



CAPACITY BUILDING

Identifying needs, specificities and imbalances

Summary of the deliverable 5.2.1 (WP5-Task52)

March 2012

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Grant Agreement n° 249552

Acronym: SEAS-ERA

Title: Towards Integrated Marine Research Strategy and Programmes

WP 5: Capacity Building

Task 5.2: Addressing common needs, specificities and imbalances

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Deliverable N°: D.5.2.1 - Report on “Identifying needs, specificities and imbalances in human capacity building”

Security: PP

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Introduction

SEAS-ERA – Towards integrated marine research strategies and programme¹ - is a Coordinated Action co-financed under the EU-Seventh Framework Programme (2007-13).

It started on May 1st 2010 and lasts 48 months. Its main objective is to constitute a platform to develop a European integrated policy oriented structure in order to promote knowledge and expertise in any sea-related area, embracing marine and maritime research.

This report is part of the activities of the **Work Package 5** of the project, which is specifically dedicated to the **Human Capacity Building (HCB)** in order to contribute to “a common shared knowledge to optimize and enhance human capacity building activities, establishing the basis for improving science and technology development and its utilization in Europe”.

HCB issue has been added for the first time as part of an ERANET under SEAS-ERA Project and it is one of the first attempts to include the building of resources as a matter of study in the field concerned.

The importance of focusing on HCB schemes, considering countries’ different approaches, overlaps and imbalances is indeed increasing and is one of the requirements to fulfil in the framework of new research programming initiatives, like the Joint Programming Initiative “Healthy and Productive Seas and Oceans”².

EU education and training policies have gained impetus since the adoption of the Lisbon Strategy in 2000. In the framework of DG Education and Training strategy³ and *Life Long Learning Programme*, the key issue is the development of new capacities according to the research community needs.

At the same time HCB is more than training and education. It involves understanding, skills and access to information, enhancement of managerial structures, processes and procedures, to facilitate the human resources growing process. It means development of institutions and infrastructures. It requires an enabling environment with appropriate policy and legal frameworks, to enable all levels and all sectors performers to act and support knowledge-based decisions.

¹ <http://www.seas-era.eu>

² <http://www.jpi-oceans.eu/>

³ EU Council, *Council conclusions on the role of education and training in the implementation of the ‘Europe 2020’ strategy (2011/C 70/01)*, Official Journal of the European Union, 04 March 2011.

Brief Summary of the Report

This report is one of the steps achieved to fulfil the objective of addressing synergies in HCB between national, regional and European programs/funding schemes, with evidence to inter and intra-regional imbalances in the marine sector.

It is the result of the process of building-up a database to collect and highlight useful information and benefits from the speeches and contributes to the HCB workshop, held in Rome on October 2011, as project milestone.

An overview of the HCB in National Research Programmes and in EU funding schemes, including a survey of HCB efforts in the framework of RTD projects is illustrated respectively in **Chapter 1** and **Chapter 2**.

The objective of Chapter 1 is to identify discrepancies among nations in addressing the theme of HCB. Briefly reporting the main findings of Chapter 1, different approaches to the issue of HCB in the marine sector **at national level** are found:

1. Countries with a **specific strategy for HCB** (e.g. Ireland)
2. Countries with **HCB as part of main research funding schemes/programmes** (e.g. Greece, Italy, and Portugal)
3. Countries without **any peculiar strategy or program for HCB** besides regular activities at university/institutional level (e.g. Germany, Norway and Spain).

Chapter 2 accounts for HCB priorities and needs from the research community perspective: **323** RTD projects are surveyed. According to its description, each project is referred to one of the 11 themes of the SEAS-ERA WP1 deliverable “Synthesis report on existing (sub) national (marine) science and technology strategies”⁴, as reported in the table below.

Scientific Themes	N
Understanding the Ocean	30
Climate change and Marine Environment	22
Ocean Technologies	79
Energy	28
Food	37
Oceans and Health	11
Safe and sustainable use of marine and coastal spaces	21
New frontiers	0
Maritime transport	36
Socio-Economic and Legal Research	0
Policy Support (Governance and Regulation)	59
Total	323

Moreover, a focus on FP7 Mobility schemes and Erasmus Mundus Programme is included.

⁴ [http://www.seas-era.eu/np4/%7B\\$clientServletPath%7D/?newsId=19&fileName=SEAS_ERA_D_1.1.1_final.pdf](http://www.seas-era.eu/np4/%7B$clientServletPath%7D/?newsId=19&fileName=SEAS_ERA_D_1.1.1_final.pdf)

Chapter 3 presents a survey of the schemes carried out at regional level (i.e. basin level) to assess regional specificities and identify possible imbalances among different geographical areas.

Basin	Specificities/ Imbalances
Atlantic Sea	<ul style="list-style-type: none"> • Programmes focused on interregional cohesion and transnational co-operation and networking • Projects about: Understanding the Ocean, Climate Change and the Marine Environment, Energy
Black Sea	<ul style="list-style-type: none"> • Programmes focused on joint operations and neighbourhood cooperation (specific mention to joint knowledge) • Projects about: Climate Change and the Marine Environment, Safe and Sustainable use of marine and coastal spaces, Policy Support
Mediterranean Sea	<ul style="list-style-type: none"> • Programmes focused on trans-national, neighbourhood and cross-border cooperation (specific mention to mobility); networks with non-EU Southern Mediterranean countries • Projects about: Climate Change and the Marine Environment, Safe and sustainable use of marine and coastal spaces, Maritime Transport, Policy Support

Chapter 4 provides a collection of significant HCB activities that international Organizations regularly carry out in the marine sector. The experiences of IOC, ICES and BONUS among others are illustrated. This Chapter offers an overview not only of HCB initiatives but also of the methodology behind the organization of those initiatives as well as sectors of interest.

The table below shows a synthesis of the above mentioned international Organizations' actions, according to main scientific themes in which they are implemented and the methodology used by each of the Organizations.

Organization Name	Scientific Themes	Methodology	Action[s]
IOC - Intergovernmental Oceanic Commission	Understanding the Ocean; Climate change and the Marine Environment; Policy Support.	Long term perspective; empowering network of directors with leadership skills; supporting network of scientists with proposal-writing skills; building scientific teams to collaborate on funded projects; training in decision support systems.	HCB as part of the thematic programs
ICES - International Council for the Exploration of the Sea	Understanding the Ocean; Safe and sustainable use of marine and coastal spaces; Maritime Transport; Policy Support.	Quality assurance in the advisory process; focus on high-profile scientists and instructors.	Training courses
BONUS for the Baltic Sea Science	Understanding the Ocean; Climate change and the Marine Environment; Policy Support + Dissemination.	Integration between natural and socio-economical sciences; linking between physical and biological science; focus on early career scientists	Training courses
EuroMarine	Understanding the Ocean; Climate change and the Marine Environment.	Interdisciplinary, competency training and capacity building	Mobility Fellowships Programme

Finally **Chapter 5** presents, at global and regional level, the analysis of the information collected through the HCB questionnaire developed under Seas-era WP5, highlighting priorities and needs for different sectors, themes. Organizations from **Twenty-seven** different countries (including some non-EU countries) filled the questionnaire and **196 HCB initiatives** were finally collected.

The results are presented at global level, at basin level and from the perspective of the private sector (indeed 15 private Organizations answered the questionnaire).

To summarize the questionnaire's methodology and results:

- **4 issues used to describe HCB: target group, sector, discipline/thematic, action type;**
- **high priority for:** building **researchers, technologists, and technicians**, in the sector of **research, fishery and sea resources**, focusing on disciplines like **environment, engineering and technology**, and **biology**, mostly at **school**, and through **training** actions;
- **high need of:** building **researchers and technicians**, in the sector of **research, fishery and sea resources**, focusing on disciplines like **environment and biology**, mostly through **training** actions;
- **the bias factor: who answers?** SEAS-ERA or related communities;
- **HCB advancement = $C^3 + I^2 + M$** = Coordination of * Collaboration on * Creation of (common training programs, funding schemes, policies) + Interdisciplinary approach + International recognition of training + **Mobility** (emphasis on);
- **HCB barriers due to a lack of:** funds, acknowledgement of HCB activities as strategic for country development, collaborative approach between private and public sector, coordinated strategies.

The detailed Index of the report is shown in the Annex.

Highlighting Needs, Specificities and Imbalances

1) HCB is increasingly becoming part of marine research programs at national level. It is possible to discriminate:

- a) countries with a **specific strategy for HCB** (e.g. Ireland)
- b) countries with **HCB as part of main research funding schemes/programmes** (e.g. Greece, Portugal and Italy)
- c) countries without **any peculiar strategy nor program for HCB** besides regular activities at university/institutional level (e.g. Germany, Norway and Spain).

2) Among the EU funding schemes for the research excellence, FP7 RTD projects include for different scientific themes (Understanding the Ocean; Climate Change and the Marine Environment; Ocean Technologies; Food; Safe and sustainable use of marine and coastal spaces; Maritime Transport; Policy Support) the following types of HCB actions:

- a) **summer schools** and training actions involving stakeholders and researchers who are not partner of the project;
- b) development of **PhD and recruitment of young researchers**;
- c) specific work packages of projects dedicated to HCB or to **training and dissemination** (even if the activities have not been carried on at the timing of the present survey);
- d) open access to laboratories and marine infrastructures.

With reference to the Marie Curie Actions, most of the funded projects are devoted to “Understanding the Ocean” theme. This is important because these projects are mobility instruments that answer to a precise HCB need from a bottom-up perspective.

3) At regional level, while the neighbourhood cooperation is more emphasized in the Black and the Mediterranean Seas, the interregional cohesion aspect is more important for the Atlantic Sea Basin. The HCB concern is explicitly mentioned as part of the Black and Mediterranean Sea programmes.

4) Best practices and methodologies coming from established institutions/consortia like IOC, ICES, BONUS, and EuroMarine are: long term perspectives, empowering of network of directors with leadership skills, support of network of scientists with proposal-writing skills, building of scientific teams to collaborate on funded projects, training in decision support systems, quality assurance in the advisory process, focus on high-profile scientists and instructors, integration between natural and socio-economical sciences, linking between physical and biological science; focus on early career scientists, interdisciplinary, competency training and capacity building.

5) SEAS-ERA WP5 HCB Questionnaire results show that in the marine field **researchers, technicians and technologists** are **high-priority profiles** while; (basic) **research**, and **fishery and sea resources** are **high-priority sectors**; **biology, environment, and engineering and technology** are **high-priority disciplines**; finally **school education and internships** are **high priority initiatives**.

Some peculiar features appear when considering the private sector, like for example the identification of **managers as high priority profile**.

Moreover the three different Basins show a slightly different approach to some aspects, with the Atlantic Sea asking for an increasing attention to the regulation and management sector; the Black Sea considering the education highly relevant and the Mediterranean Sea according on an high priority to the technologist profile.

This Report is a preliminary effort to overview HCB schemes at pan-European level in order to address synergies between national, European, and Regional programmes.

It could go beyond the SEAS-ERA objectives and be kept alive to increase the available information and feed next programming actions (other ERANETs, JPIs, ...) without duplicating tools and information repositories.

While some information are still lacking from some countries and stakeholders (e.g. private sector), the global level and basin level analysis carried out through the EC databases and the WP5 HCB questionnaire completed by the SEAS-ERA partners' inputs, and by the outputs of the HCB workshop held in Rome on October 7th 2011, allowed to identify preliminary needs, specificities and imbalances in HCB at pan-European level.

SEAS-ERA offered the pilot example of integrating the HCB issue in a network of marine research activities, attempting to collect and share the information about programmes, methodologies, and initiatives.

The exchange of best practices and the activation of some integrated long perspective actions should be taken into account.

The next step will be addressing a HCB strategy at pan-European level.

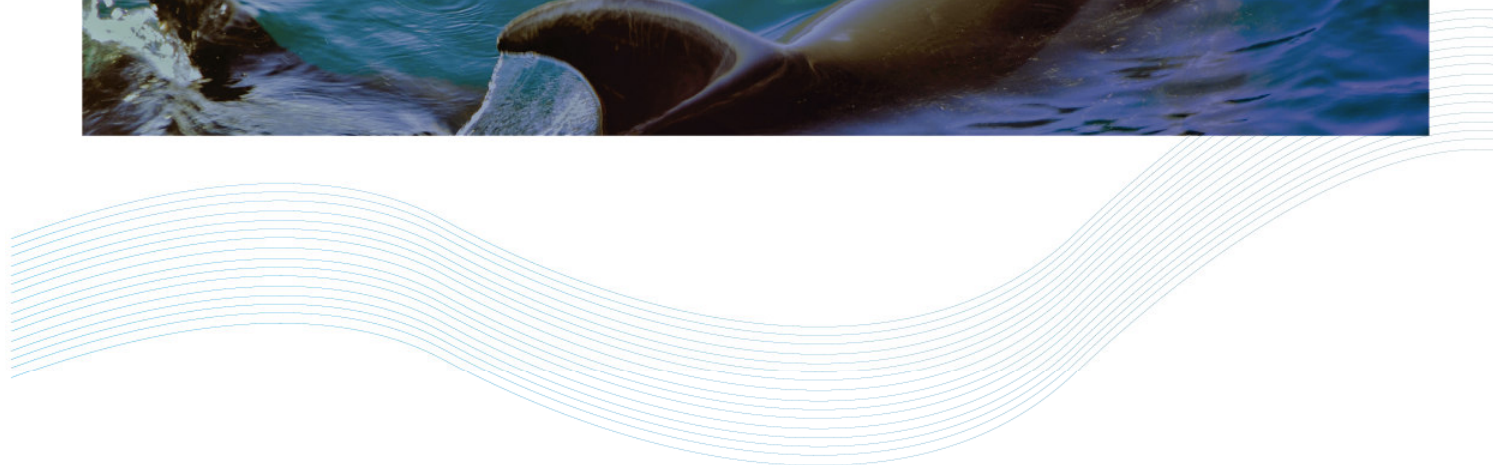
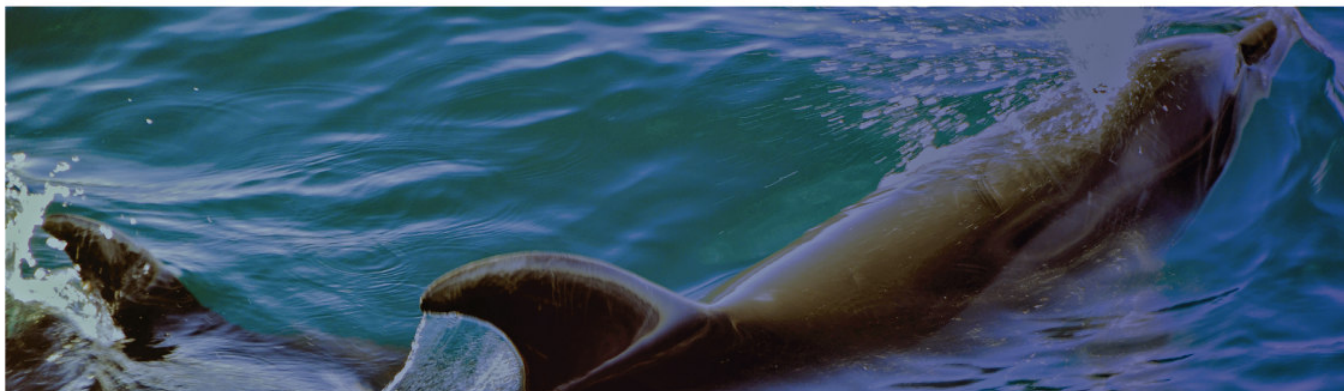
If you are interested in receiving the complete document, please send a request to seas.era@cnr.it.

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