

**STATEMENT BY AMBASSADOR SATYA N. NANDAN,  
SECRETARY-GENERAL OF THE INTERNATIONAL SEABED AUTHORITY  
TO THE 5<sup>TH</sup> MEETING OF THE  
UNITED NATIONS INFORMAL CONSULTATIVE PROCESS  
ON THE LAW OF THE SEA - 7 – 11 JUNE 2204**

**BENTHIC BIODIVERSITY AND THE WORK OF  
THE INTERNATIONAL SEABED AUTHORITY**

The International Seabed Authority was established to manage the mineral resources of the international seabed area, which are the common heritage of mankind. Whilst the Authority's role is primarily concerned with prospecting, exploration and exploitation of mineral resources, it also has a broader role concerning the protection and preservation of the marine environment (including its biodiversity) and the promotion of marine scientific research in the international seabed area as stated in articles 143 and 145 of the 1982 Convention on the Law of the Sea. In order to protect and preserve the environment, the Authority has created a series of regulations and guidelines for contractors (i.e. those who are licensed by the Authority to undertake prospecting and exploration of the deep seabed and its resources). The regulations on prospecting and exploration for polymetallic nodules were adopted in 2000.<sup>1</sup> Since determining the techniques by which mining will occur is currently speculative, a major component of these regulations concerns the environment and how to protect it during any potential activities. Amongst other requirements, the regulations ensure that a contractor shall *“take necessary measures to prevent, reduce and control pollution and other hazards to the marine environment arising from its activities in the Area”*.<sup>2</sup> The regulations are based on a precautionary approach as contained in Principle 15 of the Rio Declaration. As a complement to the regulations the Legal & Technical Commission of the Authority has issued guidelines, by way of recommendations, for implementing the Regulations. These were based on the recommendations of a workshop of scientists and other experts convened by the Authority to assist with the preparation of the guidelines. The recommendations describe in great detail the procedures required when acquiring baseline data and monitoring any impact on the marine environment as a result of any of

the regulated activities. In addition, standard methods are suggested so that all data from different sources is comparable.

In 2002 the Authority began preparing the regulations for the prospecting and exploration of polymetallic sulphides and cobalt crusts using the same considerations as those used when drafting the regulations for polymetallic nodules. Unlike polymetallic nodules, which are found on abyssal plains, polymetallic sulphides are associated with hydrothermal vents, and cobalt crusts are associated with seamounts. The draft regulations as prepared by the Legal & Technical Commission were presented to the Council of the Authority at its 10<sup>th</sup> session last week. (Document ISBA/10/C/WP.1) The regulations also contain extensive provisions on the protection and preservation of the marine environment in which these resources are found, taking into account their special sensitivity. Furthermore the Authority will hold a workshop in September with a view to developing procedures required for acquiring baseline data and monitoring any impact on the marine environment from activities relating to the mineral resources. The recommendations and guidelines from the workshop will be considered for adoption by the Legal & Technical Commission of the Authority. In developing the regulations, guidelines, procedures and recommendations the Authority works very closely with the marine scientists who have hands-on experience and are currently engaged in research activities relating to vents and seamounts.

In addition to considering the effects of mining activities an issue which needs to be deliberated upon, as highlighted during the tenth session of the Authority, is the effect scientific research may have on the marine environment. It is difficult to isolate much of the work that will be carried out by contractors during the initial stages of investigating the mineral resources from that of marine scientific research. While the Authority has a responsibility to promote and encourage marine scientific research in the Area “*for the benefit of mankind*”<sup>3</sup> and to coordinate and disseminate the results of such work, it has the responsibility to ensure that work carried out as marine scientific research does not compromise any of the standards that are required from contractors.

Any human activity in the international seabed area will have some form of effect on the marine environment. The aim of the Authority is not to prevent the use of the international seabed area and its resources but to encourage activities whilst minimising negative impacts. Assessing the impact that marine scientific research has on the marine environment is not practical. To measure such impact research must be carried out. In the absence of such research a precautionary approach must be adopted. Most scientists and scientific research institutions tend to work by this principle. As far as the International Seabed Authority is concerned, it could provide standardised recommendations for carrying out prospecting and marine scientific research in the international seabed area. Some researchers have already developed a voluntary code of conduct for their activities and this could form the basis for any guidelines or recommendations produced by the Authority. Through a series of workshops the Authority has interacted with many of the scientists carrying out marine scientific research in the deep ocean including some who prepared a draft voluntary code of conduct. The draft is entitled “*Possible Elements for a Code of Conduct to Conserve and Sustainably Use Hydrothermal Vent Sites*”. It was prepared by the members of InterRidge and is for the consideration by the InterRidge Steering Committee. A number of these scientists will participate in our next workshop to help the Authority develop its guidelines and recommendations. The problems that the draft before the InterRidge Steering Committee addresses is described in the draft as follows:

*“Despite the appearance of physical isolation and in many cases their apparent inaccessibility because of their depth, the more accessible hydrothermal vent sites in the world’s oceans, both within and beyond the limits of national jurisdiction, are potentially threatened by human activities. The activities most likely to involve hydrothermal vent systems and their associated biological communities are seabed mining for associated polymetallic sulphide deposits, submarine-based tourism (SBT) and marine scientific research (MSR).*”

*Of these, MSR and SBT pose the most immediate threat to hydrothermal vent systems and their associated biological communities. Use conflicts are also increasingly common. As natural resource-based activities MSR and SBT need to be placed on a sustainable footing in order to conserve biodiversity, maintain the scientific value of the most accessible sites and to minimize conflicts.*

*With limited exceptions, at present, international and national legal frameworks do not offer definitive tools to place MSR and SBT activities on a sustainable basis and to minimise use conflicts at hydrothermal vent sites. Therefore the user community – the marine scientific research community and tour operators – should take the lead in ensuring conservation and sustainable use and minimising use conflicts.*

*A code of conduct may also be useful in situations where MSR and SBT activities involve hydrothermal vents in jurisdictions where no national legislation exists or is planned. By this logic a code could also be applied to activities within the International Seabed Area beyond limits of national jurisdiction.”*

I would like to compliment the scientists for preparing this draft code as it reflects their sense of responsibility and concern for the sensitive marine environment around vents. This is a pioneering initiative. The basic principles contained in the draft would be a very useful basis for discussion at the Authority's next workshop for preparing recommendations on general practices for prospectors and explorers of the deep seabed.

Since 1998 the Authority has convened a series of international workshops on specific issues related to deep seabed mining, with the participation of internationally-recognized scientists, experts, researchers and members of the Legal & Technical Commission as

well as representatives of contractors, the offshore mining industry and member States. The proceedings of these workshops have been published by the Authority. A main thrust of the environmental workshops has been international collaboration and standardisation of data collection so that research can be carried out more effectively and efficiently. Other subjects that have been covered by the workshops include the proposed mining technologies, potential mineral resources other than polymetallic nodules and the development of a geological model of the Clarion-Clipperton Zone (CCZ).

One consequence of these workshops has been the preparation of a set of standardised techniques to be employed by contractors and scientists carrying out studies endorsed by the Authority when measuring environmental variables. Standardisation allows for the comparison of results between studies carried out by different groups of scientists.

Another consequence of the discussions at the various workshops has been the participation of the Authority in a major research project referred to as the Kaplan Fund project because of its main funding source, the J.M Kaplan Fund.<sup>4</sup> The purpose of the Authority's collaboration in this project is to acquire information on the biodiversity, species range and gene flow in the abyssal Pacific nodule-bearing province with a view to predicting and managing the impacts of deep seabed mining on the marine environment.

The Kaplan Fund project focuses on comparing the species at three sites spanning the mining zone in the Clarion Clipperton Zone. The organisms will be identified using both traditional techniques and state-of-the-art molecular methods to measure gene flow in order to determine the distribution of some of the main organisms in the seabed. This will assist the Authority in determining what regulations are necessary to protect and preserve the marine environment in the mining area. The Kaplan Project involves scientists from the University of Hawaii, the Natural History Museum of London, JAMSTEC of Japan, the British Antarctic Survey, IFREMER of France, the Southampton Oceanography Centre and some of the contractors with the Authority namely, KORDI of South Korea and COMRA of People's Republic of China.

This is a multi-year project which has already undertaken two cruises to collect samples which have already been analysed. The results were reported to the Legal & Technical Commission of the Authority at its meeting last week. The third cruise is currently underway.

The Authority has established a Central Data Repository (CDR) for data and information relating mainly to marine mineral deposits. This is available on the Authority's website. The Authority has plans to expand on this database by creating online databases of environmental and biological information. This will make data on the CCZ, and later the Indian Ocean and other areas of potential mining activity, available in one place for scientists and contractors to access. In addition to this, a freely available online bibliographic database is being created so that information on publications relevant to deep sea mining, the associated biodiversity and other environmental conditions in the areas of interest are available to the public. This is especially important to researchers and contractors in developing countries who may not have access to vast research libraries or expensive bibliographic databases.

Another example of a geological project that has implications for the biological sciences is the geological model of the CCZ which, as stated earlier, is currently being developed by the Authority. The geological model is a predictive model to facilitate a resource assessment in the CCZ and to assess areas which have been under sampled but may have valuable deposits. The predictive aspect of the model will be based on the relationships that occur between various parameters and nodule grade and abundance. Two of these parameters are productivity and the calcium carbonate depth, both of which have implications on the biological environment. The model will also delineate biological habitats and allow biologists to plan sampling within the CCZ more accurately as they will have a better understanding of the spatial arrangements of different habitats. At a recent presentation of the model interest was expressed by the biological community who were interested in the implications of the geological model on the planning of biodiversity investigations.

As has already been mentioned, the Authority is now preparing the rules and regulations that are relevant to polymetallic sulphides and cobalt crusts and as such has to address the issues that are associated with the biodiversity of hydrothermal vents and seamounts. Hydrothermal vents and seamounts are similar in that each vent and seamount is a biologically distinct environment which, particularly in the case of seamounts, are isolated and potentially fragile. To a great extent the environments around the vents and seamounts are endemic. This has implications for the creation of preservation zones required by our regulations as, for example, the environment on one seamount can be vastly different from the next. Also different zones within each area can be vastly different to each other. Both types of environment are very useful in understanding patterns of marine biodiversity and species distribution as they are both seen as 'stepping stones' for species to move over vast distances through biologically inhospitable conditions. Therefore, seamounts and vents are both at serious risk from any human interference. They are potentially fragile ecosystems that we need to know more about in order to manage any impacts. To fulfill this aim the title of the 7<sup>th</sup> annual workshop convened by the Authority will be "*Polymetallic sulphides and cobalt crusts - their environment and considerations for the establishment of environmental baselines and an associated monitoring programme for exploration*". This workshop will be held from the 6<sup>th</sup> to the 10<sup>th</sup> September 2004 at the Authority's headquarters in Kingston, Jamaica. It will be partially devoted to reviewing what is currently known about the biological and environmental conditions of both seamounts and hydrothermal vents. The workshop attendees will include, as is usual, experts in the relevant fields and will result in recommendations to the Authority regarding the management and regulation of activities in these deep-sea environments.

Not all of the activities that cause potential negative impacts on the environments are obvious. Since 1999 exploration dives in submersibles have been carried out in international waters as part of the eco-tourism industry. Whilst these dives increase the participants understanding of the marine realm, they require no approval and have great potential to impact the environment. Hydrothermal vents and seamounts are diverse

environments and therefore are attractive sites for tourists and so are at greater risk from these activities than the abyssal plains.

There has been a great deal of discussions recently regarding the impact of bottom trawling for fish on seamounts. Seamounts are areas of high productivity and are often associated with large aggregations of fish stocks and as such are becoming a focus for the fishing industry. As many seamounts are small in size fishing often occurs in a localized area and can cause a noticeable impact on the ecosystem of the seamount, particularly when certain fishing methods are used. The concern for impact caused by bottom trawling on seamounts was clearly shown by scientists at a recent international deep-sea biology symposium. Certain seamounts are now considered protected areas where bottom trawling is banned. One issue arising from this concerns the Authority. If cobalt crust mining is to go ahead then we must ensure that the measures taken regarding fishing activities on seamounts and regulations for mining activities do not conflict.

Researchers are continuously making new discoveries in the marine environment and this indicates the lack of understanding that we have of this vast realm. Protecting the marine environment requires management. To do this effectively there needs to be a better knowledge of this immense ecosystem. This will only occur through increased research and exploration which requires collaboration by many entities to share the effort and costs. To achieve this the Authority is making its modest contribution as a catalyst by providing a forum for such collaborative effort in respect of the deep seabed and disseminating the results of research. It is actively pursuing this goal through a series of workshops and through its support of marine scientific research activities in the deep seabed. At the last UN General Assembly I stated that more could be done to promote, sustain and manage an effective international program of ocean exploration. I proposed that the Assembly consider adopting a declaration urging states, scientific institutions, the private sector and others to give high priority to research and exploration of the oceans. In doing so, the General Assembly will give recognition to the vital role which oceans play in sustaining human life on planet Earth and give new impetus to marine scientific research and exploration.



To conclude, the Authority has already prepared environmental regulations and guidelines governing the activities relating to polymetallic nodules and is developing regulations and guidelines to encompass polymetallic ferromanganese sulphides and cobalt-rich crusts. It has provided contractors with recommendations on good practices concerning environmental baseline studies and monitoring of the marine environment. It will continue to promote conservation and management of the fauna and flora of the deep seabed to ensure that any new uses of the deep ocean are sustainable. It is prepared to cooperate and collaborate with other agencies and bodies in this endeavor.

-----

---

<sup>1</sup> Regulations for prospecting and exploration for polymetallic nodules in the Area, 2000. ISBA/6/A/18.

<sup>2</sup> Regulation 31(3). This duty is said to exist pursuant to article 145 of the Convention and paragraph 2 of regulation 31.

<sup>3</sup> Article 143.

<sup>4</sup> The J.M. Kaplan fund is a family foundation based in New York city that supports, *inter alia*, worldwide projects to protect the global commons.