



**National Oceanography
Centre, Southampton**
UNIVERSITY OF SOUTHAMPTON AND
NATURAL ENVIRONMENT RESEARCH COUNCIL

**Consultation response on the Green Paper issued by the Commission of
the European Communities 'European Research Area Green Paper: new
perspectives'
Submitted August 2007**

1. This response has been prepared by the National Oceanography Centre, Southampton, (NOCS) UK. [annex 1 – about NOCS].
2. As one of the UK's leading national marine science and technology institutes we are active and longstanding participants in projects supported by the European Framework programmes such as the major FP6 HERMES programme which we lead. We are also an active partner with other institutes and European networks such as the ESF Marine Board engaging in strategic initiatives to further marine science partnership and cooperation in Europe.

The importance of Marine Science

3. The marine environment is **fundamental to earth system processes** and to developing solutions to pressing societal needs. The oceans cover 70% of the earth's surface and 97% by volume of its biosphere. The upper 10 m of the oceans have as much mass as the atmosphere and the upper few hundred meters contain as much heat. Because the oceans are the cradle of life on earth, biodiversity is greatest there (the only environment on earth in which all phyla are present). Ocean sediments are the library of past changes on earth, and so hold vital clues to the future. The ocean is the largest reservoir on earth of mobile carbon and is the earth's principal solar heat store, regulating both day-to-day weather and climate. The human population is growing fastest in coastal regions and sea level rise poses the single greatest threat resulting from global climate change in the 21st century.
4. Fundamentally, Marine Science is
 - **interdisciplinary** in nature but critically dependent on core science disciplines (mathematics, physics, chemistry, biology, engineering);
 - concerned with processes operating over a **vast range of space- and time-scales** (local to global; milliseconds to millennia);
 - heavily reliant on **international collaborations**;

- critically dependent on **major infrastructure** and logistics support (e.g. ships, satellites) required to operate in the oceans;
 - **technology dependent** (most major advances in marine science have stemmed from new technologies enabling new measurements to be made);
 - has a strong imperative (particularly in relation to climate change) to undertake **sustained (decadal timescale) observations** over ocean-basin and global scales;
 - increasingly viewed within a **wider Earth System context** (consisting of ocean, atmosphere, cryosphere, land surface, deep earth interior), with growing interest in the couplings between the ocean system and other earth system components.
5. Europe has great strengths in Marine Science, a good record of international cooperation and has many strategic policy requirements for its outputs. The European Commission can and should therefore provide some of the varied drivers, incentives and tools necessary to underpin its delivery. **Marine Science therefore may provide an excellent ‘case study’ of the potential and challenges faced in creating a genuine European Research Area.**
6. To this end we draw to the attention of DG Research, and do not repeat here, the background papers and the large body of responses to the recent Commission consultation on the Green Paper ‘**Towards a future Maritime Policy for the Union: A European vision for the oceans and seas**’ and the ‘Aberdeen Declaration’ a synthesis produced in consultation with major of the leading institutes and representative organisations in Europe [Annex 2 –separate pdf file]. In addition to our own submission NOCS collaborated with our German and French counterparts – and with many other European institutes - to prepare a collective view from EU marine science institutes¹. NOCS played an active role as a member of the organising committee for the Commission’s EurOCEANS2007’ conference. NOCS Director Professor Ed Hill gave a keynote presentation on the importance of ‘Enhancing Partnership and we were instrumental in the preparation of the ‘**Aberdeen Declaration**’, which we fully support.

The ERA consultation

7. The ERA Green Paper contains a number of sweeping statements which we do not recognise as applying in all cases. Also we find the

¹ Common response from European Marine Research Institutions and stakeholders in marine science and technology issues to the Green Paper COM (2006) 275 final “Towards a Future Maritime Policy: A European Vision for the Oceans and Seas” 22nd May 2007

questionnaire for this consultation very broad and generic and so have not completed it in full. Instead we refer below to key aspects.

National dimension and levels of intervention

8. FP funding is relatively small compared to the national efforts. The success of individual institutes and the requirement for a national capacity in particular areas will drive key investment decisions. European funding, the level of intervention (subsidiarity) and the instruments it develops need to recognise this.

Realizing a single Labour Market for Researchers

9. **Many of the mechanisms are in place at the level of research institutes. The issues are wider ones concerned with e.g. cost of living and competition for key researchers in a global market place. However ERA should continue to promote human capacity building,** and the related issues of attractive research careers and researcher mobility, to ensure that appropriate highly-skilled researchers and support personnel are available to underpin economic and environmental developments.

Developing World-Class Research Infrastructures

10. We call for EU support: **to identify the specialized pan-European research infrastructures** (e.g. specialized research vessels, subsea technologies, satellite and *in-situ* ocean observing systems, real-time seabed and water column observatories, moorings, platforms and monitoring and data collection, databases and information portals, high performance computing, modelling and land based facilities) required to meet identified challenges and opportunities and seek to **maximise the shared use and efficiency of Europe's research infrastructures**, including for example EMSO and EUROARGO.
11. However it is not necessarily the case that this requires 'joint European ventures' [as envisaged in the paper]. The funding for developing and running such infrastructures derives predominantly from national funding. Whilst guidelines may help, the issues must be addressed on a case by case basis and we do not see a generic need for new legal structures. Indeed mechanisms for shared use of existing infrastructures with which we are familiar [and arguably leading players], such as research ship barter, work extremely well precisely because they rely on sharing of ship time and capacity on a basis that does not demand detailed formal agreements or transfers of funding between nations.
12. Any new mechanisms have also to be attractive to industry.

Strengthening Research Institutions and Optimizing Research Programmes and Priorities

13. There is a danger of an inherent conflict emerging between the strengthening of existing institutions and the development of 'virtual research communities' in some cases where the Commission is endeavoring to further these through the creation of 'virtual research institutes' (as in the FP6 networks of excellence). There is also a risk that some of the mechanisms of support, esp. of large projects, may undermine the necessary competition that exists and is necessary to develop world class excellence. We call for an evaluation of the benefits to date of the NoE concept prior to further developments. Similarly the use of Article 169 should not be seen as a panacea- the jury is still out.
14. Common principles, such as for peer review and evaluation may be an ultimate objective but may not be achievable in realistic timescales. What is necessary may be to facilitate mutual recognition and to avoid 'double jeopardy' where the incentive for collaborative projects may be undermined by a need to go through two or more uncoordinated peer review processes.

Sharing Knowledge

15. We agree there is a case for EU level activities to support for knowledge transfer and clustering activities engaging academic institutes and industry at EU regional seas level.

Opening to the world: International Co-operation in S&T

16. A global approach is essential in tackling some of the big planetary challenges such as climate change and we agree that ERA developments should give much higher priority to international engagement, including through support for capacity building and appropriate Commission representation in international Government research organizations.

NOCS looks forward to engaging the the public discussions and next steps in relation to the ERA debate.

Response prepared by: Mrs Jacky Wood, National Marine Coordination Office on behalf of National Oceanography Centre, Southampton
Waterfront Campus, European Way, Southampton SO14 3ZH
Tel: 00 44 23 8059 6102, email: jkwo@noc.soton.ac.uk

ANNEX 1 About NOCS

The National Oceanography Centre, Southampton NOCS is one of the world's leading institutions devoted to research, teaching and technology development in ocean and earth sciences. Over 500 scientists, lecturing, support and seagoing staff are engaged at this purpose built waterfront campus in Southampton, along with over 700 undergraduate and postgraduate students.

The National Oceanography Centre, Southampton is a collaborative Centre owned by the *Natural Environment Research Council (NERC)* and the *University of Southampton*. NOCS was established as the national focus for oceanography in the UK, with a remit to achieve scientific excellence in its own right as one of the world's top five oceanographic research institutions.

NOCS delivers a diverse mission, which ranges from managing the NERC multi-purpose research vessel fleet and other major facilities, to programmes of strategic research for NERC, and academic research and education in ocean and earth sciences in support of the University's mission. NOCS activities also encompass major ocean technology development, long-term observations, managing international science programmes, promoting enterprise and knowledge transfer, providing advice to Government, business and charities, and the engagement between science and society. Moreover, the Centre is also specifically charged with working with the wider science community to provide strategic leadership, coordination and facilitation for the whole of the UK marine and related earth sciences.

Further information may be found on our website at www.noc.soton.ac.uk



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