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ABLOS Conference - Monaco – 10-12 October 2005

Legal Aspects of Marine Scientific Research (MSR) and Part XIII of the UN Convention on the Law of the Sea (UNCLOS)

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Introduction

20 minutes is not long to speak on the subject of marine scientific research. As you will be aware, the provisions of UNCLOS in relation to the subject are extensive. They are contained in Part XIII of the Convention and are designed with a view to promoting international co-operation. All states and competent international organisations may conduct MSR¹ under the Convention, provided they promote international co-operation in marine research for peaceful purposes² and make known all pertinent information about such projects and make the results available³. As such, States are under a reciprocal obligation to promote actively the flow of information and scientific data and the transfer of knowledge resulting from research⁴.

Knowledge resulting from MSR should be made public, with particular emphasis on the transfer of results to developing states to facilitate their MSR capabilities independently of other states⁵. Unless otherwise agreed, communications concerning projects are to be made through appropriate official channels⁶ and states are to seek through competent international organisations the establishment of general criteria and guidelines to assist the former in ascertaining the nature and implications of marine research⁷.

It should be noted that UNCLOS is limited in its application. It does not for instance cover jurisdiction over scientific research in the territorial seas⁸. Nor does it apply to scientific research on the sea-bed or out to sea where it is not related to the marine environment, for example in relation to non-marine aspects of climate change. The convention does not therefore apply to MSR carried out by satellites, the usage of which for research has become increasingly common in recent years.

The Convention primarily governs MSR in the EEZs of coastal states. Attempts to develop an effective regime for regulating MSR by all states and competent international organisations has required some retreat from traditional high seas freedoms, including the unrestricted freedom to carry out MSR. To compensate for this, the rights of coastal states to conduct MSR in the exclusive economic zone (**EEZ**) and on the continental shelf have been extended. These two zones are the most significant jurisdictions in which MSR is conducted and obtaining a balance between the degree of control exercised by coastal states and other

¹ Article 238; UNCLOS

² Article 242 Paragraph 1; UNCLOS

³ Article 244 Paragraph 1; UNCLOS

⁴ Article 143; UNCLOS

⁵ Article 244 Paragraph 1; UNCLOS

⁶ Article 250; UNCLOS

⁷ Article 251; UNCLOS

⁸ Article 245; UNCLOS

nations is crucial in order to maintain and promote international co-operation in marine research.

Provisions relating to MSR represent a significant attempt to advance the gathering and interpretation of information for peaceful purposes. However, obstacles to achieving such goals have resulted from the complex negotiations surrounding the drafting and subsequent interpretation of the Convention. Where UNCLOS applies to regulate MSR, some provisions have provoked controversy and considerable academic debate. This paper will consider some of the key legal aspects of MSR and Part XIII of the Convention with particular regard to inconsistencies that impede progress towards the universal acceptance of the interpretation of the law of the sea in relation to MSR.

It is apparent that a universally applicable regulatory process for MSR is critical for the maintenance and promotion of a protected and peaceful marine environment whilst enabling international co-operation in the advancement of MSR and the sharing of its results.

The concept of Marine Scientific Research

Marine Scientific Research in its ordinary natural meaning would be interpreted as any form of scientific investigation, fundamental or applied, concerned with the marine environment. However, the LOS Convention does actually not define the term 'marine scientific research' referred to in its articles.

Such a definition would seem necessarily to encompass marine resource exploration or exploitation undertaken for the purpose of preservation of the marine environment. Alfred Soons takes the view that applied scientific research activities directed for a specific commercial purpose could also qualify as MSR and therefore be subject to the requirements of Part XIII.⁹

The safe and economic use of the oceans and the preservation of its stocks and resources is dependent on accurate, appropriate and sufficient scientific research. Knowledge gained from the oceans has implications for science and medicine as well as for applied sciences and technology. As technological advancements are made, the greater the need for protection of the oceans for all mankind. The importance of MSR should not be underestimated. It is relied on primarily for exploration and control over stocks and mineral resources and so affects the economic development of states. The issue of MSR is therefore an issue of key concern.

⁹ A. Soons (Marine Scientific Research and the Law of the Sea; 1986)

The heavy demands on the marine environment in recent years have lead inevitably to a pressing need to protect and preserve the seas from pollution, depletion and exhaustion of marine stocks and mineral resources as well as uncontrolled military activity. It follows that there is a necessity for a comprehensive mechanism for the regulation of MSR. The concept of MSR has in the recent past been the subject of abuse by being used as a guise to continue exploitation of stocks beyond agreed limits.

Some states, constrained by national or international quota limits, may not be able to obtain their desired level of exploitation, especially in areas designated a marine protected area. Such states may seek to exceed the threshold of their quota under cover of "a research programme". Such an approach had been pursued by the Japanese in their "scientific whaling programme" and an attempt by Japan to exploit the resources of southern blue-fin tuna past their quota limits is mentioned below¹⁰.

Similar practices have been pursued in relation to espionage and intelligence missions or for economic gain by aggressive states who wish to circumvent restrictions on undertaking 'military activity'. The mission of the Glomar Explorer in the 1970s demonstrated an attempt by the United States to undertake a secret intelligence operation under the cover of a 'Deep Ocean Mining Project'. One aspect of this operation was the search for manganese nodules which was used as cover for the raising of a soviet nuclear submarine that had sunk on the sea floor in 1968.

Competing interests

There are considerable grey areas and ambiguities in both the drafting and interpretation of UNCLOS Part XIII, nor is the Convention comprehensive in terms of its application.

There were inevitably competing interests between international states participating in negotiating UNCLOS. These tensions resulted in a compromise which, in part, accounts for some ambiguity in its drafting.

The degree of control to be exercised by a supra-national regulatory authority over MSR both in terms of the extent of coverage, its scope and content, provoked considerable debate between those states which preferred few restrictions on MSR and those which wished for a more paternalist approach. The interests of coastal states, who commonly wished to retain or expand rights in their EEZ and continental shelf, were juxtaposed with the interests of land locked states who wished to participate in MSR.

¹⁰ Southern Bluefin Tuna Cases (New Zealand v Japan; Australia v Japan); (International Tribunal of the Sea)

The philosophy behind regulation of MSR in the Convention is further complicated by the difference in thought between the developed and developing world. The scientific and technological capabilities required to conduct MSR are divided between the two, with industrialised nations that have sophisticated scientific and technological capabilities, holding a wide view on MSR and desiring that regulation should reflect an approach that there should be no restriction on research conducted in the 'high seas', such a term to be widely defined.

In contrast the developing states, suspicious of the developed nations' claim that they had unlimited freedom to conduct research in the vast areas of the oceans that fell within the scope of the high seas¹¹, feared the exploitation of the marine resources and the commercial exploration of the sea would be to their economic disadvantage and were also concerned that stricter regulation of sources of marine pollution would inhibit the speed of industrialisation.

Consequently, developing states sought to extend their jurisdiction and control over large areas of what had formerly been the high seas. They wished to include within the scope of regulation the right to regulate the conduct of marine scientific research, through a narrow definition of MSR, and incorporate complex provisos, including the right to refuse permission for MSR to take place at all.

Nations negotiating the Convention did largely agree, however, on the underlying approach to be taken to regulate MSR. A number of key principles emerged from the negotiations preceding the Convention which can be seen within the Part XIII Provisions. These include principles relating to the protection of the oceans for the benefit of all mankind, concentrating on control over the exploitation of resources; the "precautionary principle" which relates to a cautious approach to control over the natural resources of the ocean; and the necessity to protect the oceans for future generations through incorporation of controls over pollution.

Given today's limited time, I will focus on four areas which lack the clarity one would have hoped for:

- the meaning of peaceful purposes;
- preservation of the marine environment;
- exploitation of living and non living resources; and
- access to data issues.

¹¹ Churchill and Lowe (The Law of the Sea; 1988)

Peaceful purposes

The concept of peaceful purposes is a cornerstone in the philosophy underlying the Convention, particularly MSR. Nonetheless, this key principle has never been comprehensively defined. It is to be found in Articles 240/246(3) of Part XIII, but owing to the reluctance of maritime nations to control their armament and nuclear capabilities, a comprehensive formula was never settled upon.

The concept was introduced in relation to MSR to appease territorialists, keen to control military manoeuvres, exercises and testing in EEZs. Its scope was however, never determined due to the view of maritime nations who advocated an approach that stated that peaceful military activities were not, *prima facie* banned by international law.

The interpretation of "any peaceful purposes" in the Convention has led to inconsistencies in interpretation. Vukas argues that the prohibition of all military activity could not have been envisaged by those drafting UNCLOS since coastal states regularly conduct military activities in their EEZ and 'many of them count on the sea as an area of warfare'.¹² He suggests that the drafters envisaged the restriction of military activities to those undertaken by warships or commercial services, the purpose of which is to increase the readiness of a state for war. This interpretation of the ambit of military activities has, of course, led to considerable debate due to interpretation of Article 58 and the uncertain development of state practice with respect to residual rights in the EEZ.

Activities such as military testing of military devices and military exercises have proved particularly contentious. One school of thought takes the view that such activity would lead to endangering the proper advancement of MSR and the marine environment, whilst those of the opposing view claim the Convention has no jurisdiction to restrict any military activity that does not amount to a "threat or use of force" in accordance with the UN charter under Article 2(4). Clearly this is a difficulty.

Preservation of the marine environment

Marine environmental issues are another controversial issue. As a result of expanding human population and industrialisation of nations the oceans are receiving a growing amount of waste. The Convention attempts to preserve the marine environment for the benefit of

¹² B. Vukas (Peaceful uses of the sea, denuclearization and disarmament)

future generations by devising a procedure which monitors and records the marine environment in order to combat the issue of pollution. Since waste is often introduced to coastal waters, where it mixes with other pollutants, this is the zone where regulation is most specifically provided.

A coastal state is entitled to withhold its consent, in utilising its discretion for a marine research project to be conducted within its EEZ or on its continental shelf which 'introduces harmful substances into the marine environment (Article 246(5)). However, in view of the difficulty in determining what constitutes a harmful substance, and its lack of definition, it gives a coastal state a wide mandate to withhold its consent on this basis.

In addition, the Convention attempts to protect the marine environment from other hazards, such as deep drilling and the use of radioactive materials. Coastal states are entitled to withhold consent where there is to be drilling into the continental shelf, or the use of explosives or substances which may harm the marine environment (Article 246(5)). Andrianov and Danilenko have noted that the meaning of the term "drilling" is not given and it is not clear whether this notion covers selection of samples from surface deposits for purposes not linked with research for resources.¹³

Exploitation of living and non-living resources

Exploitation of living and non-living resources is a fundamental commercial concept underlying the Convention. The oceans of the world have historically been a crucial source of living and non-living resources and those negotiating the Treaty envisaged that regulation should protect the natural resources of the oceans as well as regulate their exploitation.

Under the Convention, the extent of permissible exploitation of resources in the oceans depends upon the area in which that exploitation takes place. The extent of permissible exploitation of resources in particular zones generates considerable debate. A coastal state is entitled to withhold its consent, under its discretion in relation to a maritime research project to be conducted in its EEZ or on its continental shelf which is of direct significance for the exploration and exploitation of natural resources, whether living or non-living (Article 246(5)).

Freedom of scientific research is key in identifying and monitoring movements of fish stocks and their exploitation on the high seas and within the EEZ of coastal states. Article 119 clearly gives authority for scientists to undertake such research in order to 'maintain and

¹³ Andrianov and Danilenko (Legal Regime of MSR according to UNCLOS: Prospects)

restore population of harvested species at levels which can produce the maximum sustainable yield'.

Coastal states are bestowed exclusive rights by UNCLOS to explore and exploit, conserve and manage the natural resources, living and non-living of its waters, sea bed and subsoil (Article 56(1)(a)). The corollary of this right is the responsibility to determine the allowable catch of living resources' (Article 61) in accordance with the 'best scientific advice available to it'.

MSR is therefore crucial to determine such thresholds through collection of data and interpretation of the results. Scientists are required to balance the development goals of the coastal state with the environmental concern requiring protection from over-exploitation. MSR has of course in the past been used as a guise in relation to exceeding quota limits. Japan attempted to circumvent the restrictions on commercial harvesting of the critically endangered migratory southern bluefin tuna species in 1998-2000. The catch limits, regulated by the Commission for the Conservation of southern bluefin tuna, were exceeded by over a quarter in pursuit of an 'experimental fishing program'. This resulted in a dispute between New Zealand, Australia and Japan, which led to New Zealand and Australia banning such Japanese vessels from their ports and the initiation of proceedings at the International Tribunal of Law of the Sea in Hamburg. The Tribunal granted an injunction against such exploitation, which was later lifted, but which contributed to an eventual agreement by Japan to abandon such a program¹⁴.

Coastal States also enjoy the exclusive right to exploit the non-living resources on the continental shelf and consent is required for MSR by other states in these areas. Alfred Soons notes that the wording in relation to this provision leaves doubt as to whether consent is required only for research involving physical contact with the continental shelf or for all research involving the continental shelf, irrespective of how it is conducted.¹⁵

Access to data

In order to advance MSR, a fundamental aim of the Convention was to facilitate exchange of information in terms of both the collection of raw data and its interpretation. Those negotiating UNCLOS were of the view that access to data would be required over the entire ocean, in light of migration of stocks of living resources and the spread of pollution. This would have to include access to information collected by coastal states in their EEZ's.

¹⁴ Southern Bluefin Tuna Cases (New Zealand v Japan; Australia v Japan); (International Tribunal of the Sea)

¹⁵ A. Soons (Marine Scientific Research and the Law of the Sea; 1986)

Where research is carried out in coastal waters by institutions or nationals from a coastal state, such information is generally to be made available in accordance with Article 249 through publication and dissemination. Where research is carried out by institutions and nationals from one state in the coastal waters of another state, the researching state is to provide, on request, access to results of research and data, as well as assistance in its interpretation (Article 249(1)(d)).

This reflects the concerns of developing nations that developed states could conduct MSR in their EEZ to their disadvantage. It also highlights one of the underlying principles of the Convention, international co-operation.

Montserrat Gorina Ysern has noted that the current international regime for MSR under UNCLOS does not deal with proprietary title over MSR data results.¹⁶ Results made available to the public often lead to developments in terms of marine products and processes which require protection as an intellectual property right. Such rights are regulated by private agreements rather than under international regulation. Article 241 states that MSR "shall not constitute the legal basis for any claim to any part of the marine environment or its resources". Gorina Ysern has argued that claims regarding intellectual property rights would constitute a "claim" under Article 241. It will be interesting to see whether this theory is put to the test.

Conclusions – a compromise agreement

It is apparent that regulation in relation to MSR is not yet firmly settled and there is ambiguity in certain key areas. This is the result of balancing the various competing interests that became evident during the negotiations of the Convention. In particular, the views of coastal states and land locked nations were at odds due to concerns over the degree of control to be exercised over MSR by coastal states both in their EEZ's and on their continental shelf. Further, whilst the developing world desired strict regulation of MSR, the developed world took a more relaxed approach.

Greater clarity would be achieved by the elaboration of several key principles in UNCLOS. As noted, the concept of "marine scientific research" itself remains undefined. The extent of permitted military testing and military exercises remains unclear in the absence of a strict definition of one of the underlying principles of UNCLOS, that of "peaceful purposes".

¹⁶ Montserrat Gorina Ysern (Legal issues raised by profitable biotechnology development through MSR; 2003)

Greater predictability is required in determining whether a coastal state can legitimately withhold its consent for the conduct of marine scientific research within its EEZ. It is unclear at what stage the coastal state is entitled to withhold its consent in allowing MSR to be conducted within its EEZ on the grounds that there may be harm to the marine environment, or where a marine scientific project is "of direct significance to the exploitation and exploration of natural resources". Clearly, greater elaboration of the general criteria and guidelines within the regime would prevent coastal states from subjective analysis of the grounds on which it can withhold its consent.

Effective protection of MSR data results is clearly desirable and could be achieved by way of international regulation rather than the regulation of such rights by private agreement. The current situation hinders international co-operation, a key principle of UNCLOS.

A universally applicable regulatory process for MSR is therefore required to promote peaceful protection of the marine environment.

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October 2005

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