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## New mechanisms for human capacity building in Mediterranean marine research

WP7-Task 7.5

Deliverable 7.5.1

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**Summary**

The main aim of this deliverable is to review patterns and mechanisms for HCB in the region, further investigate synergies between national, regional and European programs to identify new instruments and mechanisms to be proposed. The approach toward Mediterranean region takes into consideration perspectives and instruments for cooperation with Southern and Eastern Mediterranean Countries.

To this aims, the results achieved in the project seas-Era but also inputs from other workshops and initiatives dealing with HCB and marine and maritime in the Med regions have been taken into account.

The paper is divided into two main parts:

1-Mediterranean area and HCB: convergence and perspectives, dealing with mobility patterns, actions and instruments and SWOT analysis to spur cooperation in the area concerned

2-Action Plan for new mobility mechanisms in the Med Region, providing best practices, recommendations and priority actions for HCB initiatives and mobility at short, medium and long term.

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# 1. Introduction

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The FP7 SEAS-ERA project is a network of research funding organizations consisting of 21 partners and 2 third parties from 18 Member States and Associated Countries to FP7. The main objective is to improve coordination between nationally funded marine research programmes.

Among the specific aims of the project:

- to facilitate cooperation by addressing shared opportunities and challenges,
- to ensure better use of resources,
- to create synergies while avoiding duplication of activities,
- to launch common call for mutual benefit.

Mediterranean area is one of the three regional basins in which the project is divided in, for operational and management purposes.

The Mediterranean members of SEAS-ERA consortium have developed a Shared Vision for the Mediterranean area and drafted a Strategic Research Agenda (SRA) with the following specific aims:

- Produce new knowledge and promote excellence in Mediterranean Marine Science;
- Contribute to sustainable economic growth by bridging gaps between research and industry;
- Support knowledge based policy making, with emphasis on Marine Strategy Framework Directive (MSFD) implementation;
- Develop new capacities with emphasis on north-south convergence.

SRA recognizes the importance of Training, Technology and Innovation for the Mediterranean Sea.

The present document has been conceived taking into account:

- the publication of the “Strategic Research Agenda for the Mediterranean Sea Basin” (WP7 – Task 7.1 – Deliverable 7.1.1);
- the launch of the first SEAS-ERA Joint Call on the three topics, taking into account those concerning Mediterranean:
  - Risk assessment of invasive alien species - changes in marine biodiversity
  - Development of indicators and science support and management tools for the determination of Good Environmental Status in the Mediterranean Sea;
- the SEAS-ERA commitment on fulfill HCB needs and covering countries imbalances;
- the opportunity to cooperate on HCB with other organizations (IOC, ICES, BONUS, JPI Oceans, ...);
- the discussion held in Rome on October 2011 during the HCB workshop (M 5.2.1);

- the findings of the published HCB report on “Identifying needs, specificities and imbalances in HCB” (Task 5.2, D 5.2.1);
- the identification of short term and long term initiatives, as identified in the “Proposal for HCB calls within Common Programmes and Joint Calls” (WP5 – Task 5.3, D 5.3.1) launched in the frame of the project;
- the presentation of a preliminary roadmap for human capacity building during the NSC meeting of Porto (7 June 2012).

## 2. Mediterranean Area and HCB: convergence and perspectives

Notwithstanding the implementation of several instruments to foster more and more international mobility in the European Research Area and the adoption from Member States (MS) of the Scientific VISA facilitating access to EU Member States of non EU researchers, many factors still hamper mobility of researchers and hence actions of training in both EU and non EU Mediterranean region.

### 2.1 Mobility patterns in Mediterranean Region

Many studies carried out by projects co-financed by European Commission, and in particular the final report of MORE (1), evidence the following: the number of researchers who have worked or have been trained in a country other than the country of origin are mainly males, with a PhD; and they have a degree in Natural science or Engineering, as illustrated in Figure 1. Those who moved in the first part of their careers, appears to increase the probability of being mobile also later in life. This is true for higher education institutions, public research bodies, and private research institutions.

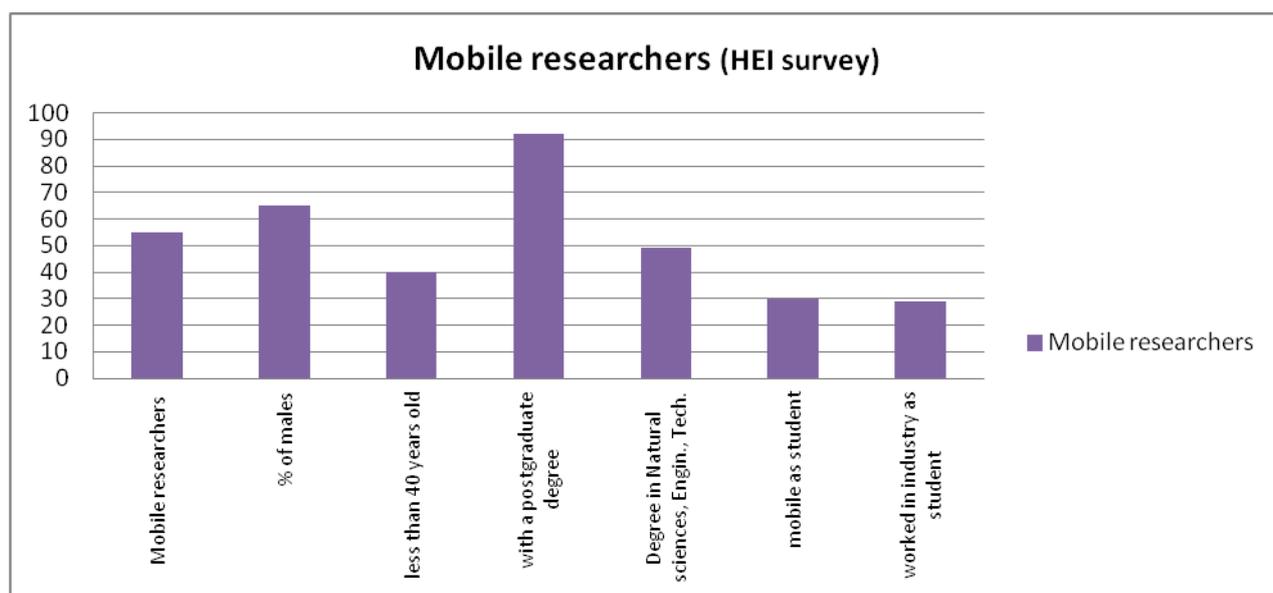


Figure 1 - Mobility patterns of researchers in EU (training stage)

Source: MORE - Study on Mobility patterns and career apths of EU researchers – June 2010

When extra-EU mobility is taken into account, the statistics show a decrease, in general, of the percentage of mobile researchers. However, they have the same characteristics highlighted above: they are males, with a post-graduate degree. Moreover, about 50% have a degree in Natural sciences, Engineering or Technology.

In contrast, the differences with regards to the job mobility, i.e. job changes in another country, can be found between public and private sectors and are related - above all - to the the sector and tipology of post-graduate degrees (see Figure 2).

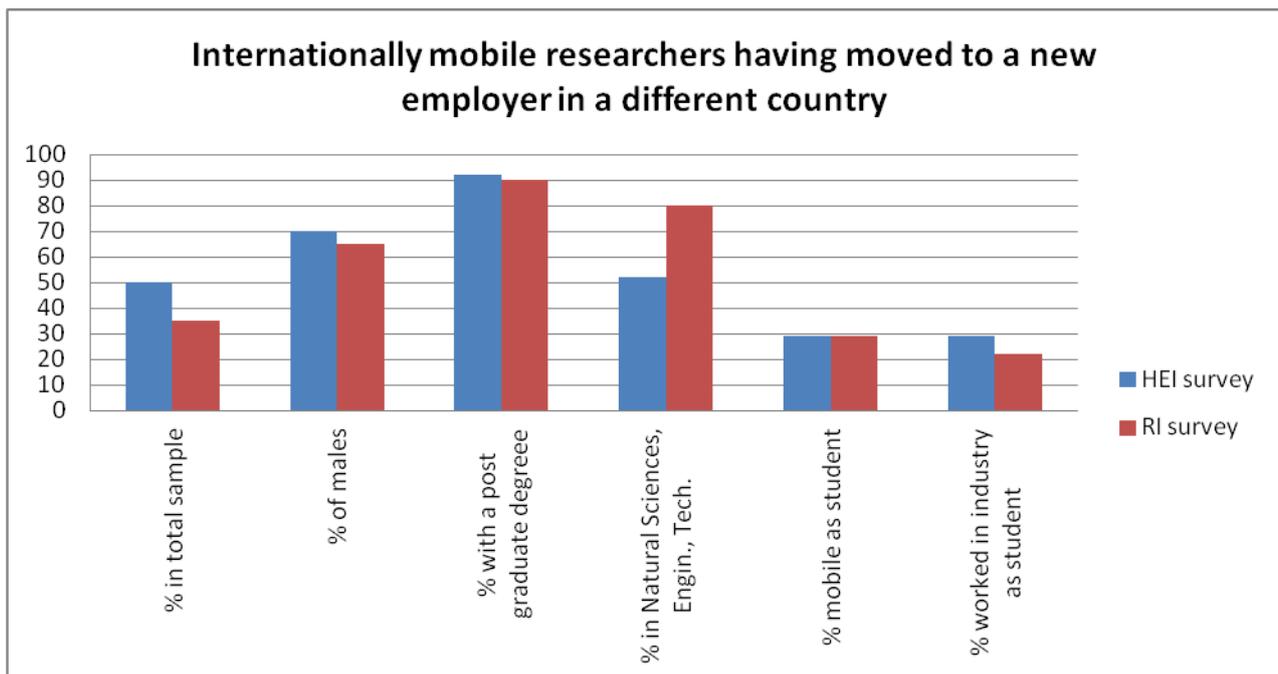


Figure 2 - Internationally mobile researchers having moved to a new employer in a different country.  
Source: MORE - Study on Mobility patterns and career paths of EU researchers – June 2010

It is clear that there is no relation among the frequency of international collaboration among researchers and mobility abroad, that is to say that collaboration cannot substitute mobility. On the contrary it facilitates moving to other countries to share experiences and best practices. These findings can be useful when we want to take into consideration new mobility patterns in marine and maritime areas.

Practical influencing factors such as: language, child care arrangements for female researchers, administrative barriers, etc. can have a negative impact on the quality of life of mobile researchers but don't seem to constitute strong factors in the mobility decisions of researchers.

On the contrary, an important role for motivating international mobility is played by profession-related benefits, as illustrated in Figure 3.

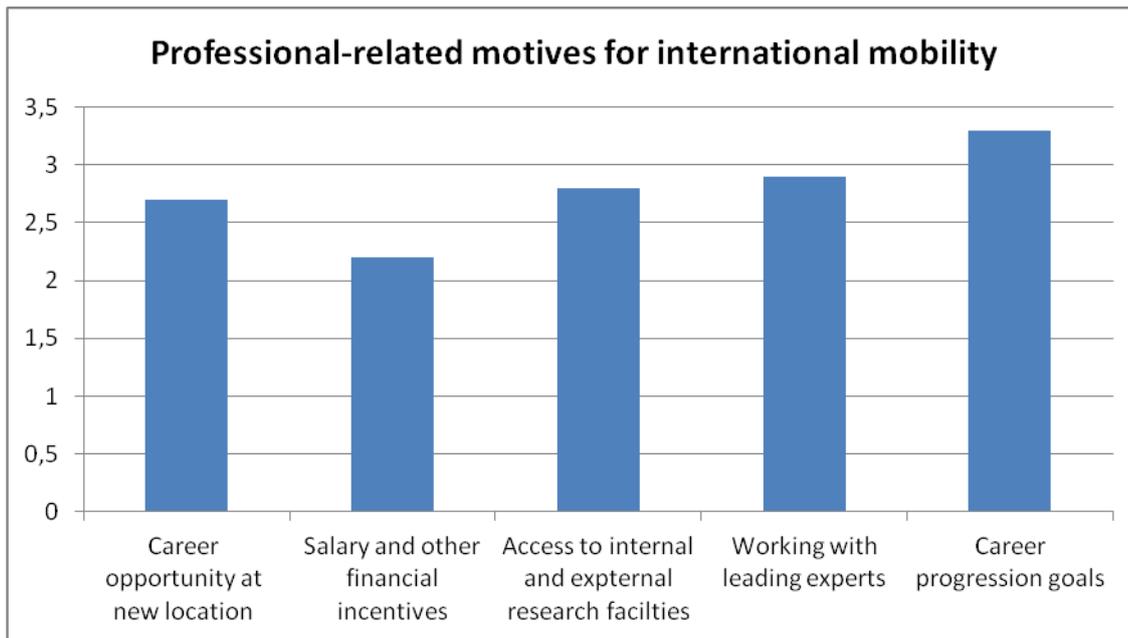


Figure 3 – Professional-related motives for international mobility – Source: MORE - RI survey [http://ec.europa.eu/euraxess/pdf/research\\_policies/MORE\\_final\\_report\\_final\\_version.pdf](http://ec.europa.eu/euraxess/pdf/research_policies/MORE_final_report_final_version.pdf)

Better financial and career prospects are the main factors spurring mobility of industrial researchers; access to research facilities and improvement of personal research agendas have instead a stronger effect on the decision of mobility of higher education and public centres' researchers. The latter emphasize the prospect of patents and publications output, access to new infrastructures, know-how, improvement of professional experience; this is mostly true as concerns extra EU mobility.

Another issue, which appear to have significant effect is the scarce mobility between public and private bodies, due mainly to structural barriers and lack of incentives (6).

## 2.2 Recent policies and relevant instruments to enhance HCB in Mediterranean region

Since the Cairo Declaration, resulting from the first Euro-Mediterranean Ministerial Conference on Research and Higher Education (Cairo - June, 2007), which gathered all ministers concerned from the EU Countries as well as from Southern and Eastern Mediterranean ones (7), herinafter named as MPC (Mediterranean Partner Countries), to the most recent Euro-Mediterranean Conference on Research and Innovation (Barcelona – 2/3 April 2012), Training and Human Capacity Building in the Euro-Mediterranean region is one of the main concern of European Union.

Both the Communications from European Commission on March and May 2011, "A Partnership for democracy and shared prosperity with Southern Mediterranean" (9) and "A new response to a changing Neighborhood" (10), stress the need to enhance mobility and capacity building as pivotal issues to promote mutual understanding, dialogue and shared socio-economical benefits.

The EU-MPC S&T cooperation is covered by a plethora of instruments, aiming at fostering mobility and training (15). Among such instruments, there are the following:

1. Tempus<sup>1</sup>, Erasmus<sup>2</sup>
2. The Framework Program for RT&D (Marie Curie actions, in particular)<sup>3</sup>
3. The Competitiveness and Innovation Framework program (CIP)
4. The Euro-Mediterranean Industrial Cooperation program
5. The ENPI Regional Indicative Program for the Euro-Mediterranean Partnership
6. The ENPI Cross-Border Cooperation program (CBC)<sup>3</sup>
7. The Technical Assistance and Information Exchange (TAIEX) program
8. The Twinning Instrument
9. The Facility for Euro-Mediterranean Investment and Partnership (FEMIP).

In particular, the People programme and the Marie Curie Actions show a certain increase of non EU Med Countries, especially thanks to the IRSES (International Research Staff Exchange Scheme) scheme, aiming at reinforcing the extra-European dimension of ERA through mobility, training and knowledge transfer (13).

Most of EC contribution for non EU Mediterranean Countries under the People programme of FP7 has been granted to Egypt, followed by Morocco, Tunisia and Jordan, as in Figure 4.

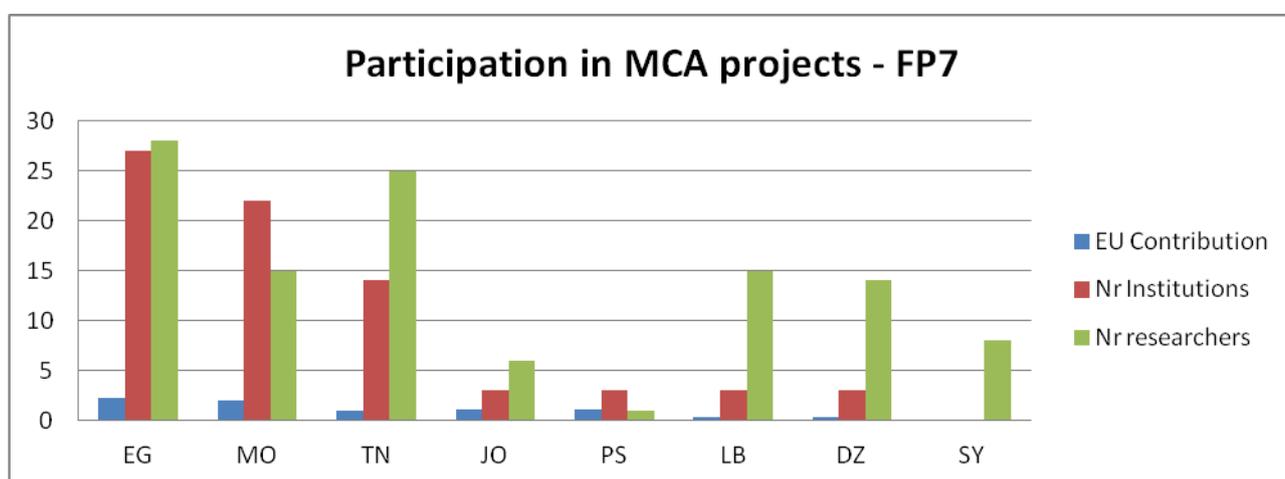


Figure 4 – FP7 Achievements : South Med Countries - Participation in Marie Curie Actions

Source: Rielaboration from A.Luccchetti - (13)

Unfortunately, many barriers prevented the emergence of a coherent research and innovation dynamics capable of contributing even further to growth and thus more well being. In this context, the following main three barriers were defined:

1. The absence of a globally harmonising and coherent framework,
2. The lack of “soft” use of knowledge,
3. High-Tech/Public Organisations bias (15).

<sup>1</sup> Tempus promotes institutional cooperation between EU and Partner Countries of Eastern Europe, Central Asia, Western Balkans, Mediterranean region. Mediterranean Partner Countries only joined the programme in 2002, Israel in 2008, Libya in 2010. Since then a total budget of about 143 million Euros attributed to this region including 87 million Euros (61%) for Middle East and 56 million Euros (39%) for North Africa (11).

<sup>2</sup> For the period 2014-2020 Erasmus for All will replace Erasmus and Erasmus Mundus.

<sup>3</sup> See also Seas-Era Deliverable 5.2.1 Report on “Identifying needs, specificities and imbalances in Human capacity Building (12).

### 2.3 HCB in Mediterranean marine and maritime sector

Despite significant differences of capacities between countries, Marine science has always played an integrating role, promoting the regional cooperation in the Mediterranean Sea. Important stakeholders in this process are regional commissions (e.g. CIESM<sup>4</sup> and MedGOOS<sup>5</sup>) and conventions, the most relevant being the Convention for the Protection of the Marine Environment and the Coastal Regions of the Mediterranean ('Barcelona Convention'), together with its protocols (16).

Within or outside the above frameworks, the marine research community has a long tradition of collaboration, especially with the support of the earlier EU FPs, where specifically targeted project calls on the Mediterranean were launched and a number of important projects were developed. A series of research infrastructure development projects had (those completed at the moment)/ have strong Mediterranean components (e.g. EUROSION, COSCIENCE, PEGASO, EuroSITES, EuroFLEET, SEADATANET, GROOM, JERICO and FixO3). A number of projects are also included in the ESFRI roadmap (e.g. EMSO, EuroARGO, EMBRC), while PERSEUS is focusing on Policy-Oriented Marine Environmental Research in the Southern Seas.

As reported by the working papers preparing the Euro-Mediterranean Conference of Barcelona of April 2012, the need to provide valuable data is provided by many projects co-funded by EC (e.g. CoralFISH, HERMIONE, MEDISEH). There are also a number of excellent national initiatives such as the Italian regional scale seafloor mapping and geohazard identification project MaGIC (Marine Geohazards along the Italian Coasts).

Two important initiatives aiming at overcoming fragmentation and non-standard data collection at the European Union level are the European Marine Observation and Data Network (EMODnet) and WISE-Marine. EMODnet has been established to collate fragmented and inaccessible marine data into interoperable, continuous and publicly available marine environmental data streams for complete maritime basins. Data collection strategies will be improved by the WISE-Marine initiative that will provide a comprehensive and shared European data and information management system for the marine environment which supports implementation of the Marine Strategy Framework Directive<sup>6</sup>. This will also include the use of the EMODnet and INSPIRE processes to establish the required infrastructure and data access (16).

SEAS-ERA ERA-NET cannot avoid to take stock of all the above mentioned projects and activities and aim to complement all this expertise with further actions, addressing the regional marine and maritime challenges.

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<sup>4</sup> <http://www.ciesm.org/>

<sup>5</sup> <http://www.medgoos.net/>

<sup>6</sup> [http://ec.europa.eu/environment/water/marine/directive\\_en.htm](http://ec.europa.eu/environment/water/marine/directive_en.htm)

### 2.3.1 The results of the SEAS-ERA Survey

As evidenced by the results of a survey carried out within the frame of WP5 of the SEAS-ERA project and reported by the Deliverable 5.2.1 “Identifying needs, specificities and imbalances in Human Capacity Building”, the Mediterranean region still faces the difficulties illustrated in Figure 5. and asks to respond to specific imbalances, needs and priorities as listed in Table 1 and illustrated in Figure 6 by implementing actions at short, medium and long term.

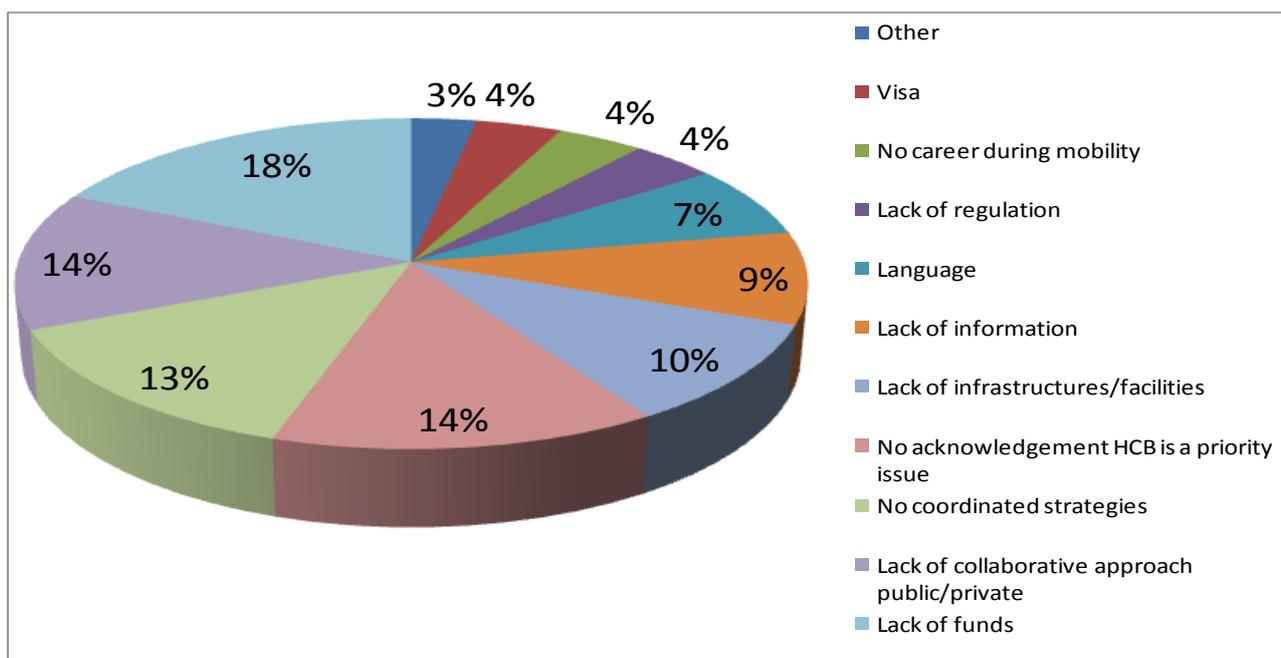


Figure 5 – Problems and barriers for HCB in Med Area

Basin	Needs	Specificities/ Imbalances
Mediterranean Sea	<ul style="list-style-type: none"> <li>• High need of researchers, technicians, and technologists (profile)</li> <li>• High need of fostering the sector of fishery and sea resources, environment and (basic) research</li> <li>• High need of enhancing the environmental studies</li> <li>• High need of internship/training actions</li> </ul>	<ul style="list-style-type: none"> <li>• High priority accorded to the technologist profile</li> </ul>

Table 1– Problems and barriers for HCB in Med Area

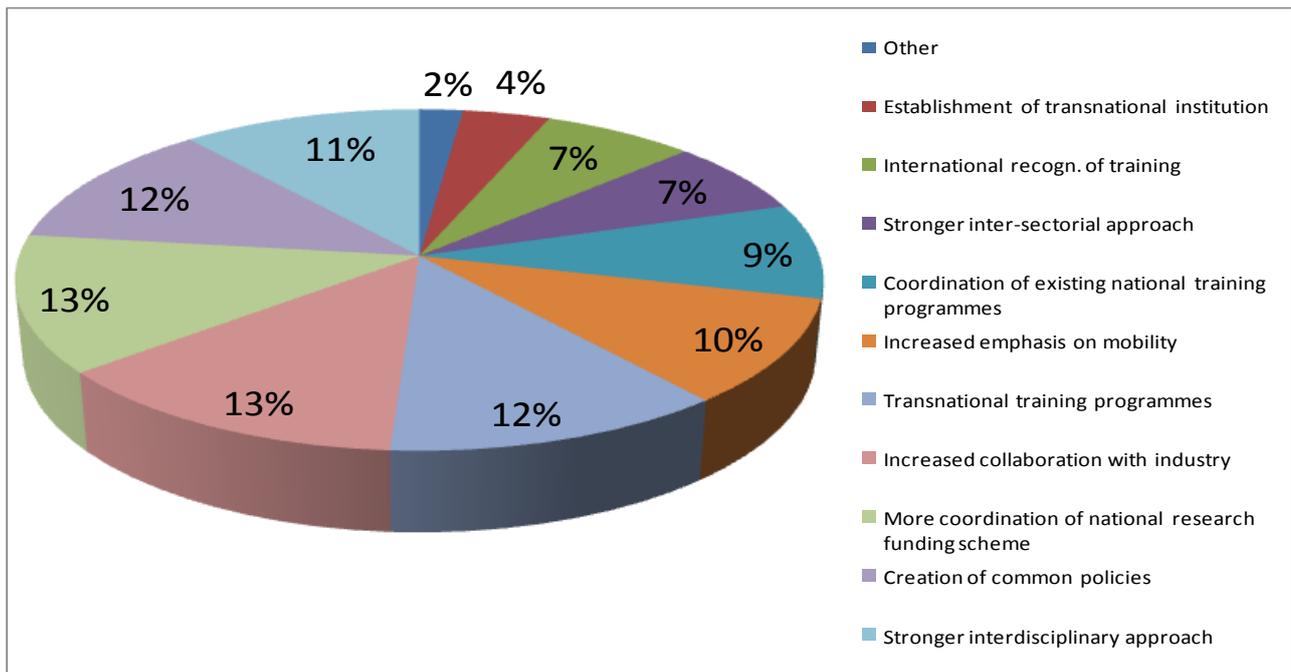


Figure 6 – Priorities to advance HCB in Med Area

### 2.3.2 A renewed partnership in Med Area: policies, strategies and actions to overcome barriers to cooperation and improve HCB

The Euro-Mediterranean Conference of Barcelona held on 2-3 April 2012, gathering EC representatives of different DG, national policy makers, project coordinators, scientists, stakeholders from EU member States and Mediterranean Countries of Southern and Eastern shores of the Basin (hereinafter MPC), re-affirmed the importance of marine and maritime sectors for the development of the region and human capacity building as a key cross-cutting issue for the development of countries concerned.

Moreover, they asked for a renewed partnership based on the principles of common benefit and co-ownership. A programmatic initiative for Mediterranean, like Bonus+ or a Programmed Level Cooperation action as an Art. 185 have been recommended as an important instrument for fostering integration and a common vision.

Whatever issues the potential Art. 185 will cover, environment and water (including marine research) as well as human capacity building could be among the main focus.

Human Capacity Building for the Mediterranean area means to intervene at three main levels:

1. governance
2. higher education, research and innovation
3. developing infrastructures.

During the 3<sup>rd</sup> Technical Regional Workshop of Integrated Maritime Policy for Mediterranean (Malta, 31.05-01-06.2012)<sup>7</sup> the need for training actions and joint cooperation activities was underlined by all the participants.

Further concern of the participants was that the marine and maritime research should be given more visibility and importance in the Mediterranean region, and that the respective budgets should be better targeted to better reflect the needs. The Partner Countries also suggest activating instruments which should allow for more exchange of research staff and involvement of the Member States hence speeding up the process. Secondly, there is a need for an extensive mapping of all existing actions in the Mediterranean region and in the field of marine and maritime research. This shall provide all possible types of information, including involved centers, institutes and universities, active vessels and facilities, past, ongoing and planned cooperation actions (17).

## **2.4 SEAS-ERA Mediterranean SRA and relevance of HCB – The feeling of MPC**

A really comprehensive analysis on policies, strategies, activities and perspectives for R&I in the Mediterranean area has been made available with the Deliverable 7.1.1 of the SEAS-ERA project (14).

Moreover, joint calls<sup>8</sup> have been launched in the frame of SEAS-ERA on three main topics:

- a) Ecosystem approach and ecosystem models for the North Atlantic Ocean
- b) Risk assessment of invasive species - changes in marine biodiversity
- c) Scientific support to the development of GES indicators in the Mediterranean region.

Hence, two calls were launched on Mediterranean issues.

Several SEAS-ERA partners have acted, at different stages and within different activities (surveys, workshops and so on), to better involve into the project southern and eastern Mediterranean Countries. At the same time, if it is true that the project deals with Mediterranean it does not have representatives from Mediterranean non EU Countries (hereinafter referred as MPC) in the SEAS-ERA consortium and this had a certain impact when MPC representatives are asked to fill in questionnaires, take part in a workshop and so on.

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<sup>7</sup> The Project on Integrated Maritime Policy in the Mediterranean (IMP-MED) is project co-funded by EC under ENPI-South which seeks to provide opportunities to nine southern Neighborhood States in the Mediterranean to engage in and to obtain assistance for developing integrated approaches to maritime affairs. The nine Partner Countries are: Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Palestinian Authority, Syria and Tunisia. The project involves a series of events and technical assistance activities at the regional, sub regional and national levels covering all maritime sectors and it is managed by the European Commission EuropeAid Cooperation Office, in cooperation with Directorate General of Maritime Affairs and Fisheries (DG MARE).

<sup>8</sup> 4,4 M€ for transnational proposals in the Atlantic Sea and Mediterranean Sea - [www.seas-era.eu/](http://www.seas-era.eu/)

MPC would like to be:

- trained through joint research with EU partners,
- more involved in decision making processes when marine eco-systems are taken into account,
- more visible about what they have and they do in the marine and maritime sector to better contribute to joint efforts to preserve: environment, biodiversity and so on.

Nothing more than Mediterranean Sea is common to both EU and MPC, hence these last ask even more participation in marine and maritime strategy and activities when compared to other sectors.

The following perspectives of some experts from MPC are aimed at complementing SRA, identifying some elements for a tentative SWOT analysis (see Table 2), and finally at finding new instruments to foster HCB in the Mediterranean region.

MPCs concern is related to pressure, due to climate change and human impact on:

- **MARINE BIODIVERSITY:** many MPCs have developed a good deal of marine studies and pay a certain attention to develop HCB with training actions, PhDs and so on. They ask for proper networking at regional and international level for giving added value to their efforts.
- **COASTAL DEVELOPMENT AND DEFENSE:** there is the need to have a comprehensive monitoring of erosion and to develop a more incisive awareness of the problems that offshore sediment dredging, sand extraction along the beaches and gravel quarrying in river beds (18).
- **PORTS/TOURISM:** both development of ports and improvement of tourism may have an important socio-economic impact on countries but only if care is taken to safeguard the environment of the sea and the coasts. As far as security and ports are concerned, there is the need to learn from existing coordination practices between cruise/marine tourism stakeholders in ports and with cruise operators, to exchange information on practices between country/ports served by the same cruises with a view to harmonize security and facilitation procedures, and to coordinate and promote joint actions in safety, rescue and marine pollution (17).
- **GOVERNANCE:** in some MPC there is not a lead agency with overall responsibility for managing marine environment and overlapping can be a barrier to effective measures to human capacity building projects and initiatives. Pressure is also “felt” on some main directives and indicators of EU, that should be better discussed and endorsed by MPC.
- **POLLUTION:** marine accidents, waste water, introduction of aliens species from ballast water are well-known issues but instruments to mitigate and minimize their effects need to be further investigated and implemented. In many MPC there are no sufficient actions to prevent pollution and ways to contain its impact on marine resources (18).

Hence **Human capacity building** needs to involve:

- a) training through research on common projects of mutual interest;
- b) sharing of knowledge on cooperation activities and data available for the sector;
- c) sharing of infrastructures;
- d) awareness of all the opportunities of further collaboration;
- e) a deeply knowledge of main EU Directives and their meaning in concrete terms;

- f) being able to cooperate from the beginning in the definition and/or the implementation of the indicators of GES (Good Environmental Status);
- g) new mechanisms for making academia and industry working together for shared benefit;
- h) campaign of awareness of the importance of marine research, aimed to involve policy makers and stakeholders.

<b>SWOT ANALYSIS</b>	
<b>STRENGTHS</b>	<b>WEAKNESSES</b>
<ul style="list-style-type: none"> <li>• Renewed partnership in the area concerned and acknowledgement from EC, MS and MPCs of the importance of M&amp;M and HCB</li> <li>• Expertise in marine science</li> <li>• Steps towards integration of policies (Marine Strategy Framework Directive (MSFD), Water Information System for Europe (WISE-Marine), European Marine Observation and Data Network (EMODnet + INSPIRE)</li> <li>• Initiative for the depollution of the Mediterranean Sea (one of the 6 priorities of the Union for Mediterranean)</li> <li>• A good deal of cooperation activities in the sector at both international and regional level</li> </ul>	<ul style="list-style-type: none"> <li>• Institutional difficulties and overlapping of jurisdictions</li> <li>• Limited budgetary allocation</li> <li>• Difficulties in making scientists and entrepreneurs to cooperate</li> <li>• Lack of collaboration between public and private sectors</li> <li>• Difficulty to have databases for marine and coastal areas</li> <li>• Lack of prioritization of HCB in Marine and Maritime at national level</li> <li>• Socio-economic issues as research subjects;</li> <li>• Expertise in new technologies and infrastructures</li> </ul>
<b>OPPORTUNITIES</b>	<b>THREATS</b>
<ul style="list-style-type: none"> <li>• Multi-disciplinary topics and approach in the sector concerned</li> <li>• Focus on Mediterranean (EU Member States and MPC) priorities.</li> <li>• New initiatives of EC and MS toward a programme level cooperation action</li> <li>• EU-MS of Med area are very interested in sharing data for benefitting of common sea</li> <li>• More in-depth coordination at different levels for establishing environmental and ecosystem variability, ecosystem approach and integrated maritime policy; regional ownership and cooperation for achieving GES.</li> </ul>	<ul style="list-style-type: none"> <li>• Institutional / Political instability</li> <li>• Global crisis</li> <li>• Security issues</li> </ul>

Table 2- Opportunities and threats for cooperation and HCB in marine and maritime in Mediterranean region

### 3. Action Plan for new mobility mechanisms in the Med Region

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In order to define an action plan for mobility in the Euro-Med region, some initiatives suggested in the frame of SEAS-ERA project, as described in the Seas-Era Deliverable 5.3.1 *Proposal for Human Capacity Building calls within Common Programs and Joint Calls* and examples of integrating efforts and finding synergies among different activities have been provided.

#### 3.1 Some of the initiatives suggested to foster HCB in marine and maritime sectors

##### A) Short Term Initiatives

- Mobility patterns, personnel exchange and more involvement under *SEAS-ERA joint calls*
- Encouraging an inter-partners and inter-projects cooperative training network

##### B) Medium-Long Term Initiatives

- HCB activities** in sectors related to marine and maritime should be taken into account in new forms of Joint Programming Initiatives, such as the Art.185 of TFEU under discussion.

#### 3.2 Best Practices to be taken into account as concerns new mobility patterns to integrate national research programme while enhancing HCB

<b>FRANCE</b>
N/A
<b>GREECE</b>
N/A
<b>ITALY</b>
<p>On the basis of national research programmes, a project has been approved by European Commission under the ‘People’ programme of the 7<sup>th</sup> Framework Programme (2007-2013).</p> <p>The BANDIERA (Best action for National Development of International Expert researchers Activity) project is based on two Italian flagship projects, i.e. pluri-annual large national projects launched by the national plan of Research 2011-13 of Italian Government. BANDIERA aims at attracting incoming experience researchers from EU member States, Associated States and Third Countries willing to undertake interdisciplinary research and training in the fields covered by the two flagship projects. One of these last is RITMARE, the <i>Italian Research for the Sea</i> project.</p> <p>The attempt to turn national programmes into international ones by attracting researchers from other countries with the co-funding of European Commission (COFUND initiative), is one of the actions that can enhance HCB and foster international cooperation both with EU member States (and AC) and with MPC.</p> <p>In the framework of RITMARE project a COFUND initiative is under negotiation (around 1 M€). Three calls will be published and six positions are envisaged in total for a duration of 24 months each. The fellows will be recruited by CNR to ensure homogeneous employment contracts and conditions and will be hosted</p>

either at CNR Institutes or at any other institution participating in the flagship project, on the basis of specific agreements that will be stimulated on purpose, according to their research.

According to the DoW of RITMARE project, began in 2012 and lasting 5 years, an important pilot action on mobility devoted to young PhD students of non-EU Med Countries is also foreseen. 10 specific PhD grants are foreseen, and in particular:

- themes of Doctoral programs will be in line with scientific WPs of the projects;
- scholarships will be assigned by a Commission of experts on the basis of an international call;
- during the first six months of the programme, PhD students will attend (at Italian Universities, Public and Private Research Organizations, or Industries) a course on Marine science in English (e-learning platforms will be also considered);
- PhD thesis will be published through RITMARE funds.

#### MALTA

The **“Training Programme on Regional Ocean Governance for the Mediterranean, Black, Baltic and Caspian Seas”** builds upon the more than 30 years experience of the International Ocean Institute in conducting training and capacity building programmes on ocean governance and focuses on the linkages between natural, social and economic sciences and the development of sustainable ocean governance, and on the research-management interface and the support of technology to enable the effective achievement of ocean management and sustainable development. The course aims to build stronger inter-regional coherence in countries’ engagement in the governance of the regional seas, promoting inter-regional cooperation, shared experiences and exchange of best practice scenarios, and fostering interaction between participants from diverse countries bordering the regional seas under study. This outcome will be achieved through the pursuit of the following goals and objectives:

- To assist Mediterranean and Eastern EU countries in the formation of a core of decision-makers who will be aware of complex global and regional contemporary issues of coastal and ocean management.
- To deepen understanding of the ever-increasing importance of regional seas and their resources in regional politics and sustainable economic development.
- To present problems facing enclosed and semi-enclosed seas (in particular the Mediterranean, Black, Baltic and Caspian Seas) and demonstrate ways to overcome them.
- To provide an insight into contemporary coastal and ocean law and policy issues and build capacity to maximise benefits from the United Nations Convention on the Law of the Sea and other global and regional conventions.
- To highlight the IMO-related conventions which are particularly relevant to semi-enclosed seas, and provide reference to IMO efforts including concepts most relevant to the Regional Seas;
- To promote the role of science in supporting the development and implementation of ocean governance and quantify, through specific applications, the benefits that scientific inputs can make to the sustainable governance of ocean and coastal resources.
- To take account of emerging and evolving socio-economic, environmental and scientific realities as a framework for future development of ocean governance to changing scenarios.
- To provide a forum for exchange of views between managers and researchers and promote a better understanding of the science-management interface in coastal and ocean management.
- To make use of state-of-the art scientific and technological developments, including state-of-the-art ocean/coastal observing systems, approaches and methodologies addressing the various options for integrated management.
- To catalyse the networking among participants and regional resource persons, and building lasting relations between participants.

The training course will move away from the traditional approach to a hands-on learning-through-practice approach which will provide the trainees with an opportunity to participate in real case studies of data collection, management and decision-making processes such as in coastal zone planning and management, combating, monitoring and containment of marine pollution.

In this way, trainees' analytical skills will be developed in order to better assess coastal and ocean issues and appropriate integrated responses, through a multi-disciplinary approach.

SPAIN

N/A

Last but not least, it deserves here any mention the initiatives undertaken in the framework of FAO-COPEMED (Coordination to Support Fisheries Management in the Western and Central Mediterranean) project, under the responsibility of the Marine and Inland Fisheries Service (FIRF) - Fisheries and Aquaculture Department – Food and Agriculture Organization (FAO)<sup>9</sup>. Training actions and mobility initiatives have been undertaken in several marine resources fields.

### 3.3 General Recommendations to HCB actions for addressing future challenges

Innovation must be embedded in research and HCB activities. To this aim, the following recommendations, resulted from the report of European Commission – “Mobility of Researchers between Academia and Industry” (23) should be taken into account for HCB actions at both national and international level.

#### 1. Favouring training programmes adapting to social and market needs

- Develop graduate and doctoral programmes in partnerships with the business community, including with SMEs, as jointly developed programmes will better suit future employers' needs. Industry involvement in defining and reviewing academic training programmes will also help adapting them to constantly changing market needs (23).
- Involve stakeholders in some joint cooperation activities may help to better understand the impact on society.

#### 2. Favouring training actions conducted with representatives of industry sectors

- Develop inter-sector mobility opportunities via staff exchanges, part-time positions, sabbaticals, honorary positions, or financial or statutory incentives, offered to both early stage and established researchers.
- Develop the concept of consultancy by academic staff as one of the simplest ways for academia to interact with industry and exchange research expertise (23).

#### 3. Improving researchers career through appraisal of mobility

RTI institutions should provide incentives for both international and inter-sector mobility through internal academic appraisal systems and develop fair and transparent career evaluation processes as

<sup>9</sup> <http://www.faocopemed.org/>

recommended by *the European Charter for Researcher and the Code of Conduct for the Recruitment of Researchers*<sup>10</sup>.

#### **4. Favouring conditions for academia-industry partnership**

- Spurring actions providing jointly funded research grants and fellowships. Joint funding will foster collaboration. Experience shows that companies (both large and SMEs), which contribute financially to training fellowships, tend to become more committed in the training of researchers, incorporating them in core projects of the company (22).
- Develop informal networks and activities between SMEs and academia.
- Implement clusters.

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<sup>10</sup> The Charter provides a framework of general principles and requirements for the roles, requirements and entitlements of both researchers and their employers/funders. The Code of Conduct sets out some specific guidelines around the recruitment of researchers. The Charter and the Code were formally adopted by the Commission as a Recommendation on 11 March 2005, <http://ec.europa.eu/eracareers/europeancharter/>

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