning the distribution made in good faith should not be subject to further forms of review and should be enforceable in each contracting state. The merits of a claim given in the judgment are not to be subject to further proceedings.[81]

Applicability to Deep Seabed Mining

While the compensation schemes discussed in this paper all have a similar architecture, each must respond to the particularities of the activity with which it is concerned. In determining the possible form of compensation schemes in relation to deep seabed mining, account must be taken of the unique features of that activity and the surrounding regulatory requirements. For example, the Area and its resources are the common heritage of mankind (CHM), with mining activities permitted by the ISA occurring in the Area. The structure involves a variety of different participants in both operational and oversight roles, as well as specific risks, all of which should be given special consideration.

Channelling

There are a variety of actors involved either directly or indirectly in activities in the Area, including the contractor and subcontractors (if any), the sponsoring state and the ISA. Liabilities arising from mining activities in the Area could be primarily channelled to the contractor and subsequently to its sponsoring state. In accordance with Annex III, article 22 of the LOSC, the contractor shall have responsibility or liability for any damage arising out of wrongful acts in the conduct of its operations. Furthermore, without prejudice to the rules of international law and Annex III, article 22, damage caused by the failure of a state party or international organization to carry out its responsibilities under Part XI of the LOSC entails liability, unless it has taken all necessary and appropriate measures to secure its sponsored contractor's effective compliance. In addition, the ISA is liable for any damage arising out of its own wrongful acts in the exercise of its powers and functions.[82]

In terms of channelling, the key question is whether liability ought to be focused on one or more of these actors to the exclusion of others. As discussed above, the approach in other schemes has been to focus on the operator, but there are occasions where the sponsoring state may still retain liability in relation to its own activities.[83]

Standard of Liability

The principle decision to be made here is whether a liability scheme should follow a no-fault (strict) or fault-based standard for the imposition of liability. Given that liability may be imposed

76 *1992 CLC*, *supra* note 8, art IX; *1992 Fund Convention*, *supra* note 9, art 7(1); *2001 Bunker Convention*, *supra* note 17, art 9(1); *1996 HNS Convention*, *supra* note 21, art 38(1); *2004 Paris Protocol*, *supra* note 72, art 13(c); *Convention on Supplementary Compensation for Nuclear Damage*, 12 September 1997, art XIII(3) (entered into force 15 April 2015).

77 *2004 Paris Protocol*, *supra* note 72, art 13(c); *1997 CSC*, *supra* note 75, art XIII(3).

78 *1991 Antarctic Environment Protocol*, *supra* note 40, Annex VI, art 7(5)(b).

79 *Ibid*, Annex VI, art 7(5)(a).

80 *1992 Fund Convention*, *supra* note 9, arts 7(6), 8, 9.

81 *1992 CLC*, *supra* note 8, art 10; *1992 Fund Convention*, *supra* note 9, art 8; *2003 Supplementary Fund Convention*, *supra* note 10, art 8; *2001 Bunker Convention*, *supra* note 17, art 10; *1996 HNS Convention*, *supra* note 21, art 40; *1963 Vienna Convention*, *supra* note 30, art XII; *Vienna Protocol*, *supra* note 30, art 14.

82 *LOSC*, *supra* note 1, Annex III, art 22.

83 This issue is addressed in detail in Tara Davenport, "Responsibility and Liability for Damage Arising Out of Activities in the Area: Attribution of Liability", CIGI, Liability Issues for Deep Seabed Mining Series, 10 January 2019.

on both contractors and sponsoring states (as well as the ISA), it is important to consider the potential standard of each respectively. As this issue was addressed in another paper in this series,[84] the discussion here is brief.

Civil Liability

Annex III, article 22 of the LOSC provides that "the contractor shall have responsibility or liability for any damage arising out of wrongful acts in the conduct of its operations, accounting being taken of contributory acts or omissions by the Authority....Liability in every case shall be for the actual amount of damage." This wording indicates that the contractor incurs fault liability, since the contractor is liable only when it conducts wrongful acts and any damage that occurs can be attributed to its wrongful acts. The issue of what constitutes damage is addressed elsewhere, but the wording raises the question of whether there is a threshold of damage that triggers liability and allows claims to be brought. State practice, decisions of international tribunals and the writings of jurists suggest that environmental damage must be "significant" or "substantial" (or possibly "appreciable," which suggests a marginally less onerous threshold) for liability to be triggered. Then, the question here is, what and to what extent constitutes "damage." A second issue that arises is what constitutes "wrongful acts" in this context? In particular, can the rules of the ISA or a sponsoring state specify a stricter form of liability?

As noted, the contractor incurs fault liability under the framework of the LOSC. The ISA shall make rules, regulations and procedures under the framework of the LOSC and cannot exceed its competence as granted under the LOSC. It is noteworthy that Annex III, article 21(3) of the LOSC provides sponsoring states with the authority to impose stricter standards: "No State Party may impose conditions on a contractor that are inconsistent with Part XI. However, the application by a State Party to contractors sponsored by it, or to ships flying its flag, of environmental or other laws and regulations more stringent than those in the rules, regulations and procedures of the Authority adopted pursuant to article 17, paragraph 2(f), of this Annex shall not be deemed inconsistent with Part XI."

However, it ought to be recognized that a number of contractors are state-owned entities or even state governments, which may not be willing to increase the burden on themselves in the form of no-fault liability. Other contractors that are private companies may turn to other sponsoring states with lower standards in their national laws, raising a potentially difficult problem of how to incentivize sponsoring states to use more stringent laws and regulations than those in the rules, regulations and procedures of the ISA.

State Liability

State liability for deep seabed mining activities in the Area is governed by the rules as set out in the LOSC, as well as those in general international law. The standard of care required by the provisions of the LOSC was considered by ITLOS in its 2011 Advisory Opinion. In relation to these provisions, the Tribunal held "the liability of sponsoring States arises from their failure to carry out their own responsibilities and is triggered by the damage caused by sponsored contractors"[85] and that there "must be a causal link between the sponsoring State's failure and the damage, and such a link cannot be presumed."[86] The Tribunal rejected the argument that the sponsoring state was subject to strict liability under article 139(2) of the LOSC, noting that "liability for damage of the sponsoring State arises only from its failure to meet its obligation of due diligence. That rules out the application of strict liability."[87]

With regard to liability in general international law, Yoshifumi Tanaka notes pointedly:

> Given that a state may be held liable even if no material damage results from its failure to meet its international obligations under customary international law, the liability of a sponsoring state constitutes an exception to the customary law rule on liability. In the [Seabed Disputes] Chamber's view, if the sponsoring state has failed to fulfil its obligation but no damage has occurred, the consequences of such a wrongful act are determined by customary international law. This means that under customary international law,

84 Craik, *supra* note 48.

85 SDC Advisory Opinion 2011, *supra* note 2 at para 184.

86 *Ibid*.

87 *Ibid* at para 189.

a sponsoring state may be liable if it breaches its obligation where no damage has been caused. It seems to follow that if a sponsoring state is not liable under the deep seabed regime of the UNCLOS, it may be liable at the customary law level.[88]

Funds

Insurance

Compulsory insurance is helpful to guarantee that a responsible entity has the financial ability to compensate victims or the environment when damage occurs. The deep seabed regime already contains requirements regarding compulsory insurance as part of the standard contract provisions in the exploration regime.[89]

In order to understand the implication of liability for the insurance industry, it is important to have an idea of the basic framework of the marine insurance market. Given the fact that the operator is required to obtain compulsory insurance or other financial security, it is important to consider whether there is "an adequate supply of suitable products"[90] and the capacity of insurance to cover potential losses. In case the current market is not ready or is not willing to support and provide insurance products, then requiring insurance as part of a wider liability scheme will not be helpful. There may be a shortage of available insurance.[91] Thus, it is critical to review the types of available marine insurance and their coverage. Such a review will help the ISA to understand the structure of the current marine insurance market and set the stage for the discussion of compulsory insurance and other types of financial security available for liability in other practice.

Furthermore, the capacity of insurance also needs special consideration. The capacity of insurance is different from its availability. The availability of insurance may guarantee that the liability insurance for a particular type of risk is available. However, it may occur that the available insurance cannot adequately supply the whole amount of required insurance, i.e., the capacity of insurance is insufficient.[92] In practice, insurance capacity usually includes the capacity of direct insurance arrangements and reinsurance. Reinsurance is a traditional method for the insurer to protect itself against unexpected or excessive losses. It has been indicated that there would hardly be any liability insurance available at all for commercial risks without reinsurance.[93] This might be an exaggeration, but it is true that the insurer can pass on a part of the risk to the reinsurer through reinsurance, which, to some extent, alleviates the insurance burden and increases the capacity of insurance. However, the capacity of reinsurance is also limited, especially in response to some risks that may involve large-scale liabilities.[94] In other words, even if the insurance industry is capable of satisfying liability insurance requirements without limitation, it prefers to impose a limitation on insurance coverage. The extent of insurance capacity influences the liability cap amounts, if any.

Funding a Scheme

Funding a scheme is a crucial element of any compensation scheme. An international fund is normally financed either compulsorily or voluntarily by entities, whether governments or public and/or private persons, who create the potential risk of causing the damage. Based on this theory, the contractors and sponsoring states should be the main actors funding the deep seabed mining scheme. Besides, the regulators may be

88 Yoshifumi Tanaka. "Obligations and Liability of Sponsoring States Concerning Activities in the Area: Reflections on the ITLOS Advisory Opinion of 1 February 2011" (2013) 60:2 Nethl Intl L Rev 205–30 [footnotes omitted].

89 ISA, *Decision of the Council of the International Seabed Authority relating to amendments to the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area and related matters*, ISBA/19/C/17 (2013), Standard Clauses, s 16.4.

90 Mark Wilde, *Civil Liability for Environmental Damage* (New York: Kluwer Law International, 2002) at 296.

91 W Pfennigstorf, "Policy Considerations for Insurers Engaging in Environmental Liability Insurance" in H Bocken & D Ryckbost, eds, *Insurance of Environmental Damage* (Brussels: Story-Scientia, 1991) 269 ("the availability of insurance coverage has become a factor of increasing importance in the development of the law of liability. This has become evident not only in decisions made by courts, but also in the process of legislation, especially with respect to environmental liability. There is strong reluctance to act without first obtaining a commitment from the insurance industry to the effect that coverage commensurate to the intended new level of liability will be available" at 273).

92 Ling Zhu. *Compulsory Insurance and Compensation for Bunker Oil Pollution Damage*, 1st ed (New York: Springer, 2006) at 122.

93 W Pfennigstorf, "Limited Insurability of Unlimited Liability: Serial Claims, Aggregates and Alternatives: The Continental View" in Ralph P Kröner, ed, *Transnational Environmental Liability and Insurance* (London, UK: Graham & Trotman, 1993) 159 at 161.

94 See NJ Colton, "The Underwriting of Oil Pollution Risks" in Colin M de la Rue, ed, *Liability for Damage to the Marine Environment* (London, UK: Lloyd's of London Press, 1993) 149 ("the reinsurer might pay for the first and possibly the second oil pollution loss, but thereafter a company or syndicate writing the insurance would almost certainly be unprotected" at 152).

possible contributors as well because they may be contributing to risk creation through their approval and oversight activities. Beneficiaries may be contributors as well, including the contractors and, more broadly, states, including developed states and developing states. In this regard, it is noteworthy that the area and its resources are the CHM; as such, the ISA is called upon to provide for the equitable sharing of financial and other economic benefits derived from activities in the Area through any appropriate mechanism, on a non-discriminatory basis, in accordance with article 160, paragraph 2(f)(i).[95] Thus, the contractors are not the only beneficiaries of deep seabed mining activities. All human beings could benefit through the ISA's benefit sharing. Also, the principle of CHM not only means common benefits but also means common obligation of environmental protection in the process of deep seabed mining. Thus, the contractors should not be the only contributors to the compensation funds; all the states that receive benefits should contribute. This is not to suggest that every actor should make the same contributions to the funds. The contractors should be the main contributors, and all the states should provide supplementary contributions.

Consideration of contributions to a compensation fund will need to account for the specific requirements under the payment mechanisms, including any rules respecting first movers.

Administration

Establishing an independent agency or granting the authority to an existing relevant agency are the likely options of administering the compensation fund for deep seabed mining activities. Based on the current arrangements for deep seabed mining, granting the ISA the administrative mandate to manage claims, collect funds and calculate requirements may be cost-effective, insofar as it would not require the creation of a new entity and could take advantage of existing decision-making structures. Adjudication of claims will depend on the status of the claimants (whether state or non-state), but could occur through both existing international adjudication bodies as identified in article 187 of the LOSC or through domestic courts in a manner similar to other civil liability regimes.

95 *LOSC*, *supra* note 1, art 140(2).

Limits

As noted, liability regimes generally include caps to liability, although these are highly variable in amount and structure. The driving factors relate to the predicted quantum of potential damages, as well as the capacity of insurers or other mechanisms to fund the predicted liabilities. Unlimited liabilities are likely to be viewed as unfair and impractical by operators and insurers.

Exclusions

Whether the liability regime for deep seabed mining is fault-based or not, the designated regime may need to specify certain exclusions,[96] which would exempt parties from liabilities. Typically, exclusions in other regimes have included damages arising from:

- war and hostilities;
- intentional acts;
- governmental negligence and contributory negligence;
- "a natural phenomenon of exceptional, inevitable, unforeseeable and irresistible character;"[97] or
- compliance with a compulsory measure of a public authority.[98]

Conclusion

International compensation funds should certainly serve as remedial measures for those who have actually suffered damage. In addition, they may also be employed as preventive measures — especially in the case of environmental emergencies. The compensation funds in the fields of marine oil pollution, transportation of hazardous substances, nuclear damage and the Antarctic may serve as models for developing a liability regime for deep seabed mining. No matter what the compensation

96 For a detailed discussion, see Craik, *supra* note 48.

97 *Basel Protocol on Liability and Compensation for Damage Resulting from Transboundary Movements of Hazardous Wastes and their Disposal*, 10 December 1999, art 4(5) (not yet entered into force) [*Basel Protocol*]; *2010 HNS Convention*, *supra* note 23, art 7(2)(a).

98 *Basel Protocol*, *supra* note 97, art 4(5).

scheme is, it should at least include some common elements such as standard of liability, insurance, processes on how to fund and manage this scheme, limits on liability, exclusions and processing of claims. With respect to deep seabed mining in the Area, one of the main characteristics is that the Area and its resources are considered the CHM, and the ISA is required to act on behalf of humankind. Thus, compared with other activities, there exist some particular issues concerning deep seabed mining activities in the Area that need to be treated with special consideration.

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