NUS Centre for International Law

REPORT OF THE INTERNATIONAL CONFERENCE

High Seas Governance: Gaps and Challenges

24 to 25 April 2017, Singapore

The Centre for International Law (CIL) of the National University of Singapore (NUS) organised an International Conference on High Seas Governance: Gaps and Challenges on 24–25 April 2017 at the Orchard Parade Hotel, Singapore. The Conference was held in conjunction with Singapore Maritime Week (22–28 April 2017). The Conference consisted of eight panels of leading international law experts and interdisciplinary academics. Each panel consisted of either two speakers or one speaker and a commentator. At least half the time in each panel was reserved for questions, comments and discussion. More than 60 participants attended the Conference, including local and international academics, NGOS, government officials and members of the shipping industry. The Conference Programme and PowerPoint presentations are available on the web site of CIL at http://cil.nus.edu.sg/2017/international-conference-on-high-seas-governance-gaps-and-challenges-24-25-april-2017.

Introduction

The objective of this conference was to identify gaps concerning the governance of certain sources of pollution of the high seas as well as to discuss selected activities in the high seas that may cause damage to the marine environment.

The starting point for analysing global governance of the high seas is 1982 UN Convention on the Law of the Sea (UNCLOS). The UNCLOS regime governing the high seas is based on the principles that that were codified in the 1958 Geneva Convention on the High Seas. The high seas are outside the jurisdiction of any coastal State, they are not subject to a claim of sovereignty by any State, and they are subject to the principle of freedom of the seas.

The basic principles governing responsibility and liability for the pollution of the marine environment of the high seas are set out in art 235 of UNCLOS. States have an obligation to ensure that recourse is available in accordance with their legal systems for prompt and adequate compensation or other relief in respect of damage caused to the marine environment by natural or juridical persons under their jurisdiction. States also have an obligation to cooperate in the implementation of existing international law and in the further development of international law relating to responsibility and liability for damage caused to the marine environment.

Under UNCLOS, jurisdiction on the high seas is primarily the responsibility of flag States. Every State has the right to sail ships flying its flag, and ships on the high seas are subject to the exclusive jurisdiction of the flag State. Flag States have an obligation to adopt laws and

regulations governing ship-source pollution that have at least the same effect as the generally accepted rules and standards established by the International Maritime Organization (IMO). Decisions of courts and tribunals have clarified the obligations of flag States to act with due diligence. They must not only enact laws and regulations, but they must take steps to ensure that those laws are complied with

The legal framework in UNCLOS seems to assume that all actions on the high seas that may cause damage to the marine environment will be carried out by ships and regulated by flag States in accordance with rules and standards established by the IMO or other competent international organisations. However, the IMO rules and standards regulate only pollution from ships and from dumping. There are no international rules and standards governing many activities that can cause significant harm to the environment of the high seas.

A dominating theme at the workshop was which State has the responsibility to exercise jurisdiction and control over activities that may impact the marine environment of the high seas which are undertaken by its nationals (individuals, juridical persons and vessels flying its flag) and what mechanisms, if any, are available to ensure that the States that are responsible comply with their obligations. Another dominating theme was the extent to which States with jurisdiction and control exercise their duty to give due regard to rights and obligations of other States that carry out concurrent activities in the same location. A complicating factor is the fact that some activities by non-State entities on the high seas may not be regulated by any State.

Another issue considered is the extent to which the international conventions regulating particular activities address damage to the marine environment of the high seas. Some international conventions on liability and compensation are focused on providing compensation for economic loss or remediation/reinstatement costs incurred by coastal States whose territory, territorial sea and/or exclusive economic zone (EEZ) has been damaged as a result of an incident at sea, but provide no compensation for pollution of the high seas. For example, if pollution from an oil tanker occurs on the high seas, and the pollution does not spread to the EEZ of any State, damage to the marine environment by the oil cannot be recovered.

Discussions in several panels questioned the extent to which the gaps in governance of activities on the high seas should be addressed in the BBNJ (Biological diversity in areas Beyond National Jurisdiction) discussions at the United Nations, or whether it would be better to address the gaps in other fora.

Panel 1 – Parallel Mechanisms to Identify and Protect Sensitive Marine Areas on the High Seas

There is mounting pressure from the international community to better protect the marine environment within and beyond national jurisdiction, especially in areas that are considered to be particularly sensitive ecologically or culturally, and are exposed to human activities at sea. The IMO has been a pioneer on this path and since the 1970s has overseen the progressive development of the largest existing body of international environmental regulations relating to a use of the sea, including the adoption of special areas under the

International Convention for the Prevention of Pollution from Ships, 1973/78 (MARPOL) and guidelines for the protection of particularly sensitive sea areas (PSSAs).

This panel focused on the parallel and inter-related development, in the IMO and in other international fora, of sets of criteria to identify marine areas that present particular sensitivity. These criteria can be grouped into two broad categories: (1) criteria developed to identify areas of particular ecological and cultural sensitivity and promote a greater degree of protection for these areas (without indicating activities that may occur or should be restricted within them); and (2) criteria developed to identify marine areas that are sensitive to particular activities and that provide a basis on which to restrict these activities accordingly.

The presentation focused primarily on the criteria that are relevant to marine areas located in the high seas, with a particular emphasis on recent developments with respect to Ecologically or Biologically Significant Areas (EBSAs) identified under the auspices of the Convention on Biological Diversity (CBD). Criteria developed to identify EBSAs were compared with the criteria and guidance developed to identify areas of Outstanding Universal Value (OUVs) under the UNESCO Convention concerning the Protection of World Natural and Cultural Heritage and the areas to be protected under the Bonn Convention on the Conservation of Migratory Species of Wild Animals.

The EBSA criteria were also compared with those developed to identify (1) Vulnerable Marine Ecosystems (VMEs) under the auspices of the FAO and Regional Fisheries Management Organisations (RFMOs), (2) PSSAs under the IMO, (3) Areas of Particular Environmental Interest (APEI) for deep seabed mining in the Clarion-Clipperton zone (adopted by the International Seabed Authority (ISA)); and (4) the areas to be avoided when selecting a site for waste disposal under the London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter and its 1996 Protocol (the LC/LP).

Comparison of these different sets of criteria show that they do not generally contradict each other. Rather, they overlap and complement each other. Their differing language, however, is a source of confusion. It was also demonstrated that the EBSA criteria are the most exhaustive in the identification of areas of ecological sensitivity. However, the EBSA criteria do not take into account social and cultural sensitivity and values (as for the identification of OUVs), nor economic, scientific or educational values as PSSAs and selection of dumping sites. Differences in the criteria for the identification of EBSAs and VMEs were also discussed between the panel and expert participants and the differences in objectives were highlighted. Furthermore, it was pointed out that VMEs depend on implementation by RFMOs and Bodies and are therefore the subject of unequal implementation globally.

The presentation demonstrated that this complex legal framework builds a consistent and useful set of rules to protect and preserve the marine environment beyond national jurisdiction, in accordance with UNCLOS, the cornerstone of the protection of the marine environment. Under UNCLOS and the current governance regime, identification of a marine area as being sensitive does not *ipso facto* imply that activities occurring within that area are restricted. Activity restrictions (commercial shipping, fishing, etc.) depend on the rules applicable under the relevant sectoral regime, which consider the extent of the negative impact on the sensitive area concerned, in order to determine whether activities should or may be restricted and the process to be followed to that effect.

The panel and participants highlighted that sensitive areas beyond national jurisdiction are included in the BBNJ discussions, particularly in the context of Area Based Management Tools (ABMTs) including Marine Protected Areas. The BBNJ discussions include numerous aspects of the protection of sensitive marine areas beyond national jurisdiction centred around the identification, designation, establishment and management processes (source of proposals, objective of designation, funding sources, role of science, monitoring and reporting, etc.) followed by implementation. Issues of compliance were discussed, including the role to be played by flag States and the extent to which they may be held accountable.

Particular attention was given to the potential role of a coordinating body between existing and new fora in the ocean governance framework. The role of a scientific advisory committee to the conference of the parties (COP) of the new Implementing Agreement was also discussed. It could play a similar role to that of scientific groups to the COPs of some international instruments (e.g. London Convention/London Protocol) and/or the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP). Difficulties that may arise in the coordination of the 18 existing regional seas programmes and their different identification process were also discussed, and pointed to the debate on regional versus global integration. The role that could be played by NGOs and the civil society in this process was also mentioned.

Panel 2 – IMO Instruments to Identify and Protect Sensitive Marine Areas Against Adverse Impacts from Shipping

The impacts of international shipping on the marine environment include operational and accidental marine and atmospheric pollution, transposition of exotic species from one ecosystem to another through ballast water and hull biofouling, collisions with marine mammals, surface and underwater noise impacts on marine life, and groundings that cause major damage to very sensitive coastal systems.

Part XII of UNCLOS sets out the general obligations on States to protect and preserve the marine environment from all sources of pollution, and its provisions on ship-source pollution are the most detailed in UNCLOS. The IMO is the competent international organisation that establishes global rules and standards to enhance the safety of international navigation and protect the marine environment. The mandate of the IMO has gradually expanded to meet demands to preserve and protect the marine environment from ship-source pollution. Its environmental portfolio spans, among other issues, pollution prevention, places of refuge for ships in need of assistance, greenhouse gas emissions and other air emissions, ballast water management, harmful antifouling systems, biofouling, underwater noise, ship recycling and protection of sensitive marine areas.

The established and growing IMO experience with the use of legal and management tools adopted for the protection of sensitive marine areas and species includes three types of tools. First, ‘special areas’ designated under MARPOL. Second, PSSAs established under the authority of the IMO Convention, which includes the adoption of associated protective measures under various IMO instruments. Third, the adoption of permanent or seasonal routeing measures and reporting measures to avoid or minimise negative impacts on the marine environment or particular species.

The main focus of this session was on the extent to which the area-based management tools employed by the IMO could be employed to protect fragile ecosystems or sensitive sea areas on the high seas. Area-based management tools such as PSSAs and routeing measures have been adopted by the IMO at the request of coastal States against the implicit backdrop of coastal State and port State jurisdiction. The use of these area-based management tools on the high seas poses challenges because, with very limited exceptions, ships on the high seas have freedom of navigation, and are subject to the exclusive jurisdiction of the flag State.

In principle, MARPOL special areas and emission control areas may be designated for high sea areas as long as the criteria set out in the applicable annexes and 2013 Special Area Guidelines are satisfied. The definition of 'special area' in Annexes I, IV and V refers to 'sea area' without qualifying whether it has to be within national jurisdiction, and in some regions special areas have in fact included areas of high seas.

To date no PSSAs have been designated for high seas areas. Although the PSSA guidelines contain scientific and technical parameters that are as geographically neutral as possible, they were developed and updated while learning from sensitive areas within national jurisdiction. However, in theory, there is nothing in the IMO Convention and the 2005 PSSA Guidelines that suggests that PSSAs may not be designated for high sea areas. Also, in principle, the IMO is not limited to adopting associated protective measures (APMs) such as routeing and reporting measures in areas within jurisdiction. The real test would be the functionality and efficiency of the APMs in meeting the proposed area's needs.

A major issue would be to identify the State or group of States that would propose the establishment of an area-based management tool on the high seas to the appropriate committee or sub-committee of the IMO. Most States would be reluctant to make such a proposal simply because there is no existing precedent. Also, the proposing States would be likely to receive some push-back from States or shipping organisations that would view such a proposal as a dangerous precedent.

Another issue of concern was which States would be responsible for ensuring compliance with the reporting or routeing measures since the measures would not be proposed by any coastal State bordering the area. However, it was also argued that once the measures were officially adopted by the IMO, most ships would in practice comply with them as a matter of course. Therefore, the role of coastal States in ensuring implementation should not be exaggerated.

With respect to the establishment of MARPOL special areas on the high seas, a practical problem is that the IMO requires the proposing States to demonstrate that there are adequate reception facilities available in the relevant coastal States so that ships entering the area can dispose of their waste before navigating through the sensitive area. If the special area is on the high seas, there is likely to be no coastal State near the area. Another point covered in the presentation was the question of whether there is actually a compelling need for MARPOL special areas on the high seas.

The potential use of IMO area-based management tools for the Sargasso Sea was the subject of discussion. There was a consensus that the Sargasso Sea would likely meet the criteria

required for a MARPOL Special Area or a PSSA if it could be shown that the area was at risk from the normal operation of ships, and that the proposed restrictions or proposed routeing or reporting measures would reduce the risk of damage. However, it was also pointed out that no States seemed to be willing to take the lead to undertake the necessary studies and make a proposal to the IMO.

The issue of flag State implementation was also discussed. It was pointed out that the IMO has taken two steps that will put pressure on flag States to implement and enforce IMO Conventions effectively. First, it has established a Sub-Committee on Implementation of IMO Instruments (III). Second, it has established a mandatory audit scheme. Also, it was pointed out that the obligation of flag States to ensure that ships flying its flag comply with IMO regulations and standards is one of 'due diligence', and that much of the reasoning in the International Tribunal for the Law of the Sea (ITLOS) Advisory Opinion on the Responsibility of Sponsoring States would apply to the due diligence obligations of flag States. Therefore, the developing law may make it possible for States to institute proceedings under UNCLOS against flag States that fail to fulfil their due diligence obligations with respect to vessels flying their flag.

There was also some discussion on the role of the IMO in adopting area-based management tools if a coordinating mechanism for environmental impact assessments (EIAs) and area-based management tools was created under an implementation agreement resulting from the BBNJ negotiations. Given that the IMO is a specialised agency that deals specifically with international shipping, issues of 'turf' could arise if member States at the IMO believe that a coordinating body without an understanding of the shipping industry has been given the authority to create area-based management tools that may lead to restrictions on shipping, thus interfering with the mandate of the IMO.

Panel 3 – Gaps with respect to Nuclear Pollution of the High Seas

This panel examined the international legal framework for holding states (and other actors) accountable, in the sense of legally answerable, for nuclear pollution of the high seas. In respect of nuclear pollution, like other forms of marine pollution in areas beyond national jurisdiction, the 'governance gap,' such as it exists, is not epitomised by an absence of substantive norms for the protection or the preservation of the marine environment. To the contrary, obligations to prevent and minimise the pollution of the high seas are essential aspects of ocean governance as reflected in relevant international legal instruments addressing civil liability for nuclear damage, UNCLOS and customary international law. Rather, the governance gap as concerns UNCLOS and customary international law is epitomised by the lack of international 'enabling provisions' or the presence of legal obstacles to the invocation of international rules bearing on accountability for environmental damage on the high seas, which tends to render the substantive obligations less than fully effective. With respect to some of the nuclear liability instruments, a governance gap exists as concerns their application to damage suffered on the high seas and the extent to which they cover environmental damage.

From an international law perspective, accountability is not synonymous with 'responsibility'. For example, nuclear pollution of the high seas can be the result of activities involving a State's

internationally wrongful conduct (intentional or negligent act or omission in breach of an international obligation) or it may occur notwithstanding the State's full compliance with its prevention obligations. State responsibility and liability represent two manifestations of a State's accountability under international law; they differ in terms of their origin or the basis of obligation as well as their nature and scope. Accountability varies with the nuclear pollution scenario, type of damage caused, type of claimant (even his/her nationality) and demands for redress. Accountability for loss of life, personal injury or property damage, the so-called traditional types of damage, is relatively strong and consequently, the governance gap is small if not non-existent, but in the case of damage to the marine environment, accountability is relatively diminished.

Nuclear pollution of the high seas may be accidental (e.g. resulting from a collision involving ships transporting nuclear fuel and/or waste, the operation of nuclear-powered ships, and a potential future deployment of transportable nuclear power plants (TNPPs)) or non-accidental (e.g. nuclear weapons testing and dumping of nuclear waste) in nature. Of the two types of damage, accidental damage is the focus here. Accountability for such pollution may be analysed looking at the position under the international nuclear liability instruments, UNCLOS and customary international law.

In examining whether damage due to nuclear pollution on the high seas is compensable under the nuclear liability instruments, two issues are relevant: (i) their geographic scope of application; and (ii) the kinds of damage covered which include traditional counts of damage such as loss of life, personal injury, property damage and modernised heads of damage such as economic losses and environmental damage. In terms of geographic scope, the application of the 1963 Vienna Convention (1963 VC) and the 1960 Paris Convention (1960 PC) to the high seas is arguably limited. In the case of the modernised instruments, the 1997 Vienna Convention (1997 VC) applies to nuclear damage wherever suffered and the Convention on Supplementary Compensation (CSC) applies to the high seas if the damage is suffered in areas within its scope. The 1963 VC and 1960 PC provide no express redress for environmental damage whereas the 1997 VC and CSC do. More particularly, the cost of reinstating a significantly impaired environment (where measures taken must be reasonable) and the cost of preventative measures (in the context of a grave and imminent threat of a release of radiation) and economic losses whether consequential to environmental damage or not (i.e. pure economic loss), are compensable. While the modernised nuclear liability instruments do apply to the high seas and expressly address environmental damage, they do not fully provide adequate redress for high seas pollution scenarios. In this context, none of the nuclear liability instruments expressly cover general degradation of the environment where there has been no quantifiable economic loss suffered and where no reinstatement or preventative measures have been taken. Accordingly, they do not cover for example, loss of aesthetic value, loss of natural resource services and rumour damage.

UNCLOS environmental obligations are obligations of due diligence. In its Advisory Opinion on the Responsibility of Sponsoring States, the Seabed Disputes Chamber of ITLOS said that there are variations in the standard of care where riskier activities require a higher standard of due diligence. There is currently no basis in UNCLOS for a strict liability-based argument. However, the Seabed Disputes Chamber, in the context of deep seabed mining, made clear that the law on responsibility and liability is not considered to be static and the liability regime for deep seabed mining is open to developments in the law of the sea or customary

international law. In view of this, there is the possibility that the liability regime for deep seabed mining might over time move towards strict liability for damage to the environment without there being evidence of a violation of due diligence obligations.

The Seabed Disputes Chamber was also of the view that given the *erga omnes* character of the obligations to preserve the marine environment of the high seas and the Area, States may ask for compensation for environmental damage to such areas and in the context of deep seabed mining, the party that would have standing would be the International Seabed Authority (ISA), where it would be akin to an injured State. It was also noted that in the context of Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment, the obligation of the States parties to that Convention**,** to either prosecute alleged perpetrators or extradite them to another country with jurisdiction for prosecution**,** was held to be '*erga omnes partes*'.

In terms of compensation in the absence of international wrongfulness, State practice is limited. In the 1954 *Daigo Fukuryu Maru* incident, ex-gratia payments were made to the crew of the Japanese shipping vessel for nuclear damage suffered when it strayed into an exclusion zone in the Bikini Atoll in the Marshall Islands. *The Principles on the Allocation of Loss in the Case of Transboundary Harm Arising Out of Hazardous Activities* adopted by the International Law Commission (ILC) serves as a guide to international public policy and evolving international community obligations. The principles require that a State causing transboundary harm provide adequate funding if not otherwise available. As for reparations subsequent to international wrongfulness, does the notion of *actio popularis* exist in international law? Pursuant to the ILC's Articles on *Responsibility of States for Internationally Wrongful Acts*, a State may invoke the responsibility of another State as an injured State (art 42) or a State other than an injured State if the obligation breached was established for the protection of a collective interest of the group (art 48(1)). In the case of the latter, the State would not be entitled to restitution/compensation but could request the cessation of the internationally wrongful act and assurances and guarantees of non-repetition (art 48(2)).

Additional issues to be considered include the lack of provision in the ILC Articles of the right of a State other than the injured State to take countermeasures should a State in breach of its obligations not respond to such a State's demand to cease the pollution activity. Article 218(1) of UNCLOS provides for port State enforcement targeting vessels suspected of nuclear pollution of the high seas. A port State may investigate (and where evidence so warrants) institute proceedings if the incident involves a violation of applicable international rules and standards.

In conclusion, there is a governance gap where the inadequacy of the bilateralist approach is apparent. The changes that might be envisaged include revising the nuclear liability instruments (yet the viability of doing so is limited), encouraging greater participation in them, strengthening flag State responsibility, establishing an 'ocean management' mechanism/agency to alleviate standing issues and increasing unilateral enforcement measures under UNCLOS art 218(1).

Panel 4 – Gaps with respect to Oil & HNS Pollution of the High Seas

This panel focused on two gaps with respect to pollution of the high seas by oil and hazardous and noxious substances (HNS). First, that there is no liability or compensation for certain types

of harm to the environment of the high seas. Second, there are deficiencies in the current legal instruments establishing liability and compensation for pollution of the marine environment by oil and HNS.

Liability and compensation schemes for pollution of the marine environment from oil carried by tankers have been developed by the IMO since the late 1960s. The liability and compensation schemes for pollution of the sea by oil are designed to take into account the fact that most ships are single asset companies. The civil liability convention provides that ship owners are strictly liable up to certain limit, and are required to have compulsory insurance to the extent of their liability. If the damage from an incident exceeds the limit of liability of the ship owner, additional compensation is available from a compensation fund. The compensation fund is established by entities that receive oil carried by tankers. Almost all tankers carrying oil are covered by these conventions because tankers will not be permitted to enter any major ports unless they provide insurance certificates proving that they have the insurance required by the conventions.

These schemes provide compensation only for oil pollution damage in the maritime zones of States that are parties to the conventions. If the State whose marine environment is damaged is a party, marine insurance companies engaged by the ship owner and the compensation fund provide compensation to the government, private companies or individuals who have suffered losses as a result of the pollution incident. The civil liability and fund conventions provide compensation only for pollution damage as defined in the conventions. This includes the costs of clean-up, economic loss and actual reinstatement of the environment. States are able to recover for pollution damage caused to the territory, territorial sea, archipelagic waters or exclusive economic zone of States parties to the conventions. There is no provision for liability or compensation for pollution of the marine environment of the high seas.

The IMO has also developed schemes for pollution from oil carried by ordinary ships as fuel (bunkers), but the amounts available are much lower. The IMO has also developed a civil liability and compensation scheme for damage as a result of accidents at sea involving HNS. It is modelled on the liability and compensation scheme for pollution from oil tankers, with a two-tier system of liability, including strict liability of the ship owner and a system of compulsory insurance and insurance certificates. The HNS Convention was adopted in 1996 and amended in 2010, but it has not entered into force. Like the civil liability and fund conventions for oil pollution from tankers, it would not cover damage to the marine environment of the high seas.

Another major gap in the existing legal regime is the absence of a liability and compensation scheme for transboundary pollution of the marine environment from offshore oil exploration and exploitation. After the Montara oil spill in 2009 from an oil platform under Australian jurisdiction in the Timor Sea caused pollution damage to the marine environment in Indonesia, there have been calls for the development of a liability and compensation scheme for transboundary pollution from offshore oil installations. A proposal was made for the IMO to develop a scheme, but it was met with objections on the ground that the mandate of the IMO under its convention is limited to the effects of ‘shipping’ on the marine environment.

One commentator argued that companies that are exploiting oil resources should have strict and unlimited liability and should be required to have adequate insurance. However, a representative from the insurance industry argued that it was in everyone's interest to have a limitation regime because unlimited liability is impossible to insure. In the discussion it was argued that liability limits in some of the IMO conventions are set far below the levels that industry can handle.

The session also covered the issue of preparedness, response and cooperation to address incidents that may cause significant pollution damage to the marine environment. It was pointed out the most global and regional conventions and arrangements are focused on protecting the marine environment under the jurisdiction of coastal States, not the marine environment of the high seas. It was also pointed out that it is not clear which States, if any, have an obligation to respond to a major pollution incident on the high seas, and if they do respond, whether they will be reimbursed for their expenses.

There was a discussion about the extent to which the work of the ISA to adopt rules to protect the marine environment from activities in the Area might be relevant to the debate on how to fill the gaps concerning pollution of the marine environment of the high seas. One speaker proposed that the jurisdiction of the ISA should be expanded to cover environmental protection of the water column.

There was also discussion of whether the BBNJ discussions at the United Nations might result in a new implementation agreement, and if so, whether the principles in that agreement might apply to pollution of the marine environment of the high seas. Of particular interest was the possibility that the new implementation agreement might contain provisions establishing a trust fund or a rehabilitation/contingency fund for damage by pollution to the marine environment of the high seas.

Finally, it was argued that principles of international law on responsibility and liability of States that are being developed in reports of the International Law Commission and by decisions and advisory opinions of international courts and arbitral tribunals could be further developed to hold States responsible and liable for damage caused by pollution of the marine environment of the high seas by natural or juridical persons subject to their jurisdiction.

Panel 5 – Jurisdiction and Control over Activities by Non-State Entities

Activities undertaken by non-State actors on the high seas (taking advantage of UNCLOS' high seas freedoms) are increasing and are expected to increase further. To date such activities primarily comprise marine survey and marine scientific research (MSR) activities, submarine cable laying and servicing and some stationary activities from installations and structures (freedoms of fishing and overflight are left aside because they are the subject of a distinct set of rules and regulations). This session reviewed UNCLOS' provisions (or lack thereof) with respect to these activities and discussed the obligation of the flag State to exercise effective jurisdiction and control over non-state entities, especially in the context of the protection of the marine environment. The panel also considered the specific activities regulated under UNCLOS and discussed the management of potential interferences or conflicts between competing activities.

The panel emphasised the importance of UNCLOS arts 94 and 194(2) and of the obligation of due diligence and the responsibility to 'ensure' compliance developed in the two advisory opinions rendered in ITLOS cases 17 and 21 and the award rendered in the South China Sea Arbitration between the Philippines and China. According to these cases, the connection between States Parties and domestic law entities required by UNCLOS is twofold: nationality and effective control. State responsibility to ensure compliance with international law includes activities carried out by States Parties, or state enterprises or natural or juridical persons which possess the nationality of States Parties or which are effectively controlled by them or their nationals. This obligation involves a duty to act with due diligence including adoption of rules and measures to that effect, and maintenance of a level of vigilance in enforcing them. Article 87 further provides for an obligation of due regard for the interests of other States also exercising high seas freedoms. Part XII of UNCLOS and other rules of international law must also be taken into account including those developed through other fora (such as the IMO and the FAO) and instruments (such as the CBD or other multilateral environmental agreements).

With respect to MSR activities, they shall be conducted with 'appropriate scientific methods and means' compatible with UNCLOS and in compliance with all relevant regulations adopted in conformity with UNCLOS including those for the protection and preservation of the marine environment. However, no international rule or guidance clarifies what the 'appropriate scientific methods and means' are. The application of Part XII is unclear, especially arts 204 to 206 on environmental impact assessment and the publication of results as well as the protection of sensitive areas (including fragile ecosystems and the habitat of threatened or endangered species).

Similarly, with respect to the laying of cables and pipelines, UNCLOS provides for the freedom to lay and maintain them, but provides no specific guidance for the protection of the marine environment or the management of conflicts with other uses of the sea such as fishing. Mechanisms to ensure that a full impact assessment taking into account the specific context be submitted (rather than a presumption of harmlessness) and/or setting a threshold for such assessment have been developed for some regional seas but not for the high seas.

The assessment of potential impacts from survey vessels on the high seas and to the content of their obligation to protect and preserve the marine environment is not detailed in UNCLOS, especially with respect to noise pollution and interference with marine mammals, a topic under study at the IMO.

As for installations on the high seas, it is unclear whether the UNCLOS regime is limited to fixed platforms and structures or whether it also includes floating platforms and structures. Further, their deployment is not subject to prior registration with a State under international law.

Other examples of activities on the high seas discussed included sea launch of satellites by a consortium and the deployment of research equipment (including mobile floats and stationary buoys) by government owned and private entities.

Discussions highlighted the general complexity in the legal responsibilities for operations on the high seas, whether from a vessel or an installation, in the following circumstances: (1) the

vessel, installation and other structures and assets may have both legal and beneficial owners; (2) the vessel, installation and other structures and assets (fixed or else such as small manned or un-manned submersibles) may be operated by several entities (whether physical or natural persons, including a consortium) making it difficult to determine who is the responsible party and for States to exercise jurisdiction and control; (3) the vessel may be used solely for transport whilst the activities on the vessel are operated by different entities from different States disconnected from the flag State or that of the vessel owner or operator; (4) buoys may be installed, semi-autonomous or other un-manned crafts may be launched, without an obvious responsible entity and/or State or even a connection with an entity or a State.

It was also acknowledged that fixed platforms located on the extended continental shelf are subject to the exclusive jurisdiction of the coastal State where they are devoted to the exploration or exploitation of living or non-living resources of the seabed or subsoil. However, floating platforms above the extended continental shelf are subject to the high seas regime.

The presentations highlighted that the gaps in high seas governance include the lack of a framework for the protection of the marine environment from activities on the high seas carried out by non-State entities including assessment of impacts and their publication; the lack of a consultation process between potentially competing activities (which may be taken into account in the assessment of impacts where relevant); the lack of a prior registration process of the activity and its responsible entities (which may possibly include a responsible State); and the lack of a legal framework for un-manned crafts (no registry or flag). The latter issue is under study by the Comité Maritime International (CMI).

Panel 6 – New Activity: Geoengineering

Impacts from climate change and the development of the climate change regime are drivers for the development of geoengineering, especially where it could provide carbon credits. Climate change science indicates that the oceans, the most significant sink of CO_2, have sequestered 50% of CO_2 since 1750 and continue to sequester 30%. Much geoengineering research to date has therefore involved the oceans.

Geoengineering is defined in this context as the large-scale and deliberate manipulation of natural environmental systems for primarily (although not exclusively) climate change mitigation purposes, and that has the potential to result in deleterious effects, especially where those effects may be widespread, long lasting or severe. The only definition of geoengineering elaborated in an international legal instrument is by the COP to the London Convention/London Protocol (LC/LP). This panel discussed the existing international legal framework for geoengineering (especially ocean fertilisation) as well as the challenges and gaps in the modern law of the sea, especially in the context of the high seas.

UNCLOS established a largely permissive regime for maritime activities with the ultimate aim of balancing the rights and obligations of States according to the location and activity. However, geoengineering is not an activity mentioned and directly provided for in UNCLOS. In the high seas, States must have due regard to the interests of other States and comply with UNCLOS' requirements with respect to MSR and the protection and preservation of the marine environment, which has been clarified in recent international case law to include precaution and EIAs and to implement precaution through EIAs. The obligation to protect the

marine environment also includes an obligation to take all measures to prevent, reduce and control pollution from any source, though whether geoengineering qualifies as pollution is unresolved. The precautionary approach is particularly significant in the context of geoengineering activities given that there is significant scientific uncertainty. The net impact, whether positive or negative, of geoengineering activities is often debated. Negative impacts expected from ocean fertilisation activities include anoxic zones and unusual growth of toxic phytoplankton.

Following several ocean fertilisation projects in 2005-2007, some framed as MSR and others framed as carbon credit producing projects, three important fora of marine environmental governance reacted and warned of potential dangers: the LC/LP, the UNGA and the CBD. The Scientific Group to the COP to the LC/LP adopted a statement of concern in June 2007 on long term large-scale ocean fertilisation which was subsequently endorsed by the COP to the LC/LP. On 22 December 2007, the UNGA Resolution 62/215 on Oceans and Law of the Sea encouraged States 'to support the further study and enhance understanding of ocean iron fertilisation'. In June 2008, the COP to the CBD referred to the LC/LP resolution and further adopted a moratorium resolution in which it 'requests parties and urges other Governments, in accordance with the precautionary approach, to ensure that ocean fertilization activities do not take place until there is an adequate basis on which to justify such activities (…) and a global transparent and effective control and regulatory mechanisms', including 'thorough prior assessment of the potential impacts of the research studies on the marine environment'. On 31 October 2008, the COP to the LC/LP further noted 'that knowledge of the effectiveness and potential environmental impacts of ocean fertilization is currently insufficient to justify activities other than legitimate scientific research' and agreed 'that scientific research proposals should be assessed on a case-by-case basis using an assessment framework to be developed by the SG under the LC/LP'. An assessment framework was subsequently adopted on 14 October 2010.

In 2013 an Amendment to the 1996 London Protocol was eventually adopted along the same lines as the 2010 assessment framework. The Amendment is designed to eventually apply to all geoengineering activities which involve the placement of matter into the sea that are listed in Annex 4. However, ocean fertilisation is the only geoengineering activity listed. The 2013 amendment requires the grant of a permit before ocean fertilisation can take place. The permit/authorisation can only be granted for legitimate scientific research and only if an assessment is carried out to ensure that pollution is prevented or minimised.

Discussions in the panel highlighted the weaknesses of this LP Amendment and the guidance of the LC/LP:

- The 2013 Amendment to the LP has not come into force and has only been signed by one party (despite being adopted by consensus); furthermore the LP itself has only 48 parties, and it is therefore unclear if and when it could qualify as a global standard under UNCLOS art 210;
- Many challenge the categorisation of ocean fertilisation as a placement for disposal and therefore consider that the decisions of the LC/LP with respect to geoengineering/ocean fertilisation are *ultra vires;*

- Geoengineering activities do not necessarily involve the oceans so that ocean governance fora may be inadequate to regulate them unless an overarching/coordination mechanism exists, especially with the UNFCCC; and
- In regulating ocean fertilisation, the LC/LP legitimates it whilst being an inadequate forum for the moral and ethical questions it raises.

However, the discussions also highlighted an interesting counter-argument, which is that despite the resolutions of the LC/LP being non-binding and the 2013 Amendment not being in force, contracting parties to the LC/LP abide by the assessment framework (see for instance papers submitted by China and Korea at the LC/LP SG 40). Furthermore, the perspective of the contracting parties is that geoengineering is not a placement for disposal but a placement for another purpose. However, the meeting of the LC/LP has decided that it is within its mandate to determine whether such placement for another purpose is subject to its regulation because it is contrary to the aims of the LC/LP (a debated view).

Under the current governance framework for the high seas, an EIA should be conducted prior to undertaking ocean fertilisation. However, the scope of the EIA and the entity responsible for reviewing it are particularly unclear in the high seas (except in the context of regional seas that may provide for it).

Another unregulated and debated geoengineering activity involving the ocean is the re-stocking of oceans. If done on a large scale, impacts can be far-reaching. The EIA framework discussed in BBNJ could clarify the situation; further guidance on MSR could also help.

Panel 7 – Marine Debris

This panel presented first a scientific review of the knowledge gaps with respect to plastic pollution in the oceans prior to discussing legal gaps and ways in which to respond to this plastic pollution, including cleaning-up macro-plastics from the oceans' gyres as is envisaged by the Ocean Cleanup project.

The problem of marine plastic has been described as one of the consequences of accelerating global growth in the manufacture of plastics, their frequently wasteful use, and poor rates of collection and recycling. As a result, these materials have become ubiquitous contaminants in all environmental compartments, including the oceans. Most samples of surface seawater or sediments, even from remote offshore areas, contain a diverse array of small plastic fragments, or microplastics, and a selection of larger plastic items, including discarded packaging, lost fishing gear and Fish Aggregating Devices (FAD). The majority of microplastics ultimately derive from such larger items. It is estimated that only 0.5% of plastic waste is visible at the surface, 33.7% is found on the coastline and on the seafloor, 39% in open ocean waters and 26.8% in coastal ocean waters. Assessments are therefore estimates only.

Science shows that the presence of such macro- and microplastic debris has direct biological consequences, whether through entanglement, choking or other physical damage to larger species, through ingestion or passage across the gills into the tissues of smaller foraging or filter feeding species, or accumulation. It also shows that plastic debris can act as a long-distance carrier of, and source of exposure to, harmful chemical pollutants, and may speed up the spread of invasive species. Microplastics include microbeads which are commonly used

in personal care products and can pass through waste water filters due to their small size, therefore ending up in the oceans where they are ingested by marine life. The implications for humans of consuming microplastics along with seafood remain to be determined. It is a major issue in the high seas where buoyant plastics are found in greatest concentration in the North Pacific Gyre as well as in lower concentration in the other ocean gyres. Sources for these plastic debris are land-based pollution including rivers and water drains, sea-based sources, and re-suspension from the disposal of dredged sediments or other material containing plastic.[1] Statistics show that the trend in the manufacture of plastic (and subsequent disposal) follows an exponential increase. Whilst the proportion of the plastic that ends up in the ocean is unconfirmed, many countries do not have proper waste facilities and the issue is set to worsen, especially in Asia where it is already a pressing issue. Several reports were mentioned, especially the recent study by GESAMP.[2]

The panel and participants discussed possible legal responses to the threats arising from plastics. At the domestic level, the development of national regulations to ban plastic bags and, more recently, the sale of products containing microbeads were mentioned as encouraging first steps. Proposals for the limitation of single use plastics, improvement of plastic re-use capabilities and improved management of plastic in the waste streams were also discussed.

The political profile of ocean plastics and global awareness of the issue has increased in the last five years as evidenced by several global commitments and initiatives such as the Leaders' Declaration that concluded the 2015 G7 Summit (which includes marine debris in an action plan to combat marine litter), and UNGA Resolution 71/257 on Oceans and the Law of the Sea adopted on 23 December 2016 (which identifies marine plastics as one of the four greatest environmental concerns of our time). Also significant are UNEP General Assembly Resolution 2/11 on marine plastic litter and microplastics, adopted in May 2016; and the UNEP Global Partnership on Marine Litter (GPML). Given the environmental persistence of plastics, their propensity for long-range transport, their ability to penetrate biological tissues and their capacity to cause harm, microplastics can be seen to possess many characteristics comparable to those of persistent organic pollutants (POPs), which are regulated under the Stockholm Convention. The prospects for a new international convention on plastics based on the successful model provided by the Stockholm Convention was discussed as well as the issues raised by the complexity of the plastic manufacturing and distribution industries, the identification and classification of plastics, possible fora for such an endeavour and regional differences in the issues faced and solutions that may be available.

In the context of plastic pollution in the high seas, the Ocean Cleanup, a private initiative that seeks to collect, remove and take to land buoyant plastics found on the high seas, was the subject of particular attention. Launched in 2013 by a young Dutch entrepreneur, this ambitious project revolves around the concept of deploying a stationary 100km-long plastic removal system (the Array) in the North Pacific Gyre in 2020 so as to reduce the plastic debris in the gyre by 40% over a period of 10 years. The exact components of the Array are not yet known as engineers are still perfecting the design. Current plans show a stationary 100km-

[1] http://www.imo.org/en/OurWork/Environment/LCLP/newandemergingissues/Documents/Marine%20litter%20review%20for%20publication%20April%202016_final_ebook_version.pdf.

[2] http://www.gesamp.org/newly-published-report-on-microplastics.

long membrane positioned in a V-shape and a stationary collecting device located inside the angle of the 'V'. The panel and participants discussed the application of the international legal framework, especially UNCLOS, before and after the deployment of the Array. Given the fact that it involves a private entity deploying installations, devices and vessels on the high seas, this project provided an example of the discussions in panel 5. Points discussed included the status of the Array and its characterisation as an installation under UNCLOS, exercise of jurisdiction and control and application of UNCLOS art 87, whether a registration would be necessary before deployment, interferences with other activities such as fisheries and commercial shipping including the obligations of due regard and to ensure that it does not interfere with recognised sea lanes essential to international navigation. The application of UNCLOS' provisions on the protection and preservation of the marine environment, of environmental impact assessment, the precautionary approach, and more generally the obligation of due diligence were also discussed. Other concerns raised included the management of and responsibilities in case of unexpected developments such as detrimental impacts from the development of fouling organisms on the structure or of environmental hazards such as typhoons, which could transform the Array in a hazard itself, as well as its impact on marine systems and attraction of fish and their predators including seabirds.

Whilst the BBNJ discussions do not include regulations for new installations on the high seas, guidance on ABMT including EIAs may be very helpful in the context of the deployment of new activities and installations. A new coordination mechanism and/or body to ensure coordination between marine and maritime sectors of ocean uses and sustainable use of marine resources could also be helpful.

Panel 8 – Protection of Living Marine Resources in the Area and in Adjacent Waters Beyond National Jurisdiction

This panel discussed the main issues being addressed in the Preparatory Committee (PrepCom) to consider the development of an international legally binding instrument under the Law of the Sea Convention for the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (ABNJ) pursuant to UNGA Resolution A/69/292, 19 June 2015. The main presentation focused on the governance gaps concerning fisheries in the high seas and sedentary species in the Area, including substantive, regulatory and implementation gaps.

The main regulatory gaps include the limited scope of the Fish Stocks Implementing Agreement, i.e. that it only covers straddling and highly migratory fish stocks, and not other high seas fish stocks, and the limited and various competencies of the RFMOs. There is no global instrument to review RFMOs or the fishing activities of flag and port States. The fish stocks agreement and most RFMOs do not comprehensively address environmental impact statements, strategic environmental assessments, or cumulative impacts. There is also a general lack of regional (i.e. geographical) fisheries agreements that apply in the high seas, and very limited coordination and cooperation among the regional seas agreements and RFMOs.

Further there is no global or regional organisation with comprehensive responsibility for the conservation of sedentary species in ABNJ. Some RFMOs exclude sedentary species. All provide priority to fish stocks.

In addition there is no specific international law framework regulating access to and distribution of the benefits of marine genetic resources in ABNJ. Indeed much of the discussions at the first three sessions of the PrepCom has centred on whether marine genetic resources are living marine resources, and on seeking to rationalise the different legal regimes applicable to the high seas (freedoms of the sea) and the Area (common heritage of mankind), given that living marine resources are found in both.

Various implementation gaps were highlighted: RFMOs differed in implementing modern conservation practices, and their applicability only to members of the RFMO. The lack of compliance and enforcement mechanisms was raised.

The BBNJ Implementing Agreement potentially would fill in these gaps in a number of ways. It could improve the performance of RFMOs by complementing and supplementing their functions and scientific knowledge. Providing guidance on area-based management measures could enhance the recovery of fish stocks and monitor changes, particularly using ecosystem based procedures, and help better understand cumulative impacts. Use of strategic environmental assessments and management plans could provide a broader context for assessment of fisheries, as well as minimising the adverse effects of other uses of the marine space such as shipping and deep seabed mining.

Comments on the main presentation noted that while fishing seems clearly within the mandate of the PrepCom to consider conservation and sustainable use of marine biological diversity in ABNJ, the discussions have focused on the marine genetic resources of fish (and other living marine resources) while excluding fish taken for commercial use. (This implies limiting the subject-matter scope of 'marine biological diversity'). Most of the instruments adopted by the Committee on Fisheries of the FAO are voluntary; perhaps the Implementing Agreement could place an obligation on its States Parties to comply with the FAO instruments.

Limited discussions at the PrepCom on sedentary species mentioned only those on the continental shelf, not in the Area; there is clearly a gap that needs to be filled.

Another RFMO gap soon to be filled is by the new fisheries agreement for the Central Arctic Ocean to be signed at the Fairbanks Ministerial meeting of the Arctic Council in May 2017, although its scope is not yet publicly known.

There have been calls for a clearing-house mechanism to locate resources for capacity building and transfer of marine technology. The International Oceanographic Commission of UNESCO (IOC) may bring to the attention of the PrepCom's fourth session in July the availability of such resources on training webpages of the ISA, IOC, and CBD secretariat.

Rich discussions followed. It was noted that there are no functioning RFMOs in Asia perhaps due to fear of outside interference. Those States party to the FAO's Port State Measures agreement have the power to deal with fishing in RFMO areas by non-parties to the RFMO.

Not yet formally agreed is that the Fish Stocks Implementing Agreement (UNFSA) would be the model for the BBNJ Implementing Agreement (assuming the UNGA decides to convene a diplomatic conference (DipCon)). If a DipCon is convened it is not likely to meet much before 2019. Hopefully the mandate will be open-ended and not time-bound so the agreement can be widely acceptable to the many and varied interests.

It is expected that non-Parties to UNCLOS would be able to join this implementing agreement as is the case with the UNFSA. Also the UNCLOS Part XV dispute settlement provisions could be adapted as in the UNFSA, and perhaps updated to reflect additional means for dispute settlement developed since 1982.

It should be recalled that the Area includes vastly more seabed than just the three areas currently undergoing prospecting and exploration. There are many seamounts outside those areas where sedentary species live.

At the end of the day any BBNJ implementing agreement should maintain the balance of rights and duties as was done in the 1982 UNCLOS.

Conference Closing – Conclusion

Closing discussions highlighted that some of the high seas governance gaps may be filled by a new Implementing Agreement for BBNJ that would include a mechanism to improve coordination between the marine and maritime sectors through a new international body or existing body that would be vested with this new responsibility and with an EIA framework that would provide for cumulative impact as well as possibly monitoring guidance for impacts from new activities in ABNJ. The absence of a coordination mechanism, an EIA framework and monitoring guidance have been highlighted as a common gap for all sessions of the conference.

Discussions on ABMT suggest that a new Implementing Agreement may also include guiding principles and mechanisms to identify sensitive areas in ABNJ. However, it was pointed out that to date there seems to have been no effort to compare and integrate existing criteria for the identification of sensitive areas set out in different instruments.

Other activity-specific gaps and governance challenges that have been identified and discussed during this conference appear to fall outside the current scope of the BBNJ discussions: new activities on the high seas from installations and structures as well as mobile devices (e.g. scientific research floats) and vessels, nuclear pollution, oil and HNS pollution of the marine environment, fisheries that fall outside UNFSA and RFMOs including sedentary species and marine debris including plastics.

While the III Code and the new audit scheme are expected to improve compliance of flag States and port states with IMO regulations, they will not be sufficient to ensure full compliance and enforcement with respect to high seas governance. Panellists and participants also agreed that the lack of a COP to UNCLOS and, more generally, the lack of reporting mechanisms in treaties, tend to result in weak compliance. The importance of reporting and full implementation of UNCLOS arts 205 and 206 was also highlighted several times, as well as the hope that these mechanisms and provisions would be built into and strengthened in the new Implementing Agreement. The benefits of a scientific advisory committee to the COPs were also discussed and GESAMP was mentioned as a possible existing body which enjoys the necessary legitimacy and credibility.

Finally, it was highlighted that reports done twice a year by international organisations (IOs) to the Secretary General of the UN are an opportunity for IOs to introduce issues or suggestions that may subsequently be brought up at the meeting of the UNGA and Oceans

and Law of the Sea and possibly be taken into account in its resolution. In this context, States and NGOs could raise to the IMO (through the coming up meetings of the MEPC or MSC for example), the FAO, the ISA or other fora important gaps that would need global attention such as new activities on the high seas, environmental pollution of the high seas from oil, HNS or nuclear and/or potential impacts of geoengineering activities. Best practices and expertise can also be shared among ocean governance fora, as is being proposed by the Scientific Group to the COP of the LC/LP for sharing with the ISA in the context of the development of the new exploitation code.

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