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## EMINENT SCIENTIST ADDRESSES IMLI STUDENTS



*Prof. Mario Ruivo addresses IMLI Class 2006-2007.  
With him are President Emeritus of Portugal, Mario Soares, and Prof. David Attard.*

Prof. Mario Ruivo visited IMLI and addressed the students on October 11, 2006. He was with President Emeritus of Portugal, Mario Soares. Prof. Ruivo is Chairman of the Intersectorial Oceanographic Commission/Ministry of Science, Technology and Higher Education (COI-MCTES) and Member of the Governing Board of the International Ocean Institute (IOI), Malta.

The full text of Prof. Mario Ruivo's speech follows:

## **Ocean, Science and Action Speaking Notes**

*By Prof. Mário Ruivo*

*Member of the Governing Board of the International Ocean Institute (IOI)*

*The Ocean has returned to the International and the States' Agenda as a result of the increasing perception of the importance of the sustainable development and management of maritime areas for the future of Humankind.*

*Bearing in mind the “New Regime for the Ocean”, which has been gaining shape at a global scale, it is instructive to make a balance of, and attempt to put into perspective the future of international cooperation in this domain. If, by the end of the 60s, scientific activity was already considered an indispensable component of economic development and maritime power, the application of Marine Sciences in the three-dimensional occupation of the Ocean has been reinforced, either with civilian or military objectives. In the last decades, research has shown a tendency to move from a sectoral to a multidisciplinary and, even, an interdisciplinary approach. The temporal and spatial scales of observation have expanded and allowed a better understanding of natural processes and their interactions with impacts of anthropogenic origin. The less known oceanographic regions are being explored through mapping of the seafloor, analysis of the structure and dynamics of the water masses, and the progress of knowledge about marine ecosystems functioning, the modeling of processes and forecasting of trends. The role and value of the Ocean as an essential support for life on our Planet is better understood and efforts are underway to predict its evolution and implications to society.*

*Along with the potentials of the Ocean as a source of “traditional” resources (such as fisheries, minerals and energy, namely oil) and, some decades ago by the expectations of exploitation of the polymetallic nodules located in the sea bed, in more recent years, the methane clathrates from the continental margins and the role of the biodiversity for the equilibrium of the natural processes of our Planet opened a new phase of Ocean exploitation. I refer also to the potentials of related genetic resources, which have opened the way to the development of innovative biotechnological applications. The Coastal Zone consolidated meanwhile the status of resource sui generis, not only because of the different uses it supports, but also because it is the key interface between the continents and the Ocean.*

*Simultaneously with this promising development, the environmental impacts and associated crisis of the Industrial Revolution to the Ocean have become apparent. It is the case of generalized overfishing of the most important stocks throughout the global Ocean; the growing degradation of the status and quality of the marine environment; the destruction of habitats essential to the survival of numerous species; the consequences of the greenhouse effect and related increase in sea level. These situations are a source of concern to the public and are objective of the action of governments and the world community. The resulting national and international legislation failed, however, to prevent the degradation of the Ocean environment and has accentuated environmental risks, which have become more frequent and severe (e.g. microalgal blooms). The*

*accident of the “Prestige” in November 2002 along the coasts of Spain and Portugal generated an enormous oil spill, which was widely reported by the media and is still very present in our memories. It is worthwhile noting, for its relevancy, the decision made at the Johannesburg Summit in 2002 to establish a regular system of evaluation of the Status of the Marine Environment, which is under negotiation with a view of defining its methodology and structure. It is expected that the IOC will play a predominant role in the scientific and technical aspects of this system, in conjunction with the United Nations Environment Program (UNEP).*

*In face of this situation, new requirements have been identified for international cooperation, namely with a view of overcoming known institutional constraints and to move towards more advanced forms of Ocean Governance at all levels – national, regional, and global. As it was stated by the Independent World Commission on the Oceans (IWCO, 1998), the major goal is to “transform an aggregate of sectoral institutions existing at the national and international levels into a flexible and dynamic network that is responsive to the goals of solidarity and sustainability and our growing knowledge of ecological linkages”*

*The 1998 Lisbon Declaration - “Ocean Governance in the 21st Century: Democracy, Equity and Peace in the Ocean”, approved along with the Report of the IWCO “The Oceans, Our Future”, alerts to the seriousness of the challenges with which we are faced, accentuated by increasing multiple use of the Ocean and particularly in the Coastal Zone. In this context, it recommends that “we must ensure in a systematic manner the prior assessment of impacts relating to hazardous activities and new technologies”. The Declaration also calls for an effective and integrated management of marine areas, in their totality, thus including the resources located therein, taking into account natural processes and phenomena, and impacts of anthropogenic origin. Moreover, the Declaration advocates that action should be based on “the best scientific knowledge” and the “participation of citizens”.*

*The evolution of Ocean Affairs – stimulated by economic and power motivations, as well as human curiosity, spirit of adventure and enterprise – lead to the recognition of the practical value of cooperation (global and regional) and the positive role to be played by the United Nations System, by other governmental organizations dealing with Fisheries, Oceanography and maintaining Environmental Protection, as well as NGOs, in effective interface with national mechanisms. This vast network is still predominantly marked by sectoral mandates and approaches leading to fragmentation of efforts. Such limitations triggered in recent years the adoption of broader mandates.*

*This trend was stimulated by: i) The United Nations Conference and resulting Convention on the Law of the Sea (1982; in force since 1994), as well as the generalized acceptance of the principles in which this instrument was based, inter alia the quest for a sense of balance between the duties/rights of the States in the peaceful use of the Ocean; Agenda 21 (UNCED, Rio de Janeiro, 1992), namely Chapter 17, which gives particular attention to the management of the Ocean with special priority to the Coastal Zone, within an holistic approach, encouraging also the “analysis of critical uncertainties for the management of the marine environment and climatic changes”.*

*Because of their implications to Ocean Governance, Principles and guidelines part of the Rio Declaration are particularly relevant for Ocean Governance. This is the case of Principles 3 (Sustainable Development), 9 (Reinforcement of Scientific Knowledge) and 10 (Participation of the Citizens and Access to Information). It is also worth mentioning the reinforced role of local and other interested parties, and the need to undertake institutional adjustments with the aim of achieving a more effective implementation of mandates through the involvement of all the stakeholders.*

*The weaknesses of UNCLOS have been attenuated, step by step, by the adoption in the last decade of complementary legal agreements. In addition to those negotiated within the framework of the Rio Conference (Convention on Climatic Changes; Convention on Biological Diversity), and other instruments such as the Agreement concerning the Cooperation and Management of Straddling Fish Stocks and Highly Migratory Species has been adopted. Various agreements of regional incidence within the framework of UNEP and IMO have also been adopted with the objective of protecting the marine environment from pollution from ships and offshore oil rigs, as well as through the Montreal Declaration (pollution of terrestrial origin).*

*It is a common requirement in these instruments to recognize the basic importance of credible scientific knowledge, data and information in the formulation of effective management measures and as common credible source for negotiation between interested parties.*

*I wish to recall, in this context, that the IOC has revealed, ever since its creation, an anticipatory and creative vision of the role of scientific research and applications for a better understanding of the Ocean and its resources, through the concerted action of the Member States. This lead to the progressive structuring of a vast network of cooperative ventures supported by technical and regional subsidiary bodies, centered on the study of phenomena and processes of particular relevance to specific Ocean regions, as well as programs and projects, including systems for monitoring and observation (e.g. GOOS), exchange of oceanographic data and information complemented by building up national capacities in Marine Science and Technology. In a few decades, the Ocean becomes a vast space open to the action of Man in an accelerated process, from the coast to the open ocean, and from the surface to the depths.*

*The Regional Subsidiary Bodies contributed to approximate the decision making process of the parts directly interested, as encouraged by the Rio Conference and to optimize means and resources, particularly welcome under the present economic constraints. It is important to note that in the Mediterranean there is a considerable diversity of regional bodies, namely the ICSSM, projects of the IOC (e.g. Bathymetric Chart, etc.) and the Regional Seas Program of UNEP, which could benefit from closer collaboration and cooperation on issues of common interest. The Principle of Effective Participation should also stimulate a decision making process based on the access to information and the involvement of all interested parties and constituencies.*

*Such a process would benefit from the perception that the problems of the oceanic environment are interconnected.*

*To finalize, the Informal Consultative Process underway within the framework of the United Nations General Assembly, has provided a useful forum for governmental experts, representatives of organizations part of the United Nations System, and of other intergovernmental organizations, as well as NGOs. It helped considerably to assess the situation of International Cooperation in Ocean Affairs, at the global and regional scales, in identifying problems and exploring scenarios for an effective Ocean Governance oriented towards sustainable development. Such an overall goal fits the “common” nature of marine resources and, in some cases, of their status as “common heritage of all mankind” – actively defended by Prof. Arvido Pardo, from Malta – and that was later finally incorporated in the United Nations Convention on the Law of the Sea. In this context, the General Assembly has emphasized the value of cooperation as the appropriate way to enhance the collective response of Member States to issues of common interest, both at the regional and global levels.*

*In this perspective, the concept of “Large Marine Ecosystems” (LME) has been adopted as the appropriate framework for multilateral mechanisms of management. Whenever necessary, joint efforts should be undertaken in the definition of their geographical areas so as to improve operational functions and efficiency. The reference to LMEs will also offer a common basis and will facilitate the complementarity and joint action by organizations having complementary responsibilities in Ocean Affairs, such as FAO (fisheries), IMO (maritime safety), IOC (marine scientific research, ocean services and capacity building), and UNEP (protection and conservation of the marine environment).*

*Special reference must be made to the recent adoption by the European Union of LMEs and “Ecological Regions” as the basis for fisheries management. The “Green Paper: Towards a future Maritime Policy for the Union: A European vision for the oceans and seas” - prepared by the European Commission under the leadership of Joe Borg, Commissioner for Fisheries and Maritime Affairs and former Minister of Foreign Affairs of Malta – undergoing a process of public consultation until June 2007, and the adoption of a European Maritime Strategy as the environmental pillar of a future integrated European Policy for the Ocean, are significant steps in the direction of a more effective governance of European Ocean Affairs and towards achieving the expected European leadership, competitiveness, and capacity to respond to the aspirations of the Member States, and the partnerships to respond to the challenges with which Humankind is confronted.*

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