

# **Marine Scientific Research and the Law of the Sea: the Balance between Coastal State and International Rights,**

## **RIGHTS AND RESPONSIBILITIES- TIME FOR A RETHINK?**

### **INTRODUCTION**

The United Nations Convention on the Law of the Sea (1982) has codified many rights previously assumed by States in relation to the waters and seas surrounding them. The apparent imbalances in the control of and the distribution of the wealth of the sea and the seabed was addressed in the hope that developing States would be able to enjoy in the rewards.

It is obvious that many States have now claimed and are exercising their rights in accordance with the Convention and this reflected in the national legislation of these States. Attendant on these rights are of course many responsibilities but acceptance and compliance with these responsibilities seem to have been given a much lower priority.

### **MARINE SCIENTIFIC RESEARCH**

Marine scientific research is one of these rights contained in the Convention.

Article 238 of the Convention states

*All States, irrespective of their geological location, and competent international organisations have the right to conduct marine scientific research subject to the rights and duties of other States as provided for in this Convention.*

Further to these rights are the obligations in the Convention and in particular

Article 239

*States and competent international organisations shall promote and facilitate the development and conduct of marine scientific research in accordance with this Convention.*

The question is:

“How many States actively promote marine scientific research?”

### **Definition**

The term ‘marine scientific research’ is not defined in the Convention and so immediately an anomaly arises as to what is research, where can it be undertaken, who is responsible for conducting the research and to whom does the data belong.

There are those who will argue that certain types of research, or perhaps more specifically hydrographic data gathering, were never intended to be considered as marine scientific research. It will prove exceedingly difficult to exclude them because of their interrelation with other sciences and because it will be almost impossible to implement any of the Articles of the Convention without this research being undertaken and made available. For the purpose therefore of this paper all data scientific data gathering within the zones allowed for in the Convention will be considered as 'marine scientific research'.

### **Maritime Zones**

Rights exist to enable a coastal State to claim maritime zones such as internal waters, territorial seas, contiguous and exclusive economic zones and a continental shelf claim.

The limits of all zones allowed by the Convention require the determination of the 'normal baseline', the positions of the terminals of straight baselines and, if necessary for a delimitation, the correlation of this information with that of an adjoining or opposite State. For a Convention continental shelf claim to be made the position of the foot of the slope that is the furthest seaward, the 2500 meters isobath and sediment thickness in certain areas, must be determined.

### **Territorial Seas (Article 245)**

Territorial seas are regarded as sovereign territory of a coastal State, provided that the delimitation and delineation are internationally accepted and therefore in accordance with the provisions of the Convention. The only right available to other States in the territorial sea of another State is the right of innocent passage. The coastal State therefore has exclusive right to regulate, authorise and conduct marine scientific research in its territorial sea. Research may only be conducted with the express consent of and under the conditions set by the coastal State.

As a coastal State has sovereignty over its territorial waters this implies that it may conduct any form of marine scientific research provided it does not interfere with the right of innocent passage of vessels in those waters. Vessels in transit passage in straits enjoy similar status when marine scientific research is being conducted. Vessels in transit or exercising right of innocent passage may not, however engage in any form of marine scientific research or hydrographic activity without the permission of the coastal State.

### **Exclusive Economic Zone and on the Continental Shelf (Articles 246 & 247)**

In the exclusive economic zone and on the Convention continental shelf, coastal States have sovereign rights for the purpose of exploring and exploiting conserving and managing the natural resources whether living or non-living and any related marine scientific research. The resources may be in the waters superjacent to the seabed, the seabed, or its subsoil as well as utilisation of the effects of wind, wave and current.

Beyond 200nm research may also only be conducted by other parties with the permission of the coastal State. This Article requires the coastal State, in normal circumstances, which may be in spite of the absence of diplomatic relations, to grant their consent for

research for purposes and to assist in the increase the knowledge of the marine environment in all its disciplines.

The coastal State has the right to withhold permission if the research is intended directly for the exploration or exploitation of the natural resources of the coastal State. Also if drilling or the use of harmful substances or explosives are proposed, if it requires that artificial islands installations or structures are be built in these areas and if the applicant State or international organisation has not complied with previous arrangements made with the coastal State.

The exception to this right on the continental shelf beyond 200 nautical miles is where the coastal State has not designated a specific area as being an area where it will conduct its own research. The coastal State is obliged to give adequate notice of these designated areas.

### **International Organisations and International Cooperation**

Article 242 requires the following:

- 1) *States and competent international organisations shall, in accordance with the principle of respect for sovereignty and jurisdiction and on the basis of mutual benefit, promote international co-operation in marine scientific research for peaceful purposes.*
- 2) *In this context, without prejudice to the rights and duties of States under this Convention, a State, in the application of this Part, shall provide, as appropriate, other States with a reasonable opportunity to obtain from it, or with its co-operation, information necessary to prevent and control damage to the health ad safety of persons and to the marine environment.*

A coastal State has the further responsibility to cooperate with competent international organisations of which it is a member. Should such an organisation express the intention to conduct research in the EEZ or on the continental shelf the coastal State has to state its objection within four months of the notification of this intent. Failure to do so will imply automatic consent.

### **Further Rights and Obligations**

Although all States, irrespective of their geographical location, have the right to conduct marine scientific research this right is providing that the research is not in conflict with the rights and duties of other States provided for in the Convention. The conduct of marine scientific research may be divided into two categories:

- a) Research under the jurisdiction of the coastal State.
- b) Research under the jurisdiction of the Authority.

The Convention has a number of general provisions which apply;

- a) marine scientific research shall be conducted exclusively for peaceful purposes;

- b) marine scientific research shall be conducted with appropriate scientific methods and means compatible with this The Convention;
- c) marine scientific research shall not unjustifiably interfere with other legitimate uses of the sea compatible with this The Convention and shall be duly respected in the course of such use;
- d) marine scientific research shall be conducted in compliance with all relevant regulations adopted in conformity with this The Convention including those for the protection and preservation of the marine environment.

It should be noted that “peaceful purposes” referred to in Article 240 (a) are to be read in accordance with the relevant Article of the UN Charter that interprets “peaceful purposes” as being non-aggressive or defensive purposes.

Coastal States are expected to consent to marine scientific research by other States and international organisations providing certain conditions are met. These include;

- a) the research is not related to the exploration or exploitation of the living or non-living resources in the region;
- b) the research does not involve drilling on the continental shelf, the use of explosives, the use of harmful substances, the construction, operation or use of artificial islands, installations or structures;
- c) in accordance with The Convention information related to projects to be undertaken in an area have to be provided to the coastal State. This includes nature and objective of the project, the methods and means, including the names, tonnage, type and class of vessels and equipment to be used, the precise geographical area, the dates of first arrival or deployment of vessels or equipment and the final departure date, the sponsoring institute its director and person in charge’s names and the extent to which the coastal State may participate in the project. If any of this information is inaccurate or not forthcoming or if there are any other outstanding it could be grounds to deny consent;
- d) the coastal State may designate specific areas where exploration will shortly commence and therefore decline consent
- e) the coastal State may also undertake projects with international organisations.

It will be difficult to control the activities of research vessels unless representatives of the coastal State are onboard the vessel during the period of the research. With modern technology, it is possible for a foreign vessel to undertake many different types of research without a coastal state being aware of it.

### **General Convention Rights**

The Convention includes the following rights in favour of the coastal State and it is interesting to note how many of these rights require some form of research:

## **Navigation**

There are rights to legislate on certain matters and impose these law in certain zones, to control marine traffic by the imposition of traffic separation and ship reporting schemes, to safeguards for straits used for international navigation, as a border State to a strait to legislate for the safety of navigation, pollution prevention or control, fishing and contraventions of State customs, fiscal, immigration emigration or sanitary laws or regulations. Safe navigation through the waters of the coastal State is vital to the State meeting its commitments within the Convention for the protection of the environment and the resources.

The coastal State will be obliged to provide the necessary, nautical charts, publications and other maritime safety information necessary for safe navigation in its waters. While this is now a requirement of this Convention it is also a requirement of the International Maritime Organisations Convention on the Safety of Life at Sea (SOLAS). There is even a requirement in international customary law for a coastal State to advise shipping of dangers of which it is aware.

The Safety of Life at Sea Convention (SOLAS) obligates its Contracting Governments to;

*“undertake to arrange for the collection and compilation of hydrographic data and the publication, dissemination and keeping up to date of all nautical information for safe navigation.(Chapter V Regulation 9(1)*

In addition the coastal State undertakes to arrange for the establishment and maintenance of such aids to navigation, including radio beacons and electronic aids, as, in their opinion, the volume of traffic justifies and the degree of risk requires, and to arrange for information relating to these aids to be made available to all concerned. (Chapter V Regulation 13)

It is obvious that this data and these services are vital to safe navigation off the coast of a State and all the implications that failure to provide will entail. The question must be asked:

“If the coastal State does not undertake these surveys and provide this information in its own zones who will?”

## **Resources**

Natural resources that exist in or under the sea are of great interest to all States, whether they are coastal States or not. Non-coastal States were initially concerned that they would not have access to the exploitation of these resources, but it was soon realised that other factors had to be considered. These included research, exploration, protection and an equitable sharing of the resources. The idea that a State could unilaterally claim individual rights to the sea and its wealth was contested at the UN General Assembly in 1967 by Ambassador Arvid Pardo of Malta, when he called for the sharing of this wealth as the Common Heritage of Mankind. This philosophy was given substance in the Convention and emphasis was placed on the rights, privileges and responsibilities

of States, whether coastal, landlocked or geographically disadvantaged. Two types of resources were categorised, renewable and non-renewable.

### **Utilisation of Resources**

Linked with the resources are their uses and they may be categorised as follows:

- a) extractive uses- activities involving removal of resources from the environment;
- b) intrusive uses- those that disrupt the seabed or may degrade the environment and
- c) benign uses- activities that take up space but do not impact the seabed or environment.

In the 'extractive' category are oil and gas, living resources, minerals and energy systems. In the 'intrusive' category are pipelines, vessels and their potential spills, waste disposal, acoustic activity and dumping and in the 'benign' category are instruments with their related deployment, security systems, navigation research, monitoring and sanctuaries and recreational activities.

There are rights of control of exploration and exploitation of the resources in the zones, to conduct research and also to the benefits of other research undertaken in it's waters, to protect it's environment from pollution, to protect it's archaeological and historical heritage, to expect co-operation on a regional and global scale and to preferential treatment for technical assistance if a developing State.

### **Mobile Resources**

A comparison of the value of the various resources of the sea that are being harvested indicates that fishing is an industry that is worth four times that of all oil production and about twenty times the value of all the other resources combined. Like all renewable resources, a major factor is management and protection based on sound research. This is to ensure that the resource is neither depleted to the point where it is beyond recovery nor enhanced beyond its natural levels so as to upset the natural food chain.

Control of research and the management of fish resources, which had been under limited international control up to the time of UNCLOS III, has now largely been shifted to the coastal State. The transfer of these responsibilities to a coastal State gives that State greater opportunities to exploit these resources. In some areas this could place an unacceptable load on coastal States that neither have the capacity to harvest these resources nor the potential to manage them. This could, and has, led to illegal exploitation and over-exploitation of areas that were previously governed by international agreements. The coastal State is obligated to work with credible international organisations of which there are many.

As an example in fisheries management the following international organisations exist and could be expected to undertake research. They are established either under the aegis of the UN Food and Agriculture Organisation (FAO) and funded by the UN or exist as a result of regional or bilateral the Conventions or agreements.

There are the Regional Fisheries Advisory Commission for the Southwest Atlantic (CARPAS), Fisheries Committee for the Eastern Central Atlantic (CECAF), General Fisheries Council for the Mediterranean (GFCM), Indian Ocean Fisheries Commission (IOFC) and Western Central Atlantic Fisheries Commission (WECAFC).

Regulatory bodies responsible for specific species preservation include, Inter-American Tropical Tuna Commission (IATTC), International Commission for the Conservation of Atlantic Tunas (ICCAT), International Halibut Commission (IPHC), International Pacific Salmon Fisheries Commission (IPSFC), International Whaling Commission (IWC) and the North Pacific Fur Seal Commission (NPFSC).

Regional bodies include, Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), International Baltic Sea Fisheries Commission (IBSFC), International Commission for the Southeast Atlantic Fisheries (ICSEAF), International North Pacific Fisheries Commission (INPFC), Mixed Commission for Black Sea Fisheries (MCBSF), Northwest Atlantic Fisheries Organisation (NAFO previously ICNAF), International Commission for the Northwest Atlantic Fisheries (ICNAF), North-East Atlantic Fisheries Commission (NEAFC), Northwest Pacific Fisheries Commission (NPFSC), Permanent Commission for the Conference on the Use and Conservation of the Marine (PCCUCM) and Small Resources of the South Pacific (SPPC).

This is only the number of international bodies involved in one part of the Convention but it will give an indication of the possible number that could be involved in all aspects. It is necessary therefore for a coastal State to be aware of all international organisations that could, in some way, wish to undertake, assist or be party to marine scientific research in its zones.

### **Landlocked State Rights**

With justification disadvantaged States have held that the seaward extension of coastal States rights to the exclusion and detriment of other States could no longer be accepted. Most States have accepted that a more liberal approach to the rights of all States should be adopted and that the resources found in the maritime zones should be equitably harvested and distributed. The responsibilities placed on a coastal State by an adjacent land-locked or geographically disadvantaged State can be considerable and could require extensive research to be undertaken to meet these responsibilities.

The non-living resources in the exclusive economic zone of the coastal States in the region need not be shared with any other State as an obligation of the Convention.

Living resources are treated differently however, and landlocked and geographically disadvantaged States may be able to participate in the exploitation of any surplus of these resources. These will also, however, be subject to bilateral or regional agreements.

A coastal State will have to conduct research to establish the maximum sustainable yield (MSY) and maximum exploitable yield (MEY) in its zones before it can enter into any negotiations with landlocked or geographically disadvantaged States.

### **Exploration and Exploitation**

UNCLOS III considered the control of marine scientific research as part of the concept of the Common Heritage of Mankind. While it is possible to declare an exclusive economic zone it may not be feasible for the State to harvest the benefits of the resources in the zones due to the lack of data, expertise or funding. It was felt during UNCLOS III therefore that not only should the exploitation of the resources in the zones be protected but also the scientific knowledge that would be gained by research programmes. Included in these rights is the protection of the marine environment.

It will be necessary to conduct research in the maritime zones to determine the extent of reserves and to establish optimum production and harvesting levels. In addition research may be undertaken for scientific or military purposes. This would include geological, hydrographic, and oceanographic research and could include drilling into the continental shelf, the use of explosives, the use of noxious substances, interference with the surface and subsoil of the ocean floor, the erection of structures and the discharge of waste.

While all States Party are entitled to conduct marine research programmes it is conditional on the protection of the rights of other States. These rights would include protection from damage and pollution of their marine reserves and environment. Although States that conduct research are required to promote actively the development and transfer of data and technology, particularly in developing States, great care should be taken by States conducting research whether it be in their own maritime zone or, by consent, in another States area and the involvement of international organisations in the process is therefore important.

Researchers seek thick sequences of marine sediment with layers that are of coarse material. It is these coarse material layers that act as permeable reservoirs for oil. Drilling is required to confirm the presence of either oil or gas and production may only start much later. This is a major factor for any exploration to be undertaken and control of these activities is vital.

Electrical (usually electrical-conductivity) and gravity surveys are the most successful methods to locate minerals. These methods are used to determine underground structures and sometimes specific ores. Side-scan, remote-sensing devices, television cameras and submersibles are also used. Where the mineral lies on the surface of the seabed, like manganese nodules the exploration to locate areas of concentration is simpler. Vast areas of the seafloor contain various minerals in economic quantities. As the polymetallic sulphides are to be found in areas of crustal spreading the surveys are directed to those areas and are usually successful in locating economically viable deposits.



### **Pollution Implications**

In accordance with The Convention States Parties are obligated to take all measures necessary, individually or jointly, to prevent, reduce or control pollution of the marine environment. This includes all activities under their jurisdiction and includes the following threats and effects of pollution from maritime sources, land-based sources, through the air and from dumping;

- a) the release of toxic, harmful or noxious waste,
- b) pollution from vessels, deliberately or as a result of accidents and collisions,
- c) pollution from installations, structures and devices used for exploration or exploitation,
- d) pollution from any other installation, structure or device capable of polluting the marine environment.

Careful research, monitoring and enforcement are necessary for a coastal State to successfully meet its obligations in the Convention and without the necessary research it would not be possible to do so.

### **Conclusion**

Marine scientific research is necessary for many and various reasons. This research relates to the exploration, exploitation and protection of resources and the environment, particularly the environment in which the resources are found. Some of the responsibility to undertake this research is that of the coastal State. States and recognised international organisations concerned in exploration and exploitation in the maritime zones of another coastal State have responsibilities to ensure that marine scientific research and all related activities are correctly and proficiently undertaken. International maritime transport institutions and those responsible for the overall improvement of the knowledge of the marine world and its environment should work in close co-operation with a coastal State and all other parties concerned. The research will include bathymetry, oceanology, oceanography, marine geoscience and precise positioning accuracy.

Since the Convention came into force, and in some instances before then, much emphasis has been placed on the rights of the States Party to it. Many of the attendant responsibilities are being neglected and it must surely be recognised that, if the Convention is to be successful and all the well meant intentions that led to the Convention being signed and ratified, more consideration will have to be given, by all concerned, to the responsibilities contained therein.