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1. Context and Purpose

Internationalization and multi-polarization of research open a critical avenue to 'observatories' that describe the many aspects of global challenges, which need to be addressed with interdisciplinary teams and a long-term vision. The Mediterranean Observatories are now sufficiently numerous to create a diversified and heterogeneous institutional landscape. These differences need to be respected, and complementarities highlighted. They are both the result of thematic focus and institutional history.

In order to meet the demand of giving support to the Observatories in the Mediterranean region, one of the aims of MEDSPRING is to explore and facilitate the creation of « a dialogue/cooperation Platform » of Euro-Mediterranean observatories linking, describing and analyzing the research and innovation potential in the region, to support monitoring policy development and cooperation in areas of mutual interests and needs, with emphasis on the societal challenges addressed by MedSpring "Resource Efficiency", High Quality Affordable Food", "Energy" as well as other related challenges and cross-cutting issues.

The main objectives of the work to be done in the frame of WP8 are: to find common principles, to reduce monitoring (collecting data from different forums), to substantiate policy by twinning and federating, and to explore ways and means of creating synergies.

2. Recommendations for strengthening the networking among observatories

As showed by the deliverables D8.1- Catalogue of Existing Observatories and D8.2 Yearly update of catalogue of existing observatories the way to observe and monitor EU-MED cooperation as well as trends in the MEDSPRING selected societal challenges is still fragmented. Existing Euro-Mediterranean observatories are established as independent entities with little inter-alignment and linkages.

One of the recommendations concluded from the previous survey conducted within this work package is to strengthen the networking among observatories. Accordingly, and in order to have a better view of the different monitoring initiatives in EuroMed another survey was designed to examine the objectives, functionality and potentials of the observatories. The deliverables aimed at providing a global and comprehensive analysis of Euro-Mediterranean observatories landscape. For this reason the survey compared observatories that exist in various areas (most if not all being related to environmental challenges). Questions were designed to have a large view on the activities deployed by each observatory including common activities, training, data sharing etc. This work pursues efforts already started in 2013. The

questionnaire survey was repeated in 2014 and addressed to 78 observatories, from both European countries and EU Mediterranean Partner Countries (hereafter referred to as MPCs). Thirty five observatories filled in the questionnaire in 8 countries altogether (2 in Europe and 6 in MPCs) with a non-balanced distribution of responses, i.e. 19 of the observatories working in Europe and 16 in the MPCs. This response rate (45%) can be considered as quite satisfactory.

Other important inputs for the identification of recommendations for strengthening the networking among observatories come from the EuroMediterranean Observatories Meeting on Indicators organized in Marseille on November 2015, 5th. The Euro-Mediterranean Observatories Meeting on Indicators was organized in order to gather Euro-Mediterranean observatories to discuss and agree a possible set of 10 indicators of water quality monitoring, as agreed in Beirut during the 2nd EuroMed Observatories Networking Meeting.

The selected indicators provide information about whether Mediterranean countries are making policy progress in water quality initiatives, if they are setting up efficiency objectives for each water use sector, what impact past and present actions may have on the stock of resources. The proposed indicators will be the basis for gaining insight of trends and scenarios in relation to a specific regional societal challenge (i.e.: water) This meeting gathered thirteen participants from Euro-Mediterranean Observatories and research entities from five different countries: France, Italy, Lebanon, Tunisia, and Morocco.

During the meeting a Roadmap for Euro-Med Observatories Cooperation in Water was defined. Participants not only discussed possible ways of collaboration to achieve a good insight of water monitoring but also delivered a proposal of cooperation among the observatories on “water quality monitoring pilot case”.

2.1. Improving visibility on observatories results stimulates cooperation

This situation of extreme fragmentation is due to several reasons linked mainly to the legal form of the observatories.

Policy has certainly affected the creation of these EuroMed Observatories since the creation of these observatories is, for a majority, a consequence of an inter-institutional collaboration (for example through a political an administrative policy) or a collaboration between researchers (through specific research projects). Only a few are generated through bilateral agreements or through funded projects.

Figure 1 shows that a large majority of the interviewed Euro-Med observatories are a dependency or unit of a public university or a public research institute (30%). Another 16% of respondents represents an autonomous public institution or are born by a

specific collaboration agreement between two or more institutions. The number of observatories linked to the private sector is very limited.

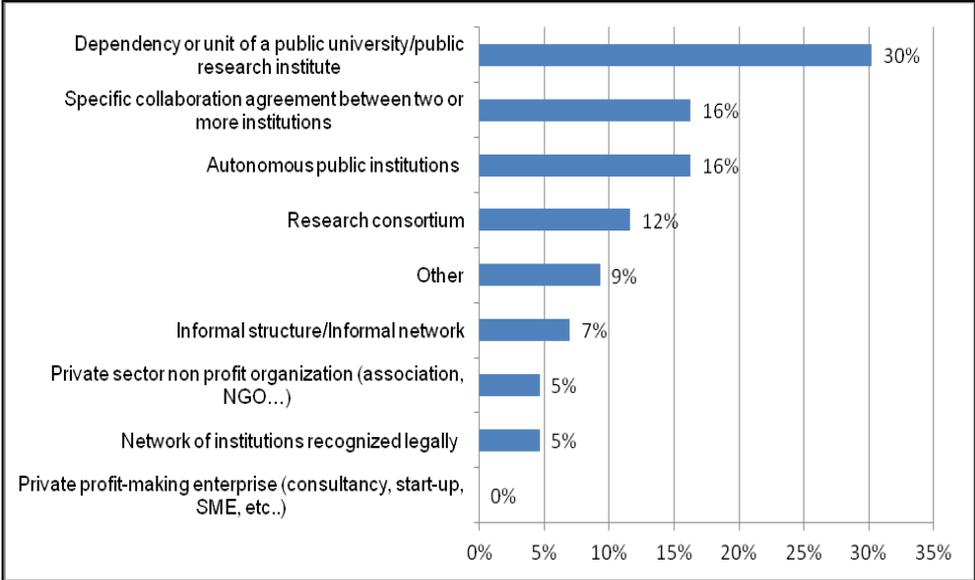


Figure 1- Legal form of your observatory

As shown in Figure 2 databases are the main mode of dissemination of the data among the surveyed observatories (25% of the respondents). Websites and seminars or conferences are also recognized as the main tool of data sharing (22%). Publications, regular (16 %) or occasional (13%), rank fourth.

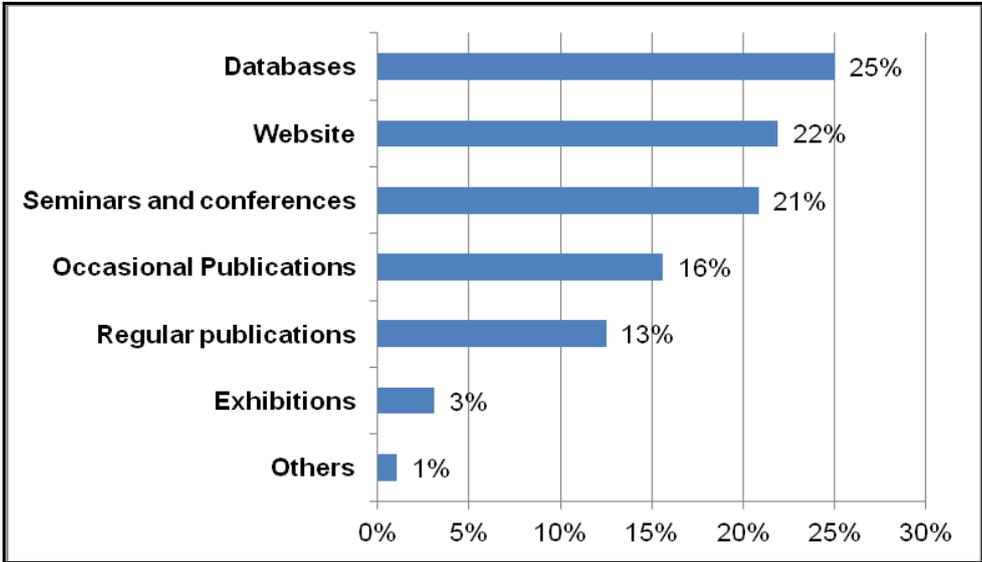


Figure 2 - Main Modalities of Data Dissemination

As seen in Figure 3 the majority of the surveyed observatories declare to be a unique data producer (21 respondents on 36) and the half of the surveyed observatories (18 observatories) focuses its work on the Mediterranean observatories. The 22% of respondents produce instruments and methodologies but only another 22% of the total belongs to an international network of similar observatories worldwide. Data

produced by respondents are mainly used in the policy field (19 observatories) and to a lesser extent for modeling occurring elsewhere (ex. Climate data, hydrological data, etc.).

This information shows that Observatories were rather unique institutional creations (only one fifth is part of a larger international network), producing specific (“unique”) data, dedicated to the Region. Both policy and modeling (to a much lesser extent) are the main uses of the data.

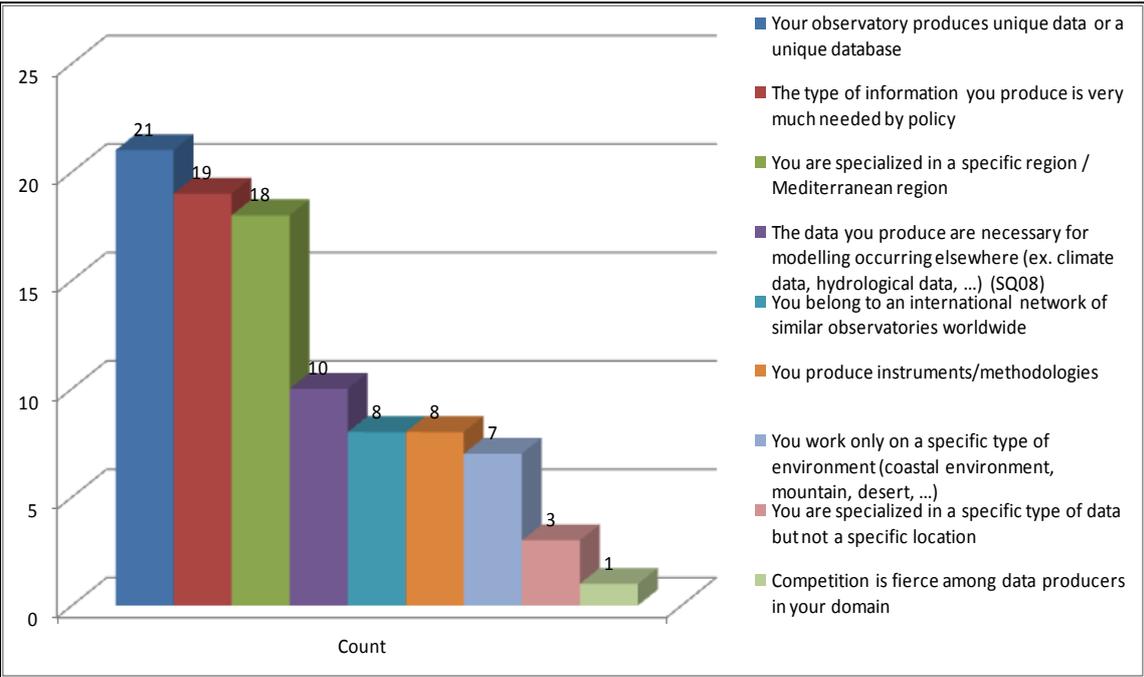


Figure 3 - Position among producers and users of data

Even if the majorities of observatories belong to institutional networks they still need more visibility on a regional and international scale. Nonetheless, all these units have a strong geographic focus on the Mediterranean, based on a specific location in the Mediterranean or on the Mediterranean region itself.

Observatories must increase the visibility of their research to demonstrate the contribution they make to the knowledge economy, improve their chances in the competition for government research funding and position themselves well to work with industry or third sector partners.

An open access repository or a digital portal is a way for observatories to make their results freely available online. Open access benefits not only researchers and their institutions, but the economy and society at large, as the outputs of publicly-funded research are available for all to use.

2.2. Focusing on scientific collaborations as a tool towards cooperation

More than 25% of Observatories identified have been created through collaboration between researchers and direct exchanges between researchers (20%) are recognized as the main instrument for collaborative work and networking (Figure 4).

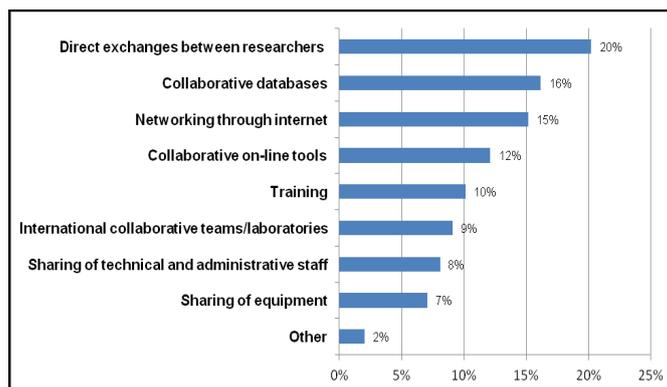


Figure 4 - Instruments used for collaborative work and networking

The interviews collected during the survey offer additional food for thought in this sense.

Pluridisciplinary Urban Environment Observatory, OPEU (France)

The collaboration concerns several research laboratory, associations of the civil society, and public institutions (City hall, region, sectorial organization)''

Observatoire du Tensift – Système d’Observation ou d’Expérimentation (Morocco)

The observatory has been created based on a the close collaboration initiated in 2002 between the IRD team of the Biospheric Center for Spatial Studies (CESBIO, Toulouse, France; <http://www.cesbio.ups-tlse.fr>) and a consortium of partners in Morocco, associating researchers from the Cadi Ayyad University (Marrakech, Morocco), managers of the regional office for agricultural water of Marrakech and of the hydraulic agency of the Tensift Catchment and engineers from the Metoffice of Morocco.

Air Quality Research Unit, AQRU (Lebanon)

This collaboration includes three local universities (USJ, AUB and NDU) with researchers of various disciplines as well as five French institutions under the patronage of CNRS-L. This collaboration has been going successfully for four consecutive years.

Observatoire Liban Francais de L'Environnement, O-LiFE (Lebanon)

In France, the National Center for Scientific Research (CNRS), the Research Institute for Development (IRD) and the University of Montpellier via its Observatory of the Sciences of the Universe (OREME) have associated with the National Center for Scientific Research in Lebanon (CNRS-Lebanon) and several Lebanese and French universities (The University of Toulouse, the University of Grenoble, the Lebanese University, the University of Balamand, the University of Saint Joseph, the American University of Beirut, the University of Saint Esprit de Kaslik, Beirut Arab University, Lebanese American University) to create the O-LiFE observatory. In summary, the main activity of the observatory is to study the critical zone of

the earth around the Mediterranean, including the study of water resources, biodiversity, natural hazards, management of the environment and ultimately the study of land use. To carry out its mission, O-LiFE will provide means of mobility and shared services. The observatory aims to construct environmental databases, create collaborative software tools, and also provide the scientific and technical support to facilitate responses from researchers to international calls for tenders. The recent agreement signed between all O-Life actors for the creation of an international associated laboratory will quickly materialize this initiative.

ObServe (Lebanon)

The proposed project benefits from the scientific dynamics launched as part of the CIO Mediterranean project, under the "Surfaces and Continental Interfaces in Mediterranean" Programme (INSU / IRD / INRA in the pursuit of ECLimed project "Snow and climate in the Mediterranean", (B. Duchemin / L. Jarlan) within the program "MISTRALS" (www.mistrals-home.org). The goal of this project is to strengthen scientific cooperation with partners in the South and East of the Mediterranean on the crucial issue of the integrated and sustainable management of water resources. It will benefit of the CESBIO participation in the international joint laboratory "TREMA" (Water Resources Remote Sensing and semi-Arid Mediterranean <http://trema.ucam.ac.ma/>) and of "O-Life" project dynamics (Observatory Franco-Lebanese Environment (MISTRALS, University of Montpellier, Observatory of Sciences of the Universe OREME (CNRS, IRD UM), CNRS-Lebanon, and many Lebanese universities UL, LSU, AUB, USEK, Wisdom, Balamand).

Observatoire Hommes-Milieus « Littoral méditerranéen», OHM Littoral méditerranéen (France)

This Observatory has been created by the CNRS in France, along with others observatories of that kind. They all constitute a network of excellence, certified as a Labex by the French Ministry of Research. At this stage, the OHM "littoral méditerranéen" is only focused on French Mediterranean coastal zones, but the ambition is to connect with other study sites in the Mediterranean.

Observatoire de Recherche en Environnement Draix-Bleone, ORE (France)

Initially the observatory was funded by collaboration between IRSTEA (French Research Institute of Science and Technology for Environment and Agriculture) and ONF (French National Forest Services). Currently, ONF is not involved anymore in the observatory.

SPEciMed (France)

SPEciMed relies on the joint expertise of oceanographers from the fields of physics, chemistry and biology to comprehend the whole reactional continuum ultimately controlling the response of ecosystems.

R-OsMed (France)

ROSMed network is at present made up of twenty scientists from eight countries (France, Italy, Lebanon, Morocco, Portugal, Spain, Syria and Tunisia). It is led by Yves Le Bissonais, research director at UMR LISAH.

Observatoire des Transformations dans le Monde Arabe, OTMA (France)

OTMA is based on a strong institutional cooperation between IRD (Institut de Recherche pour le développement) and INED (Institut National de la Statistique) that gathered many Arab Universities and Research center.

Moreover, the academic world is the main end user of the data collected by the respondents (Figure 5). Within this domain researchers rank first, followed by students and universities as shown in the following graph.

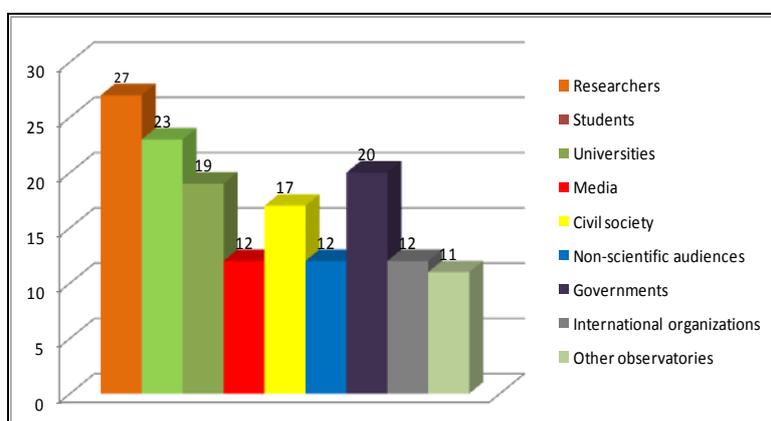


Figure 5 - End users of the data collected

2.3. Exchanging and sharing of data, instruments and know-how as a tool towards cooperation

The development of databases and meta-databases represent the core activity of all the monitoring structures. By using systemic methods, the observatories elaborate, analyze and study data. Publication and dissemination mainly to the research community of their results are also part of their activities.

Most of the observatories' expenses are related to database management, which corresponds to their main activity.. This issue is critical for observatories, since, for the majority of them, they produce a unique database both for policy purposes and academic (research) needs.

All observatories have clearly showed the need to share data and experience for data management and networking. A better coordination for the valorization, dissemination and publication of research results is needed too.

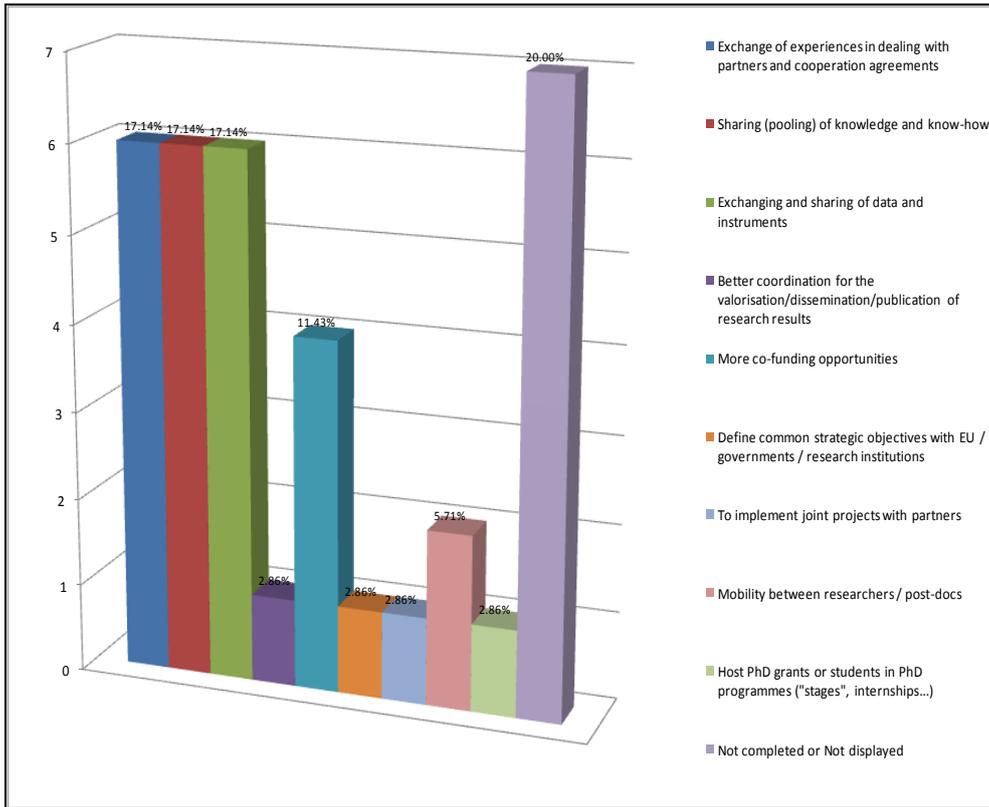


Figure 6 - Actions more necessary for your domain of expertise?

2.4. Exchanging experience in dealing with partnerships and cooperation agreements

The survey extended its analysis towards including the cooperation agreements or collaborative work and networking conducted within observatories.

Participation to cooperation agreements with partners' institutions is much more frequent in the EU Observatories group than in the MPC (respectively 65% and 35%) as illustrated in Figure 7.

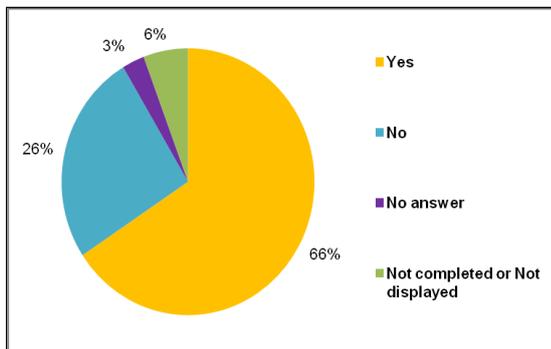
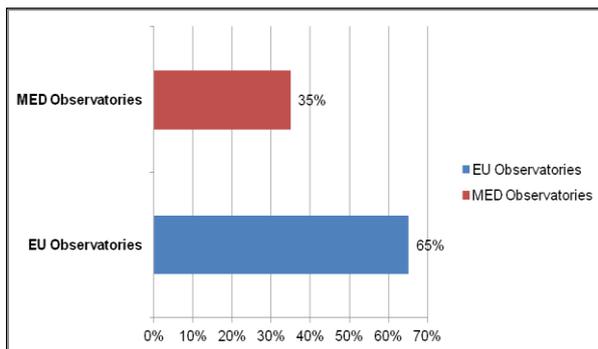


Figure 7 - Do you have cooperation agreements?

Figure 8 - Geographical distribution of Figure 7



Total of respondents having cooperation agreements	EU Observatories	MED Observatories
23	15	8

Table 1- Distribution of respondents having cooperation agreements

However Figure 9 reveals that only 34% of the respondents belongs to a global network. The reasons could be the lack of instruments of collaborative work, the subestimation of the networking, a 'national-oriented' approach or a budget lack.

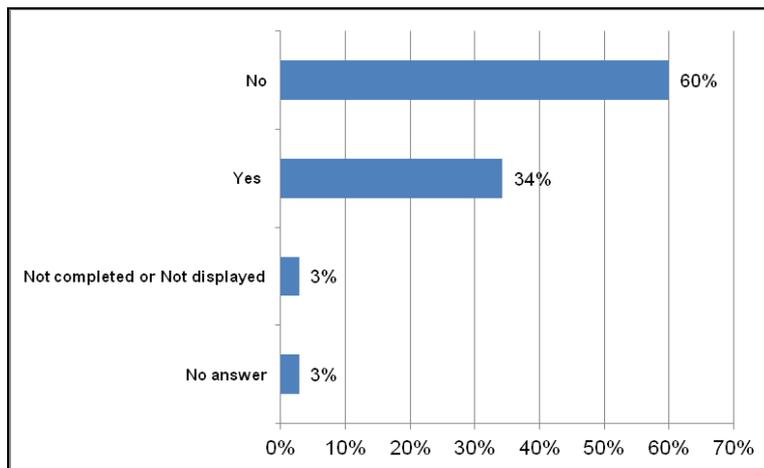


Figure 9 - Does your observatory belong to a global network?

Nevertheless, when asked to select a set of instruments used for collaborative work and networking, surveyed observatories insisted on the importance of direct exchanges between researchers (20%), collaborative databases (16%). Cheap and easy systems as networking through internet (15%) and collaborative online tools are considered as strategic too. On the contrary sharing of equipment or staff and international collaborative teams are definitively not diffused among the Euro-Med observatories surveyed.

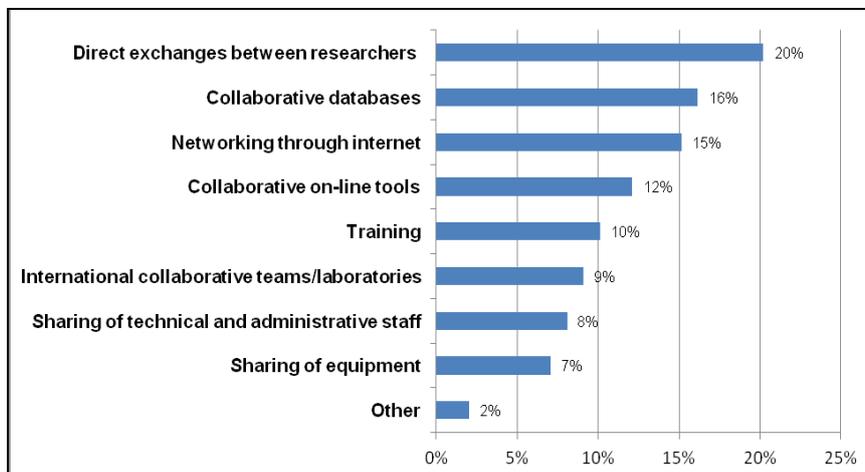


Figure 10 - Instruments used for collaborative work and networking

2.5. Implementing joint projects with other observatories

54% of the respondents mention that their observatory generates research projects that are funded externally. It is interesting to remark that among them the large majority (74% of respondents) is composed of EU observatories.

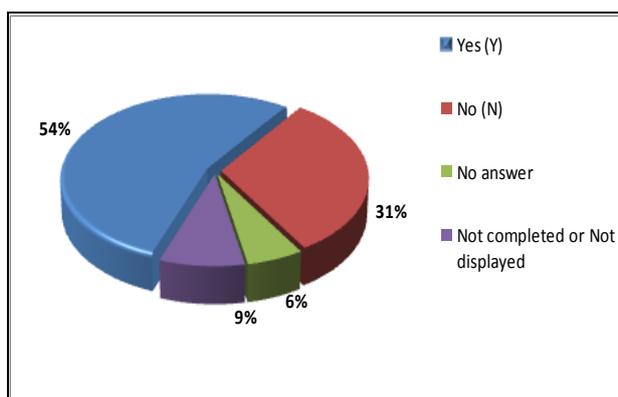


Figure 11 - Does your observatory generate research projects to be funded externally?

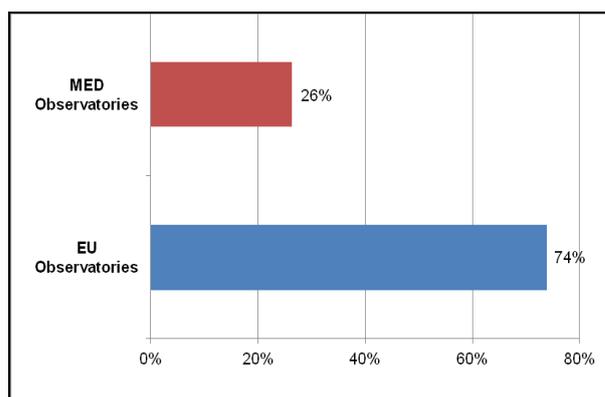


Figure 12 – Geographical distribution of observatories generating research projects to be funded externally

The benefits of funded research programs have a large impact on all the activities undertaken by observatories. Examples are:

- *Increases observatories resource:* provides additional resources to observatories and supports research, personnel, community outreach, laboratory development, travel, equipment, and supplies.
- *Facilitates higher quality research.* External funding makes it possible to study problems of greater depth, breadth, and significance.
- *Promotes observatory vitality and visibility in the field.*
- *Contributes to higher quality, state-of-the-art research equipment and laboratories.*
- *Improves observatory recruitment:* most externally funded research projects require the hiring of additional personnel. Thus, new PhDs for example seek positions in active, research-supportive environments where they can collaborate with colleagues to apply for research grants and study important questions in their fields.
- *Enhances observatory reputation and chances for additional funding:* funding agencies like to fund projects and proposals from institutions with proven records of success.

2.6. EuroMediterranean Water Observatories Case Study: a good example of collaboration platform

During this meeting, a Roadmap for Euro-Med Observatories Cooperation in Water was defined. Participants not only discussed possible ways of collaboration to achieve a good insight of water monitoring but also delivered a proposal of cooperation among the observatories on “water quality monitoring pilot case”.

The representatives of the EuroMed Observatories suggested proceeding to the creation of a Mediterranean Network of Environment observatories and research infrastructures. Representative observatories also expressed their need to be considered as research infrastructures eligible for further national, regional and international calls.

*Proceed to the creation of a
Mediterranean Network of
Environment observatories and
research infrastructures*

The EuroMediterranean Water Observatories also stressed on the need to define common strategic objectives with EU/governments/research institutions. They highlighted the importance of convincing EU institutions, through the European Strategy Forum on Research Infrastructures (ESFRI), of the observatories potential to take part of the Research infrastructure. Accordingly, they suggested developing a White Paper indicating the way forward for Euro-Mediterranean cooperation among different observatories. The target audience of this Paper is the European Commission, national and local governments, the academic community and non-governmental organizations.

*Define common strategic
objectives with EU, National
governments and research
institutions*

In light of all what was discussed in this meeting, participants suggested to hold, under MedSpring, another workshop to identify variables related to the set of common indicators agreed during Marseille's meeting. Side visits could also support this workshop

*Effectuate side visits to
facilitate discussions and
knowledge transfers*

Participants also suggested the implementation of a EuroMed Observatories Digital Portal for sharing virtual metadata tool to reference data but also for sharing skills and needs between observatories. Moreover thanks to a data quality label the digital portal will offer support to decision making process. The portal will represent a bridge between civil society and institutions to whom will provide metadata useful for policymaking process.

*Create a Digital Portal that will be
not only a virtual metadata tool to
reference data but also a platform for
sharing skills*