

GLOBAL REPORT ON THE EVALUATION OF THE RESEARCH UNITS ON MARINE SCIENCES

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The following comments and recommendations were prepared by the Panel on the basis of the observations made and inputs received from its members during the visits to Units, as well as on consultation and exchange of views with their leaders and other participating researchers and personnel, and adopted by the Panel during its final meeting.

General comments:

1. Overall the Panel has noted the strong development of the marine science and technology activity in Portugal over the past period of 5-10 years. The government as well as the scientific community involved in this process are to be commended for this. The panel wishes to emphasise that this national effort now provides in the "majority of the fields" for a competent, diversified critical mass of scientists and scientific knowledge, which can and should be used in addressing the increasingly complex management and resource utilisation problems in the marine area, so as to help ensure sustainable development, and avoidance of conflicts.

2. The Panel strongly recommends:

- the establishment of a national policy for ocean data and information, supported by related data centre/databanks/network with proper management and with open access for national institutions, researchers and other users;
- a dedicated effort to ensure that equipment of research units of high standard are renewed, up-dated and maintained; in some cases, as pointed out during the previous evaluation, the laboratory space is a hampering factor for the efficient function of certain units, and effective steps should therefore be considered to overcome this situation;
- consideration of a merger or closer association of some Units with overlapping interests and complementary research and funding, so as to ensure a critical mass of both human and other resources for the effective implementation of research programs and activities, enhancing internal dialogue and referencing, and optimal use of facilities and means; this has to be done without disrupting on-going valuable research and funding, and without increasing the bureaucracy.
- timely consideration and response by the administration concerned to proposals from the units in order to facilitate planning and ensure to the extent possible stability of funding;
- pursuance of the successful Post-Doc Programme, insuring sufficient duration of the appointments;
- active promotion of a visiting professor programme on selected priority areas (vg: physical oceanography; dynamics and management of living marine resources; quantitative

ecology); noting that recommendation to that effect made during the 1999 evaluation has apparently been explored;

- strengthening the technical support available to Units through posts for technicians, taking into account the need to maintain operational sophisticated equipment both in Laboratories and sea platforms, as well as the recognised need to assist researchers with the operation of equipment and collection of field data, namely associated with monitoring activities.

3. The Panel welcomes as a positive development the recent establishment of two Associate Laboratories (Instituto de Sistemas e Robótica – Lisboa (ISR-Lisboa) and Centro de Investigação Marinha e Ambiental (CIMAR) aiming, *inter alia*, at facilitating complementarity and co-operation among participating Research Units, including optimisation in the use of human resources and facilities. Taking into account the outcomes of the present evaluation, the Panel encourages that this institutional model be pursued and further explored with a view to its application in other clusters of Marine Sciences and Technology Research Units. In this context, the Panel recommends that the feasibility and advantage of the establishment, in due course, of an associate laboratory involving the Institute of Oceanography (Faculty of Sciences - University of Lisbon) and other related interacting Units be considered.

4. The Panel noted that the continued high level of some of the Units evaluated and the support provided to their activities, demonstrates the understanding of the authorities to maintain the need to support specialised science and technology capacities. The Panel encourages this enlightened policy, taking also into account the steps being taken to establish an ocean component under the "European Research Area". In this context the Panel notes with satisfaction the involvement and role played by Units and researchers in public awareness and other cultural activities, and encouraged this approach to be actively pursued in the future.

The Panel notes that the research funding has contributed to maintain the quality of teaching and advanced education (PhD and MSc).

The Panel encourages units to participate strongly in the EU Marie Curie Programme.

The Panel also underlines that environmental issues basically include the study of reciprocal interactions between natural systems and human societies. As a consequence, social and human sciences should be encouraged to play a significant role in most marine research projects.

5. Research Vessels

Taking into account Section 2 of the Evaluation General Report (1999), the Panel noted the establishment in the framework of the Intersectoral Oceanographic Commission / MS HE of a working group to assist with the allocation of ship time with a view to optimising the use of existing research vessels. This is indeed a step in the right direction in view of the increasing demands by the Portuguese marine scientific community for access to sea going facilities. The trends regarding research in coastal areas and estuaries are for expansion and increasingly towards interdisciplinary approaches calling for the participation of scientists and students at various academic levels.

The Panel reiterates the comments made in 1999 on this matter, and strongly recommends that consideration be given to the allocation to universities in Portuguese mainland (because University of Azores already operates its own research vessel) of two medium sized vessels (ca. 25 m), equipped with laboratory space, winches and medium heavy equipment: i) one for the central coast south of the Tagus river (Universities of Algarve and Évora) ; and, ii) one for the northern coast (Universities of Braga, Porto, Aveiro, Coimbra).

For reasons of economy and efficiency the Panel also supports the previous recommendation (1999) that special attention should be given to the establishment of a *national research vessel facility* for the purpose of maintenance of ships, their standard equipment and other necessary services.

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The Evaluation Coordinator for the Panel

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