

Proposal full title

Action Plans for Integrated Regional Monitoring Programmes,
Coordinated Programmes of Measures and Addressing Data and
Knowledge Gaps in **Med**iterranean Sea

Proposal acronym:

ActionMed

Call concerned: **BEST PRACTICES FOR ACTION PLANS TO DEVELOP
INTEGRATED, REGIONAL MONITORING PROGRAMMES, COORDINATED
PROGRAMMES OF MEASURES AND ADDRESSING DATA AND KNOWLEDGE
GAPS IN COASTAL AND MARINE WATERS**

Reference: DG ENV/MSFD Action Plans /2014

Name of the Coordinator: **Dr Kalliopi Pagou – HCMR, Greece**

Partners: **UNEP/MAP (affiliated Plan Blue)
CORILA (affiliated CNR-ISMAR, OGS), Italy
IEO, Spain
University of Salento, Italy
University of Athens, Greece
NIB, Slovenia
ISOTECH, Cyprus
University of Thessaly, Greece**

November 17, 2014

17h00, Brussels local time



EUROPEAN COMMISSION
DIRECTORATE-GENERAL
ENVIRONMENT
Directorate C - Quality of Life, Water & Air

GRANT APPLICATION FORM FOR

‘DG ENV/MSFD Action Plans/2014’

(Multibeneficiary)

**"BEST PRACTICES FOR ACTION PLANS TO DEVELOP
INTEGRATED, REGIONAL MONITORING PROGRAMMES,
COORDINATED PROGRAMMES OF MEASURES AND ADDRESSING
DATA AND KNOWLEDGE GAPS IN COASTAL AND MARINE
WATERS"**

PROGRAMME CONCERNED
BEST PRACTICES FOR ACTION PLANS TO DEVELOP INTEGRATED, REGIONAL MONITORING PROGRAMMES, COORDINATED PROGRAMMES OF MEASURES AND ADDRESSING DATA AND KNOWLEDGE GAPS IN COASTAL AND MARINE WATERS
REFERENCE NUMBER OF THE CALL FOR PROPOSALS
MFSD Action Plans 2014 – Call for Proposals
SUMMARY OF THE APPLICATION
Title: Action Plans for Integrated Regional Monitoring Programmes, Coordinated Programmes of Measures and Addressing Data and Knowledge Gaps in Mediterranean SEA
Identity of the coordinator: HELLENIC CENTRE FOR MARINE RESEARCH
Summary of the action: The main objective of this project is to support the development of regional action plans and best practices for integrated monitoring programmes, coordinated programmes of measures and the filling of data gaps for Mediterranean marine waters and thereby improve implementation in the next steps of the MSFD, in particular in relation to the review of the initial assessment, the GES definition and the environmental target setting in 2018, including (financial) planning as well as the related integration of data management. In particular, a) to tackle the most relevant issues at a regional level, so as to enable a systematic solution of current gaps and shortcomings in relation to Articles 8, 9 and 10 of the MSFD and building on ongoing regional and EU work; b) Develop strategies/methodologies for ongoing assessment of Biodiversity indicators; c) Set the basis for coherent design and implementation of MSFD monitoring programmes; d) Assist EU MSs in Mediterranean in their work on programme of measures and where necessary, to develop project and investment plans; c) to establish an information management system to allow relevant knowledge and data to be updated on a regular basis and used by the RSCs, the European Environment Agency (EEA) and other interested users for their purposes. The proposal is structured in 5 Activities. Activity 1: Systematic solutions of current gaps and needs in relation to articles 8, 9, 10 of the MSFD. Focus on biodiversity, Activity 2: Gaps, needs and actions to implement for national and regional monitoring for MSFD programmes (article 11), Activity 3: Assistance in the preparation of programme of measures, by addressing particular gaps identified both at national and regional level, linking together work on Programmes of Measures (PoM) under the MSFD and under the auspices of UNEP/MAP-Barcelona Convention (the PoM Activity), Activity 4: The information management system for knowledge and data update, Activity 5: Coordination and management, communication, dissemination and sustainability. The ActionMed Proposal is being prepared with the participation of ten Institutions: UNEP/MAP (Dr T. Hema & Dr G. Gurban) and its affiliated international organisation Plan Blue, IEO/Spain (Dr Fransisco Alemany), Univ. Salento/Italy (Dr Alberto Basset), ISOTECH Ltd/Cyprus (Dr Xenia Loizidou), Univ. of Athens/Greece (Prof. Manos Dassenakis), CORILA (Dr Pierpaolo Campostrini) and its affiliated CNR ISMAR and OGS, NIB/Slovenia (Dr Borut Mavric), Univ. of Thessaly (Prof. H. Kokkosis), whereas the Institute of Oceanography – HCMR/ Greece is the Coordinator of the Project (Dr Kalliopi Pagou). The ActionMed proposal will be supported by international organizations, competent authorities and EU projects (letters of interest/support provided).
Duration (in months): Fifteen (15) months
Requested amount (in €): 999,819.000
Starting date of the action: 1st May 2015/1st June 2015

III. INFORMATION ON THE ACTION FOR WHICH THE GRANT IS REQUESTED

1 DESCRIPTION OF THE ACTION

Title:

Action Plans for Integrated Regional Monitoring Programmes, Coordinated Programmes of Measures and Addressing Data and Knowledge Gaps in Mediterranean SEA.
ActionMed

Reference: DG ENV/MSFD Action Plans /2014

a) Describe the action on the basis of the main activities planned and where it will be implemented.

ActionMed: Concept and Objectives

The European shelf seas are major assets for the economy and welfare of society. The nature of the goods and services provided by the regional seas and their coastal areas range from those characterized by non-monetary values, such as pleasures from the sea and coastal landscapes, nature experiences and recreational activities, to those with economic value, such as commercial fishing, oil drilling, shipping and transport, mineral resource mining, wind farming, and tourism. Many towns depend on their coastal location for their industries and trade. The seas are the recipients of all material and pollution from the adjacent catchments and rivers, and from the atmosphere. The seas are also influenced by and contribute to the trans-boundary influences of climate, air, and water pollution. All the above generate a range of threats to the marine environment jeopardizing the future uses of the ecosystem goods and services.

The Marine Framework Strategy Directive (MSFD, 2008/56/EC) aims for clean, healthy and productive marine ecosystems within all EU member states by 2020 and to protect the resource base upon which marine-related economic and social activities depend. In order to achieve GES by 2020, each MS is required to develop a strategy for its marine waters, which must be kept up-to-date and reviewed every 6 years. Therefore, an ecosystem-based approach to management of the sea is central to delivery of the Marine Strategy Framework Directive (MSFD 2008/56/EC, Art. 1.3) and its overall objective to take the necessary measures to achieve or maintain good environmental status (GES) by 2020 (Art. 1.1). It can be expected that achieving GES will primarily be accomplished through reductions in pressures (from human activities) and their impacts on the marine environment.

Besides the MSFD there are several other policies and initiatives adopted in Europe and especially in Mediterranean countries, such as:

The **Integrated Maritime Policy (IMP)** for the European Union (COM(2007)575), which is an integrated, inter-sectoral approach based on the clear recognition that all matters relating to European ocean sectors and regional seas are interlinked, and to reach the desired results as GES, sea-related policies must be developed in an integrated manner.

The **Common Fisheries Policy (CFP)**, which put an emphasis on the reduction of the environmental impact of fisheries. The overall objective of the CFP is to ensure economically, environmentally and socially sustainable use of fisheries resources.

GMES (Global Monitoring for Environment and Security) is the European Initiative for the establishment of a European capacity for Earth Observation providing regular and operationally systematic reference information on the state of the oceans and regional seas, in the framework of supporting major EU policies

The **Ecosystem Approach Management (EAM)**, a framework strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way, in order to meet both ecological and human needs in the future.

In July 2014, the European Parliament and the Council adopted [legislation to create a common framework for maritime spatial planning in Europe](#). While each EU country will be free to plan its own maritime activities, local, regional and national planning in shared seas would be made more compatible through a set of **minimum common requirements**.

Currently, the MSFD needs to be implemented in all member states (MS); this process is underway and involves various steps (art. 5, MSFD) and challenges.

During the five steps towards the implementation of MSFD, the first one has been carried out: by October 15, 2012, each MS delivered the first three reports on Initial Assessments, Determination of Good Environmental Status (GES) and Establishment of Targets and Associated Indicators (Articles 8, 9, 10). The second step, i.e. the monitoring programmes, which were due in October 2014, aim at providing data and information for an assessment of the environmental status, including progress towards GES. With the implementation of monitoring programmes, the gap between the available information during the initial assessment and the information needed with regard to the assessment of GES, is expected to be further reduced.

The results of the first reports on IAs, GES and Targets show that more efforts are urgently needed if EU is to reach its goal. The Commission found significant gaps in knowledge and data on marine issues. Only a few Member states put forward a strategy to close the existing gaps and particularly in the Mediterranean Sea.

For example, most of the Member States in their Initial Assessment reports often give only a fragmented overview of the state of the marine environment, not always reflecting the available knowledge in its entirety and not establishing a baseline, which makes it difficult to assess the distance to target. As highlighted in the Article 12 Assessment, there is no consistent approach in the Mediterranean in relation to MSFD descriptors details and this is the most obvious in the case of biodiversity descriptors. Moreover, the different nature of the biodiversity descriptors presents a wide heterogeneity in the level of detail of the information made available, the appropriate methodologies, and the kind of outcomes expected.

The Mediterranean countries have committed themselves to implement ecosystem approach in the framework of UNEP/MAP Barcelona Convention in full synergy with MSFD implementation. The 17th Contracting Parties meeting adopted the timeline for implementing the ecosystem approach until 2019 and established a six-year cyclic review process of its implementation. With regard to future actions the 17th Contracting Parties meeting gave the mandate to:

- Prepare an integrated monitoring programme based on the agreed ecosystem approach indicators with the participation of and contribution from all MAP components in cooperation with other regional competent organizations;
- Develop a MAP-Barcelona Convention policy on assessments in the framework of ecosystem approach implementation
- Ensure that MAP/Barcelona Convention regional policies become coherent with the ecosystem approach progress and outcome and in particular to consider systematically the

ecosystem approach indicators when coordinating work of the various MAP components, or evaluating efficiency of UNEP/MAP actions

In the Mediterranean, the first Plan was adopted in 1975 as a Regional Seas Programme under UNEP's umbrella. The main objectives of the **Mediterranean Action Plan (MAP)** are to assist the Mediterranean countries to assess and control marine pollution, to formulate their national environment policies, to improve the ability of national governments to identify improved options for alternative development paths, and to optimize the choices for allocation of resources. In 2008, it was decided that the MAP should gradually implement the EAM to achieve "a healthy Mediterranean with marine and coastal ecosystems that are productive and biologically diverse for the benefit of present and future generations". This initiative is in line with the EC communication "Towards an integrated maritime policy for further governance in the Mediterranean" (09/2009). MEDPOL is the scientific environmental assessment component of the MAP.

As recognized in the report from the Commission to the Council and the European Parliament on the first phase of implementation of the MSFD (COM(2014) 97), as well in the In-Depth Assessment of the EU Member States' Submissions for the Marine Strategy Framework Directive under articles 8, 9 and 10 carried out by JRC (Palialexis *et al.*, 2014) the requirements of adequacy, consistency and coherence in Member States' submissions have not been widely accomplished. Specifically, in the aforementioned Commission report is pointed out that in spite of regional cooperation through the RSCs protecting the EU's marine waters, which is well-developed and that significant commitments were made by all RSCs to implement the ecosystem approach and support MSFD implementation, Member States' use of the results of regional cooperation within their marine strategies varies. This has resulted in a lack of coherence among all the EU countries, even within the same marine region or subregion (required by Article 3(5)b and 5(2) of MSFD). This problem affects all MSs, but is especially worrying in the Mediterranean, where the coherence have been lowest.

Moreover, the results of the work of the Regional Sea Conventions or of existing research projects specifically addressing gaps in knowledge on marine issues relevant to the 11 GES descriptors of the MSFD have not always been made best use of. Finally, Member States did not use the initial assessment to establish a baseline - which makes it difficult, and in some cases impossible, to assess the distance to target for achieving GES.

In the JRC report of Palialexis *et al.*, 2014 it was considered that a window of opportunity should be open to improve this situation ahead of the development of Monitoring Programmes and Programmes of Measures planned for 2014 and 2015, respectively, stressing that these will deliver better results at lower cost if they are coordinated or developed jointly across Member States.

Unfortunately, the recent experience related to the elaboration of national MSFD monitoring programmes suggest that the lack of regional coherence affecting the first phase of MSFD implementation is occurring again, affecting the current actions towards the design and implementation of monitoring programs. Several actions have been undertaken to solve this lack of coherence, as the elaboration by JRC of the "Technical guidance on monitoring for the Marine Strategy Framework Directive" (Zampoukas *et al.*, 2014) or the coordination meetings held with this aim. In the case of Mediterranean regions is worth to mention those organized by UNEP in relation to EcAp monitoring implementation, designed to taking into account MSFD requirements. However, the outputs of such actions have not been fully considered for the design of national MSFD monitoring proposals, which have been carried out independently by each MSs, without any formal coordination and hence, once the definitive versions after public consultancy periods be submitted to the Commission, they will probably show the same heterogeneity than the previous MSs submissions corresponding to the first phase of MSFD implementation. Because of that is important to start as soon as possible specific actions to

ensure the convergence of national MSFD monitoring programmes and programmes of measures in the Mediterranean region, and hence their coherence.

Moreover, within the MSFD regional approach to the management of the Europe's seas that requires MSs to cooperate with their neighboring countries when developing and implementing their marine strategies for the successful implementation of the Directive, multidisciplinary data originated from different sources and collected under different legislations and policies have to be combined together in a meaningful, coherent and consistent way in order to get an improved understanding of the complex marine environment.

Over the last decades several data bases and information systems have been set up to manage the wide range of measurements and variables that are collected within the framework of National, Regional and European activities using different standards and best practices for observations acquisition, analytical methodologies, quality control procedures, format for metadata discovery and data exchange, data products, indicators definition, descriptors assessment, etc. There are already a number of data flow schemes which have been established between the Member States, RSCs and EU/European Environment Agency (EEA) to facilitate the data flow from the observational level to the end applications and users in support of National, Regional and European Policies. Interoperability among these diverse data systems is crucial in order to achieve cross-domain optimal analysis, processing, integration, and final environmental status assessments. To reach optimal interoperability, the prescriptions and rules defined by the INSPIRE Directive have to be followed, with regards to standard services to discover, view and access the data and especially considering the guidelines on interoperability of spatial data sets and services (Data Specifications) for the INSPIRE Themes more related to the MSFD domain.

The initial assessment reports prepared by the Member States under article 8 show that data gaps are present. This is inevitable, but there are issues that have to be considered to improve the knowledge on marine system.

Main aim:

The main aim of ActionMed is to support and improve the implementation of the MSFD cycle across the Mediterranean focusing on the needs of its five steps in close collaboration with the Regional Sea Convention in the Mediterranean (UNEP/MAP) and its Ecosystem Approach. The project will review of the initial assessment, the GES definition and the environmental target setting in 2018, (Articles 8, 9, 10) with emphasis on biodiversity, will develop integrated and coordinated and financially sustainable regional Action Plans (short, mid-term and long-term and best practices for monitoring programmes (Article 11), and programmes of measures (Article 13), test their implementation and finally will support the establishment of an information Management System to fill data gaps for Mediterranean marine waters.

Specific objectives

ActionMed main aim will be implemented building on the Commissions work (Article 12) through five well-structured more specific objectives:

- a) to tackle the most relevant issues at a regional level, so as to enable a systematic solution of current gaps and shortcomings in relation to Articles 8, 9 and 10 of the MSFD and building on ongoing regional and EU work;
- b) Develop strategies/methodologies for ongoing assessment of Biodiversity indicators;
- c) Set the basis for coherent design and implementation of MSFD monitoring programmes;
- d) Assist EU MSs in Mediterranean in their work on programme of measures and where necessary, to develop project and investment plans;
- c) to establish an information management system to allow relevant knowledge and data to be

updated on a regular basis and used by the RSCs, the European Environment Agency (EEA) and other interested users for their purposes.

The projects' outcomes will be based on the active participation and consultation of the national policy leads for the MSFD and EcAp ensuring that the Action Plans will have an impact and usage on the next phases of the implementation of the MSFD and EcAp across the Mediterranean on short, medium and long term basis

ActionMed: Workplan

The work plan of the proposed project, **ActionMed**, is divided into 4 main activities, whereas a 5th one is devoted to the coordination, management, public outreach and dissemination of results. The main activities planned within this action and their implementation is described below:

Activity 1:

“Systematic solutions of current gaps and needs in relation to articles 8, 9, 10 of the MSFD. Focus on biodiversity”

Activity leader: HCMR & University of Salento (Dr Sofia Reizopoulou, Prof. Alberto Basset)

Participants: UoA, NIB, CNR-ISMAR, UNEP, UTH, IEO, CORILA

Most of the Member States in their Initial Assessment reports often give only a fragmented overview of the state of the marine environment, not always reflecting the available knowledge in its entity and not establishing a baseline, which makes it difficult to assess the distance to target.

As highlighted in the Article 12 Assessment, there is no consistent approach in the Mediterranean in relation to MSFD descriptors details and this is the most obvious in the case of biodiversity descriptors. Moreover, the different nature of the biodiversity descriptors presents a wide heterogeneity in the level of detail of the information made available, the appropriate methodologies, and the kind of outcomes expected. Descriptors 1, 4 and 6 are considered as ‘condition’ Descriptors, influenced by other Descriptors, which focus on pressures and impacts. Descriptors such as D5 (eutrophication), D7 (hydrographical conditions), D8 (contaminants), D9 (contaminants in seafood), D10 (litter) and D11 (energy) may be seen as determining the ‘environmental niche’ space within which biodiversity is realized or even these descriptors may cause pressure or having an impact on the biodiversity elements. Moreover, alien species (D2), and mainly invasive alien species (IAS), constitute one of the major menaces to biodiversity worldwide and specially in the Mediterranean sea. In the latter, according to the most recent available inventory (Zenetos et al., 2012), 986 alien species have been recorded until 2012, and the main pathways of introduction recognised were through the Suez Canal (54%), followed by shipping and aquacultures.

The D1 (Biodiversity) is the broadest descriptor, directly connected with D4 (food webs) and D6 (seafloor integrity), describing respectively the set of interactions relating to populations and species and to habitat dimensions allowing species occurrence and realization of species interactions all the way up to the formation of communities and ultimately their functioning and

resilience. The Joint Research Centre (JRC) produced an in-depth assessment (IDA) of various aspects of the MS reporting for the Articles 8, 9 and 10 of the MSFD (Palialexis *et al.*, 2014), where MS reports presented a high heterogeneity in the number and type of methodological approaches and in GES definition even between neighbouring MSs. Targets and indicators for biodiversity are generally less well-developed and the set of existing common indicators is limited and insufficient to cover the requirements of the Directive.

In many cases Member States have not systematically been built on existing EU legislation and RSC standards. In the Mediterranean the UNEP/MAPs EcAp (Ecological Approach) process has agreed on indicators to follow the MSFD COM Decision, but these are not yet operational.

Therefore, there is a need for further development of biodiversity indicators, establishment of a baseline for GES, together with a coordinated assessment and monitoring framework for the Mediterranean biodiversity. The close affiliation of “Biodiversity theme” (D1, D4 and D6) with the Descriptor 7 (Hydrographical conditions) will also need to be taken into account due to the links between them, since many indicators and targets for the Descriptors D1, D4 and D6 may be relevant in relation to Descriptor 7.

Moreover the results of research projects specifically addressing gaps in knowledge on biodiversity issues relevant to the D1, D4, and D6 descriptors of the MSFD have not always been made of the best use. This Activity will identify inconsistencies in the current MSFD proposals in relation to proposed definitions of GES and establishment of environmental targets and will highlight scientific and technical developments, with an emphasis to biodiversity, which will contribute to clarify issues and overcome problems in MSFD implementation in the Mediterranean.

Therefore the objectives for this first Activity of the ActionMed project are:

- Identify the gaps and needs for which targeted actions should be taken in order to enable a systematic solution of them at the Mediterranean regional level, in relation to articles 8 (IAs), 9 (GES), and 10 (Targets) with a special focus on issues and open questions concerning the biodiversity descriptors and hydrographical conditions (in particular D1, D4, D6 and D7) and building on ongoing regional level (Barcelona Convention, UNEP-MAP monitoring expert groups, so-called CORMONs) and EU level work (especially on work ongoing in the GES and Targets EU Working Group);
- Develop strategies or methodologies for the ongoing assessment of **biodiversity descriptors** and candidate indicators, performing desktops studies and research on existing literature and available data, in order to highlight scientific and technical developments, testing methodologies or developing guidance on how to address the regional gaps in the coming years.

The proposed structure distinguishes between short term (2015/2016), mid-term (2018) and long-term (beyond 2018) actions. Short term actions will be implemented as part of the proposal (as are for example the dedicated workshops), whereas the mid-term and long term actions will be described in the proposals resulting from this but will be implemented in a future by using other funding sources.

In relation with Regional Sea Conventions, Member States’ Competent Authorities and other stakeholders, the Activity 1 will exploit the information from the Initial Assessment (IA art.8) (2012), the GES thresholds (art 9) as set in some cases, as well as the criteria used in IRIS-SES and Environmental Targets (art 10).

The close involvement of UNEP/MAP- Barcelona Convention Secretariat, which is the Regional Sea Convention in the Mediterranean, will ensure that the work undertaken feeds into the regional work, with enabling transferability of outcomes of the component to other regions and linking it closely with the work undertaken by UNEP/MAP in Third countries and as such having potential positive effect in these too.

Through this coordinated action there will be:

- Exchange of knowledge and ideas to facilitate the exchange of approaches between member states in order to improve consistency.
- Building on existing work and key gaps, in order to evaluate the coherence of methods across Member States (MS).
- Building on the existing EcAp process under UNEP/MAP- Barcelona Convention and ensuring through the strong involvement of UNEP/MAP that coordination will take place on regional level also with non-EU countries (non-cost basis) and stakeholders, all over the life of the project;
- Holding back-to-back events with the biodiversity expert groups meetings under the Barcelona Convention (with this ensuring cost-efficiency, as well as non-cost involvement of non-EU countries in the project);
- Set a common frame for “biodiversity theme” indicators, define GES, set targets in order to achieve an operational capacity ensuring to produce comparable results by establishing compatible methodologies in the Mediterranean
- Presenting outcomes in relevant regional level meetings;
- Develop innovative methods (Bio-tool) and possibly link to the relevant e-Infrastructure (e.g. LifeWatch) in order to assist biodiversity data analysis and visualization.
- Recommendations for more efficient, cost effective and meaningful biodiversity monitoring and assessment in the Mediterranean.

Activity 2:

“Gaps, Needs and Actions to implement for national and regional monitoring for MSFD programmes (Article 11)”

Activity leader: IEO (Dr Francisco Alemany)

Participants: HCMR, UoA, UNEP/MAP, CORILA, Univ.Salento, NIB, ISOTECH, UTH

The Directive 2008/56/EC establishing the Marine Strategy Framework Directive stated, in its article 11, that monitoring programmes should be compatible within marine regions or subregions and that Member States sharing a marine region or subregion should, in the interest of coherence and coordination, endeavour to ensure that monitoring methods are consistent across the marine region or subregion so as to facilitate comparability of monitoring results. Moreover, in its Annex 5, the Directive highlight the need to:

- aggregate the information on the basis of marine regions or subregions, in platforms that ensure interoperability of the information with the international aggregators (e.g. OBIS, GBIF)
- ensure comparability of assessment approaches and methods within and between marine regions and/or subregions,
- develop technical specifications and standardised methods for monitoring at Community level, so as to allow comparability of information.

However, the development of the first phase of the MSFD implementation, dealing with the

Initial Assessment of marine ecosystems (Article 8 of the Directive), the determination of Good Environmental Status (GES - article 9) and on the establishment of environmental targets and associated indicators (Article 10), has shown that the requirements of adequacy, consistency and coherence in Member States' submissions have not been widely accomplished, as recognized in the report from the Commission to the Council and the European Parliament on the first phase of implementation of the MSFD (COM(2014) 97), as well in the In-Depth Assessment of the EU Member States' Submissions for the Marine Strategy Framework Directive under articles 8, 9 and 10 carried out by JRC (Palialexis *et al.*, 2014). Specifically, in the aforementioned Commission report is pointed out that in spite of regional cooperation through the RSCs protecting the EU's marine waters, which is well-developed and that significant commitments were made by all RSCs to implement the ecosystem approach and support MSFD implementation, Member States' use of the results of regional cooperation within their marine strategies varies. This has resulted in a lack of coherence among all the EU countries, even within the same marine region or subregion (required by Article 3(5)b and 5(2) of MSFD). This problem affects all MSs, but is especially worrying in the Mediterranean and the Black Sea, where the coherence has been proved to be lowest. In such JRC report (Palialexis *et al.*, 2014) it was considered that a window of opportunity should be open to improve this situation ahead of the development of Monitoring Programmes and Programmes of Measures planned for 2014 and 2015, respectively, stressing that these will deliver better results at lower cost if they are coordinated or developed jointly across Member States. Unfortunately, the recent experience related to the elaboration of national MSFD monitoring programmes suggest that the lack of regional coherence affecting the first phase of MSFD implementation is occurring again, affecting the current actions towards the design and implementation of monitoring programs. Several actions have been undertaken to solve this lack of coherence, as the elaboration by JRC of the "Technical guidance on monitoring for the Marine Strategy Framework Directive" (Zampoukas *et al.*, 2014) or the coordination meetings held with this aim. In the case of the Mediterranean regions is worth to mention those organized by UNEP in relation to EcAp monitoring implementation, designed to taking into account MSFD requirements. However, the outputs of such actions have not been fully considered for the design of national MSFD monitoring proposals, which have been carried out independently by each MSs, without any formal coordination and hence, once the definitive versions after public consultancy periods be submitted to the Commission, they will probably show the same heterogeneity than the previous MSs submissions corresponding to the first phase of MSFD implementation. Because of that is important to start as soon as possible specific actions to ensure the convergence of national MSFD monitoring programmes in the Mediterranean region, and hence their coherence.

In this line, the strategic objective of this Activity is to set the basis for a coherent design and implementation of MSFD related monitoring programs in the Mediterranean region, focusing on biodiversity descriptors (1, 4, 6) and oceanographic monitoring (7).

The immediate objective is to provide the administrations in charge of MSFD implementation in the Mediterranean with information useful for revising, whenever necessary, the initial MSFD monitoring programmes proposals in order to:

- ensure their regional coherence
- guarantee their adequacy for GES evaluation, in relation to biodiversity descriptions at lower cost
- achieve their maximum integration with EcAp monitoring plans.

To achieve these objectives two main tasks are envisaged:

- one dealing with the analysis of the adequacy and coherence of the MSFD monitoring plans focusing on biodiversity descriptors and hydrographic monitoring (D1, 4, 6 and 7), submitted by Mediterranean MSs to the Commission, following the calendar established for the MSFD implementation (2014) and

- the second including two pilot monitoring actions, directed to explore the possibilities of integration and extension of existing hydrographic monitoring programs to address a variety of MSFD descriptors at marine demarcation spatial scale and to the development of biodiversity indicators adequate for anthropogenic impact evaluation, respectively.

These Activity 2 tasks are complementary and synergic in respect to those that will be carried out under Activity 1. The latter will be focused on identifying the gaps and needs current methods, strategies, assessment in the Mediterranean, focusing on biodiversity and hydrological scenario descriptors developing subsequently strategies or methodologies to fill these gaps and improving methodologies for the ongoing assessment of biodiversity descriptors and candidate indicators. In addition, the first task under Activity 2 will analyse how national MSFD monitoring programs proposals address the detected gaps and needs, and the second task, the pilot actions, contribute to the improvement and optimization of sampling methodologies and development and selection of adequate indicators. Thus, all these tasks will be carried out in close coordination with those of Activity 1, thus ensuring this coordination through the direct participation of members of each working team in the tasks realized within both activities.

Activity 3:

“Assistance in the preparation of programme of measures, by addressing particular gaps identified both at national and regional level, linking together work on Programmes of Measures (PoM) under the MSFD and under the auspices of UNEP/MAP-Barcelona Convention (the PoM Activity)”

Activity leader: UNEP/MAP (Ms Tatiana Hema)

Participants: HCMR, IEO, CORILA, NIB, ISOTECH, UoA

The main aim of Activity 3 is to assist EU Member States in the Mediterranean region in their work on programme of measures, by addressing particular gaps identified both at national and regional level, in a coordinated manner, both in line with the EU MSFD and the Barcelona Convention’s Ecosystem Approach process (the **EcAp process**, in line with Decision IG 21/3).

This objective builds on the recommendations of:

- the Report from the Commission to the Council and the European Parliament on the first phase of implementation of the Marine Strategy Framework Directive (2008/56/EC);
- the European Commission's assessment and guidance (the **EC MSFD Report**);
- specifically it aims to address the lack of consistency and coherence in the regional level between the Mediterranean EU countries.

Furthermore, this activity also aims to link actions under this project with the implementation of the Barcelona convention and its Protocols including in particular the ongoing regional EcAp process and ensuring as appropriate relevant similar parallel work/transfer of best practices also to Third Countries (on non-cost basis for latter).

Cost efficiency will be maximised by using already foreseen meetings and workshops (related to MSFD, EcAp work on Measures as well as the coordinated work on the update of the National Action Plans under the LBS Protocol of the Barcelona Convention and its interaction with related work for Descriptors 5, 8, 9, and 10 of the EU MSFD) also to get wider input into the activity’s outputs, both in relation to national and regional level. An additional Workshop is foreseen to link together these two works-streams, which will be held back-to back the EcAp

Coordination Group Meeting, which in line with Decision IG 21/3, is the main governance body for the EcAp process. Through this it will be also ensured that the outcomes of Activity 3 will be integrated to the regional process.

The Activity will first address potential gaps in relation to measures. This task will be undertaken based on already existing gap analyses, both in EU and regional level, in line with the EC MSFD Report, related assessments of the EC and ongoing work in the EU MSFD related expert groups, as well as with the Initial EcAp Measures Gap Analysis of UNEP/MAP and ongoing national work (both ongoing work on the PoM under MSFD and on the National Action Plans, so called NAPs under EcAp), with a focus on common identified gaps.

During the activity specific attention will be given to avoid that any shortcoming may affect negatively the definition and implementation of the programme of action.

At **regional level**, the aim is to build on the above analyses, to identify common gaps, challenges and based on this, develop a Regional PoM Policy Analysis (the **Regional PoM Analysis**), which will identify potential regional responses in line with the Article 13 of the MSFD and relevant provisions of the EC MSFD Report, as well as the Initial Measures Gap Analysis under the EcAp process with a focus on regionally common gaps (specific responses such as strengthened, coordinated implementation of existing measures or development of new regional measures).

This Regional PoM Analysis will be discussed in already foreseen regional meetings, with all Contracting Parties, i.e. with the inclusion of third countries (non-cost basis) and stakeholders as well.

These regional meetings, which are tables under the regular regional process will dedicate specific time to follow-up on the recommendations of the Regional PoM Analysis and will identify 2-4 key potential regional responses, which will be seen as priority areas for common regional action.

The socio-economic assessment will be carried out focusing on these priority areas and the outcomes of this analysis, together with the Regional PoM Analysis (which will be updated in line with comments received by Contracting Parties) at the **PoM Workshop**, which will be held back-to-back with the EcAp Coordination Group Meeting.

The PoM Workshop is going to give specific recommendations and will adopt a **Medium and Long-term Regional PoM Action Plan**, which will be presented (with the aim of endorsement and as such inclusion to further regional work) at the EcAp Coordination Group Meeting.

The outcomes of the EcAp Coordination Group Meeting will be further addressed in the regular regional process (and will lead to decisions at the 19th Meeting of the Contracting Parties, to be held early 2016).

At **national level**, the activity aims to review the countries proposals and undertake a country-specific assistance in some Mediterranean EU (in minimum 3, maximum 4-Member States), to ensure that the elaboration of their PoMs under the MSFD and the NAPs under the Barcelona Convention will be done in the most coordinated manner, building on each other and in between best practices of the countries.

The country-specific expert level assistance will be coupled with already foreseen national meetings, workshops, stakeholder meetings (already foreseen by countries in MSFD implementation and in NAP updates in line with EU rules on public participation and with the UNEP/MAP Guidelines for Updating National Action Plans for the Implementation of the LBS Protocol and its Regional Plans in the Framework of the SAP-MED to Achieve Good Environmental Status for Pollution-Related ECAP Ecological Objectives (UNEP(DEPI)/MED WG. 393/10). It is important to note that these meetings will be held on a non-cost basis to this project, as they have been already foreseen under the MSFD and NAP update EU/regional process and the activity instead of creating parallel discussions, feeds into these already existing

ones, also using outcomes of other ongoing EU projects, such as in IRIS-SES project the DECyDe-4-IRIS methodology.

The results from these workshops/meetings (2-3 foreseen by country), coupled with the above desk studies will form a country-specific **Action Plan on implementing the PoMs and the NAPs by integrating regional and EU MSFD requirements in a coordinated manner.**

This Action Plan will be presented both during the already foreseen national workshops, stakeholder meetings, as well as under the planned regional meetings under the Barcelona Convention to ensure exchange of best practices and regional coherence. In addition, they will be discussed in details, together with the Regional PoM Analysis at the PoM Workshop.

The PoM Workshop will furthermore discuss an **MSFD-EcAp National Medium and Long-term Action Plan**, addressing key challenges and actions needed to ensure coherent implementation of EU (MSFD) and RSC (EcAp process) policies in relation to PoM.

Stakeholders will have the opportunity to comment and suggest on all these outcomes, both at national level (already foreseen national public participation process), and regional level (PoM Workshop and regional meetings).

The outcomes of the national level activities will be also presented at the EcAp Coordination Group and with this it will be ensured that they will be integrated in the regional process.

Activity 4:

“The information Management System for Knowledge and Data Update”

Activity leader: CORILA (Dr Pierpaolo Campostrini)

Participants: HCMR, OGS, CNR-ISMAR, UoA, U.Salento, UNEP/MAP, IEO, CORILA, NIB, MARIS (subcontractor of CORILA).

Objectives:

- To support the establishment of an information management system for relevant knowledge and data, to be used by MS, EU, EEA, RSCs (in particular UNEP-MAP for the Mediterranean) and other interested users
- To test and prototype on-line products solutions for regular updating of data and information, including interoperability solutions with other systems
- To ensure that any action proposed is compatible with relevant EU standards and initiatives for MSFD reporting to EC, EEA via WISE marine, such as INSPIRE Directive and EMODnet and UNEP/MAP EcAp
- To tune with the EMODnet MEDSEA checkpoint developments

Overall concept:

The aim of the EU Marine Strategy Framework Directive (MSFD) is to protect more effectively the marine environment across Europe and requires from member states to achieve GES in Europe's seas by 2020. GES is determined through a set of 11 qualitative descriptors for all the important aspects of the marine ecosystem and all the main human pressures on them. The Directive sets a number of reporting requirements of the Member States to the European Commission (EC), including the state of the marine environment, associated pressures and impacts, activities and uses of the marine environment, monitoring programmes and targets and measures to achieve GES.

The MSFD sets out a regional approach to the management of the Europe's seas that requires MSs to cooperate with their neighbouring countries when developing and implementing their marine strategies. This means that for the successful implementation of the Directive, multidisciplinary data originated from different sources and collected under different legislations and policies have to be combined together in a meaningful, coherent and consistent way in order to get an improved understanding of the complex marine environment.

Over the last decades several data bases and information systems have been set up to manage the wide range of measurements and variables that are collected within the framework of National, Regional and European activities using different standards and best practices for observations acquisition, analytical methodologies, quality control procedures, format for metadata discovery and data exchange, data products, indicators definition, descriptors assessment, etc. There are already a number of data flow schemes which have been established between the Member States, RSCs and EU/European Environment Agency (EEA) to facilitate the data flow from the observational level to the end applications and users in support of National, Regional and European Policies. Interoperability among these diverse data systems is crucial in order to achieve cross-domain optimal analysis, processing, integration, and final environmental status assessments. To reach optimal interoperability, the prescriptions and rules defined by the INSPIRE Directive have to be followed, with regards to standard services to discover, view and access the data and especially considering the guidelines on interoperability of spatial data sets and services (Data Specifications) for the INSPIRE Themes more related to the MSFD domain.

The initial assessment reports prepared by the Member States under article 8 show that data gaps are present. This is inevitable, but there are issues that have to be considered to improve the knowledge on marine system. The European Commission's assessment already highlight these clearly:

- Only a few Member States put forward a strategy on how to close the existing data gaps before the next reporting cycle
- The results of research projects specifically addressing gaps in knowledge on marine issues relevant to the 11 descriptors of the MSFD have not always been made best use of
- Member States did not use the initial assessment to establish a baseline

Based on the initial assessment reports, European Commission provides guidance in the form of recommendations to be implemented at the EU, regional and national levels on how to address the challenges identified, making the process of further implementation less costly and more efficient. Among others it recommends to implement a modern and effective data and information sharing system between the EU (EEA) and RSCs ("WISE-Marine"), taking full advantage of the on-going developments to improve accessibility and interoperability of marine data through the "Marine Knowledge 2020" initiative.

The work under the Activity 4 will be coordinated with objectives, actions and tasks developed in the previous Activities of the ActionMed proposal, both in terms of content and in terms of timelines. Also IRIS-SES and ActionMed data bases will be integrated in the information system to be proposed in this activity.

Output from WG DIKE will be considered, as well as the development of Regional Management systems to accommodate data (such as e.g. the German Fact Sheet approach), while keeping EMODnet in a central position, avoiding duplication of efforts and considering the role of UNEP/MAP as contributor and/or beneficial of the system (UNEP/MAP Medpol has a database / system covering eutrophication and contaminants but is not complete. Regarding other descriptors there are some data management in place as well in the RACs but it require further development). Moreover, the outcomes of other on-going EU supporting activities related to the development of a shared data and information system between the EU and the RSCs will be used in order to maximize the best results of this work.

UNEP MAP will benefit from Activity 4 to strengthen its own data management / data base with regards to ecosystem approach indicators with the view to define potential elements of user requirements of a such info database management system taking into account SEIS principles and building on existing info and database management systems within and outside MAP.

Activity 5: “Coordination, Implementation and Dissemination”

Activity leader: *HCMR-Greece, Dr Kalliopi Pagou*

Participants: *HCMR, Univ.Salento, IEO, UNEP/MAP, CORILA*

Activity 5 focuses on the monitoring, management and coordination of the project. It will provide effective and comprehensive management of the consortium, coordination and integration within and among the Activities, and communication between partners. The coordinator, the project manager, the Steering Committee and the management office will oversee the timely and high quality of the projects deliverables and reports and their effective dissemination to scientists, policy makers, and national authorities. Activity 5 will target the active participation of stakeholders to the project in order to ensure that the products of ActionMed have the maximum impact and usage on the next phases of the implementation of the MSFD and EcAp across the Mediterranean on short, medium and long term basis. Details are described under parts (d) *Project management and implementation contracts*, (e) *Arrangements for monitoring/supervision of the operation and any risks involved in its implementation*, (f) *Sustainability of the project’s achievements*, (h) *expected impact of the proposed activities on target groups - relevant stakeholders, key national and regional organisations, such as Regional Sea Conventions and national policy leads for MSFD and how they involved in your activities/organization in your activities/organisation*, (i) *strategy for increasing synergies and avoiding overlaps with major relevant international projects and activities*.

The overall co-ordination and management of the project is the responsibility of HCMR.

Objectives are to:

- Coordinate Activities & Facilitate communication between partners within and across Activities
- Manage and monitor the progress of the project ensuring that the project meets its objectives within the time (and budget) limits
- Link ActionMed to other international and national projects
- Link ActionMed to stakeholders – national authorities and policy leads for MSFD
- Communicate and outreach Project results and scientific developments on all levels of society: policy, public as well as scientific community

b) Methodology to be followed:

Applicants should explain the methodology, both theoretical and practical, that will be followed in order to meet the general and specific objectives of the action described above. Applicants should also explain how they intend to distribute the tasks among themselves. This might include support to third parties.

ActionMed Methodology

Activity 1:

“Systematic solutions of current gaps and needs in relation to articles 8, 9, 10 of the MSFD. Focus on biodiversity”

Activity leader: HCMR & University of Salento (Dr Sofia Reizopoulou, Prof. Alberto Basset)

Participants: UoA, NIB, CNR-ISMAR, UNEP, UTH, IEO, CORILA

Activity 1 aims to identify the gaps of knowledge and needs in relation to the Initial Assessments, definition of GES, and set the targets with a special focus on biodiversity descriptors and hydrographical conditions (in particular D1, D4, D6 and D7), for which targeted actions should be taken, in order to enable a systematic solution of them at regional level in the Mediterranean. The activity will build on the regional level through the involvement of Barcelona Convention, UNEP-MAP monitoring expert groups (so-called CORMONs) and EU level work (especially on work ongoing in the GES and Targets EU Working Group).

In relation with Barcelona Convention, Member States' Competent Authorities, other stakeholders and European projects, Activity 1 will exploit the information from the Initial Assessment, the GES thresholds, as well as the criteria used in Environmental Targets aiming to set a common frame for “biodiversity theme” indicators, define the GES, and set targets, in order to achieve an operational capacity and establish compatible methodologies in the Mediterranean.

The Activity 1 will develop short term (2015/2016), mid-term (2018) and long-term (beyond 2018) actions on how to address the regional gaps in the coming years. The short term actions will be implemented as part of the proposal (i.e. back to back workshops). The mid-term and long-term actions or future proposal resulting from this project will be implemented by other initiatives and funding sources.

Activity 1 will provide recommendations for more efficient, cost effective and meaningful biodiversity monitoring and assessment in the Mediterranean. The close involvement of UNEP/MAP- Barcelona Convention Secretariat will ensure that the work undertaken feeds into the regional work, enabling the transferability of outcomes to other regions and in Third countries and as such having potential positive effect in these too.

Finally this activity will develop and propose innovative methods (Bio-tool) to assist and visualise biodiversity descriptors/indicators through GIS applications.

Task 1.1: “Gaps and needs in relation to Initial Assessments, GES and Targets in Mediterranean”

Task 1.1 leader: HCMR

Participants: Univ of Salento, CORILA, CNR-ISMAR, IEO, UNEP/MAP, UoA, UTH, NIB

Member States (MSs) reports present a high heterogeneity in the number and type of methodological approaches and in GES definition, whereas targets and indicators for biodiversity are less well-developed and the set of existing common indicators is limited and insufficient to cover the requirements of the MSFD (JRC; Palialexis *et al.*, 2014). The EcAp process of UNEP follows the MSFD COM Decision, but it is still not yet operational, therefore, it is necessary to develop further biodiversity indicators, together with a coordinated assessment and monitoring framework for the biodiversity in the Mediterranean Sea.

Subtask 1.1.1: General overview of MSFD

Participants: UoA (lead), UTH, Univ of Salento, HCMR, IEO, NIB, UNEP/MAP, CORILA, CNR-ISMAR

This subtask involves a review on MS reporting for Articles 8, 9 and 10 of the MSFD for the Mediterranean ecoregion. The subtask will screen and estimate the heterogeneity of the MS

methodological approaches and standards, and investigate the commonalities and differences between MS, including the work undertaken under the auspices of UNEP/MAP Barcelona Convention.

Subtask 1.1.2: Identify needs and gaps with emphasis on Biodiversity (Descriptors 1,4,6,7)

Participants: Univ of Salento (lead), HCMR, IEO, UNEP/MAP, NIB, UoA, CORILA, CNR-ISMAR

This subtask will analyse and compare biodiversity indicators used by Member States in their Initial Assessments (IAs), their coherence with the common indicators in the context of UNEP/MAP-Barcelona Convention and in EU research projects, in order to provide a catalogue of biodiversity indicators / indices, the scientific considerations and documentation for defining GES, and where possible, targets for the Mediterranean ecoregion.

This subtask will involve a review on how MSs deal with biodiversity indicators in their IAs, identifying the commonalities and differences between nationally selected indicators. An analysis and comparison of the number and type of methodological approaches, GES criteria, biodiversity indicators and targets, proposed thresholds and limits when existing, used by Member States and UNEP/MAP approaches will be performed. The level of integration between the MSFD implementation and other legislation (i.e. Water Framework Directive, Habitat Directive etc.) assessment requirements and methodological standards will be identified. Other important information sources with respect to biodiversity descriptors/indicators, GES, and targets, such as EU research projects (i.e. PERSEUS, DEVOTES, EMBOS etc.) will be considered. The subtask will also draw from best practices of biodiversity tools of other regional approaches (i.e. OSPAR biodiversity assessment, HELCOM Biodiversity Assessment Tool (BEAT); MARMONI Marine Biodiversity Assessment Tool etc).

A final electronic catalogue including the sources of information, listing the biodiversity descriptors/indicators and the methodological standards adopted across Mediterranean countries will be developed, in order to provide the basis to the following subtasks. This will be linked to Activity 4 work.

Subtask 1.1.3: Applicability of D1, D4, D6, D7 indicators to case studies in the Mediterranean

Participants: Univ of Salento (lead), HCMR, IEO, UNEP/MAP, NIB, UoA

This sub-task will use the information gathered in subtasks 1.1.1 and 1.1.2, to build study cases in the biodiversity databases of marine LifeWatch Virtual Research Environments (VREs), which will be made available as in kind contributions by LifeWatch-ITALY and LifeWatch-GREECE, in order to develop experimental tests of uncertainty associated to biodiversity indicators currently used by MSs or scientific networks.

The subtask will build on the existing work, on ongoing work carried out by other EU Networks (such as the EMBOS (COST Action) and EU BON (FP7 project)), key gaps, and challenges identified for biodiversity scales assessment in the project IRIS-SES. The subtask will test biodiversity state indicators using ecosystem characteristics and taking into account the pressures on those states (i.e. hydrological features) and propose environmental targets. A dedicated workshop is planned for this activity.

Subtask 1.1.4 : Development of intelligent tools for biodiversity indicators

Participants: HCMR, IEO

The complexity of biodiversity demands for the development of new tools that will assist existing data analysis and visualization. GIS platforms offer a wide range of data management and analysis routines, whereas provide extensive programming capabilities, thus allowing the development of powerful new software routines easily operated by non-expert users. In the framework of IRIS-SES programme, a set of intelligent tools have been developed to support D3, D5, D8 and D9 analysis and have been disseminated among Mediterranean and Black Sea partners from EU Member States for evaluation and improvements. Capitalizing on that

background we plan to build a new toolbox dedicated to D1. The BioTool based on achievements of other projects (e.g. ViBRANT (e-Infrastructures, FP7), BioVel (e-Infrastructures, FP7) and LifeWatch (ESFRI, Greek and Italian nodes) will be designed and developed within the first 12 months of ActionMed and will be shared with other members of the consortium for comments. BioTool will be promoted in local and regional workshops to receive the feedback from stakeholders and managers thus acquiring the necessary input to achieve user-friendly working environment and ease of use.

BioTool and previously engineered intelligent MSFD tools (as in IRIS-SES project) will be made available in a Web-GIS platform at the HCMR dedicated servers with open access to ActionMed and to the general public after the end of the project. All the development will be based on the principles of open source and open data and the steps will be published in international peer-reviewed journals.

Task 1.2 : “Action plans”

Task 1.2 leader: Univ of Salento

Participants: HCMR, IEO, UoA, UTH, UNEP/MAP, NIB

This task aims to the development of best practices for the coordination of action plans at regional / subregional level.

The objective of the task is to enhance commonalities, tending to a common set of biodiversity indicators (both existing and new) and identifying the theoretical framework and existing evidences for defining GES baselines on regional/sub regional level in the Mediterranean.

Within this task the following actions will be performed:

1. Designing and developing short term actions plans
2. Implementing the short term actions plans
3. Developing relevant recommendations for mid term and long term action plans
4. Engaging relevant stakeholders at a national and/or regional level
5. UNEP/MAP-Barcelona Convention, in light of the ongoing regional work on biodiversity will develop plans of the long-term monitoring action plan for a common set of biodiversity descriptors/indicators

For the realization of the above the following subtasks are proposed.

Subtask 1.2.1: Short term action plans

Participants: HCMR (lead), Univ of Salento, UTH, UNEP/MAP, IEO, NIB, UoA

Organisation of a workshop of Biodiversity experts on biodiversity indicators, adoption of existing protocols for gaps identified, proposals for characteristics of GES in the Mediterranean Sea and setting targets where possible. The Workshop will identify the theoretical framework and existing evidences for defining GES baselines on regional/sub regional level. The workshop will be organized into discussion areas and working tables where data elaboration is going to be performed in order to support proposal for defining GES baselines with quantitative analysis. The aim of the workshop is to produce proposals and recommendations for establishing a baseline for GES.

Subtask 1.2.2: Mid term action plans

Participants: Univ of Salento (lead), HCMR, UNEP, IEO, NIB, UNEP

The subtask is based on the outcomes of subtask 1.2.1 and will provide recommendations for key biodiversity components of the marine ecosystems, their assessment scales, methodologies used for assessment, and will address gaps and methodological procedures that need to be addressed

in the coming years. The assessment scales will adequately reflect both the ecological scales of the biodiversity components in each subregion and the link to areas which are effective for management measures (i.e. Marine Protected Areas, data input from the EMODnet MedSea Check Point).

A manual for strategies for the ongoing assessment of biodiversity indicators will be recommended. The recommendations will be considered by UNEP/MAP in the long-term action plan.

Subtask 1.2.3: Long term action plans

Participants: UNEP/MAP (lead), HCMR, Univ Salento

Develop a long-term action plan for biodiversity monitoring gaps, which is fully in line both with the EU MSFD timeline and with the regional timeline (EcAp Roadmap), ensuring that the outcomes and recommendations of the short and medium term action plan can be integrated into the regional work.

The aim is to build this long-term action plan on the short-term deliveries and mid-term action plan's recommendations, to ensure the sustainability of the outcomes through their integration into the regional implementation of biodiversity monitoring, fully in line with the EU MSFD.

The Long-term Action Plan would be undertaken in between months 6-10 of the project and will build not only on the outcomes of the project, but also on ongoing expert level and policy discussions under the auspices of the EU MSFD and UNEP-MAP/Barcelona Convention.

In particular, the draft Long-term Action Plan will be presented at the EcAp Coordination Group Meeting in September 2015, which is the overall governing body under UNEP/MAP-Barcelona Convention for the EcAp process.

Comments, suggestions received at this meeting will be an important input into the Long-term Action Plan, which aims to be also presented and ideally endorsed at the first 2016 EcAp Coordination Group Meeting (foreseen for early 2016, possibly February-March).

Activity 2:

“Gaps, Needs and Actions to implement for national and regional monitoring for MSFD programmes (Article 11)”

Activity leader: IEO (Dr Francisco Alemany)

Participants: HCMR, UoA, UNEP/MAP, CORILA, Univ.Salento, NIB, ISOTECH, UTH

The aim of Activity 2 is to identify the gaps of knowledge and needs in the MSFD monitoring programmes proposals submitted by the MSs in relation to Article 11 (Monitoring Programmes) implementation, in order to enable their systematic solution at regional level in the Mediterranean. To contribute to the achievement of this goal two main tasks are envisaged, one focused on the analysis of the MSFD national monitoring programmes and the other to the development of pilot actions for the improvement of biodiversity descriptors and integration and optimization of monitoring programmes. All these tasks will be carried out in close coordination with those under Activity 1. Specifically, these tasks will be:

Task 2.1: “Analysis of the MSFD /ECAP monitoring plans, focusing on biodiversity descriptors (1, 4, 6) and oceanographic scenarios (7)”

Task 2.1 leader: IEO

Participants: HCMR, UoA, NIB, U. Salento, UTH, CORILA, UNEP/MAP

Subtask 2.1.1: Compilation of MSFD monitoring programs national proposals and inclusion of relevant information in a georeferenced database (Short term action)

Participants: IEO & HCMR (lead), UoA, U.Salento, NIB, UTH, CORILA, UNEP/MAP

To carry out this task, the database on existing monitoring programmes in Mediterranean countries developed within IRIS-SES project will be used as a reference, in such a way that both data bases will be compatible. Additional fields will be added to the new database for including the national identification codes to establish their links with existing programmes already gathered in the IRIS-SES database. Moreover, the same GIS tools developed within IRIS-SES project will be used for spatial representation and further analysis of this new information. It will allow to combine such information on MSFD monitoring programmes planned for evaluating GES in relation to biodiversity descriptors with available georeferenced information on antropogenic pressures in the Mediterranean Sea. It will be based on the reports delivered by the EU countries to the Commission in relation to Article 11 (due in October 2014), which will include all possible indicators with emphasis and in depth analysis on biodiversity descriptors (1, 4, 6) and oceanographic scenarios (7).

Subtask 2.1.2: Assessment on the integration of MSFD national monitoring proposals with the existing monitoring related to other directives and evaluation how these national plans match with UNEP EcAp monitoring plans. (Short term action)

Participants: HCMR (lead), IEO, U.Salento, CORILLA, UoA, UNEP/MAP

Once finished the database produced within task 2.1.1, the group of experts in charge of this Activity will compare the national monitoring programs assumed and submitted by MSs in relation to MSFD to the already existing biodiversity and hydrographic monitoring programmes in the Mediterranean region, identified within the framework of previous projects (IRIS-SES, STAGES, EU-MED-MSFD, etc), in order to evaluate if each MSs have fully considered all the existing monitoring programmes, potentially useful for the fulfillment of MSFD requirements. Moreover, it will evaluate the degree in which these national MSFD monitoring programmes plans address the EcAp monitoring plans agreed within the framework of Barcelona Convention

Subtask 2.1.3. Analysis of the information included in the database.

Participants: U.Salento (lead) IEO, HCMR, UoA, NIB, CORILA UNEP/MAP

Within this subtask the following actions will be performed:

- Detect remaining monitoring gaps, both regarding spatial and temporal coverage by descriptor
- Carry out a coherence analysis, determining the similarities and dissimilarities in sampling strategies and methodologies, as well among the indicators applied
- Evaluate the adequacy and sufficiency of such monitoring plans to MSFD sampling requirements.

The analysis will include the monitoring proposals for MSFD indicators with emphasis and in depth analysis on biodiversity descriptors (Descriptors 1, 4, 6) and oceanographic scenarios (Descriptor 7). All these short term subtasks will be carried out by a group of experts (emphasis on biodiversity issues) from the different partners involved in the project, in close coordination with the group of experts in charge of the analysis and evaluation of the monitoring efficiency of already existing programs for biodiversity related descriptors and data availability for different types of indicators in the Mediterranean, based on the aforementioned inventory / meta-database of IRIS-SES and the biodiversity database of MedSea Check Point.

Subtask 2.1.4. Elaboration of action plans for overcoming the detected gaps and

inconsistencies, focusing on the coherence among Mediterranean MSs. MSFD and EcAp monitoring plans.

Participants: *UNEP/MAP (lead), IEO, HCMR, U.Salento, UoA, NIB, UTH*

This subtask is focused on the integration of the results of the other subtasks within task 2.1. Thus, the group of experts in biodiversity and hydrographic monitoring, in close coordination with the responsables of Activity 1 and paying special attention to UNEP/MAP plans, will develop action plans for the implementation, in the mid and long term, of adequate, complete, cost-effective, consistent and coherent MSFD monitoring programmes implementation in the Mediterranean, taking into account, besides the data generated within this action, the outputs from IRIS-SES and PERSEUS projects and recommendations from different organisms and institutions (as are: JRC, EU Commission, GFCM and UNEP/MAP reports)

Task 2.2: “Pilot actions”

Task 2.2 leader: *IEO*

Participants:

This task consists of two pilot monitoring actions aiming to explore the possibilities of integration and extension of existing hydrographic monitoring programs to address a variety of MSFD descriptors at marine demarcation spatial scale and to the development of biodiversity indicators adequate for anthropogenic impact evaluation, respectively and thus will be in close collaboration and relevance with the work carried out to Activity 1.

Subtask 2.2.1. Pilot action on the integration of automated continuous monitoring systems (moorings) and offshore plankton pelagic sampling, addressing descriptors 1, 4 and 10 within routine mesoscale hydrographic surveys. (IEO)

Participants: *IEO (lead), NIB*

1st pilot action – CO₂ interchange

The monitoring of the physical parameters (Descriptor 7) is key for interpreting properly the data provided by the rest of monitoring programs to be implemented in relation to the other MSFD descriptors. Considering the scale of hydrographic processes, the coordination among countries is indispensable. Recent advances in hydrodynamic modeling and satellite imagery allowed improving significantly synoptic monitoring over large areas, however “in situ” monitoring is still needed. One of those regular hydrographic monitoring survey is the IEO-RADMED monitoring program (Amengual *et al.*, 2010), carried out in the Western Mediterranean and includes productive areas such as the Alboran Sea, oligotrophic waters as to the north of Cape Palos and around the Balearic Islands, or areas of special interest as those surrounding the Ebro River. Coastal, shelf and deep stations are included. This monitoring program is already conducting many of the evaluations required under the MSFD Descriptors 5 (eutrophication) and 7 (hydrographical conditions) along the Spanish Mediterranean coast. The different aspects of the ecosystem that are regularly sampled under the RADMED program are the physical environment and the chemical composition of the water column that condition the primary production. The CO₂ interchange, one of the most important parameters in the actual context of climate change is sampled continuously using a SUNDANS system, incorporated within the framework of IRIS-SES project. The relations with the next trophic level can be estimated from the zooplankton studies. The higher trophic relations with zooplanktivorous and tertiary consumers are actually not being considered. The heterotrophic bacteria are essential for the decay of the organic matter to close the cycle and are also being sampled regularly. Within IRIS-SES project the complementarity between continuous monitoring systems, as moorings and the more traditional surveys based on seasonal monitoring of a grid of station, in order to complement the temporal gaps between visits to decrease the signal-to-noise ration in “the seasonal and interannual evolution of temperature, salinity, turbidity and

currents on the whole water column” (Table 1, Annex III Directive 2008/56/CE), have been also analyzed.

To complement all this information (data compiled under the IBAMar database, Aparicio *et al.* 2012) it would be necessary to study the transference of organic matter to the benthos and also the CO₂ content of the sediment. The future implementation of this aspect is under study.

Thus, a pilot action in this direction is proposed. Using a mooring that is deployed in one of the RADMED stations in the Ibiza channel two sediment traps should be installed to characterize separately the sediment dynamics (cascading, resuspended matter, etc) and the biogeochemical effects. This mooring is actually included in the CIESM HYDROCHANGES program.

2nd Pilot action - litter

Moreover, the current period of human history has been referred as the Plastic Age. Plastic pollution reaches the most remote areas of the planet, including the surface waters of the open ocean. The models predict that large-scale vortices act as conveyor belts, collecting the floating plastic debris released from the continents and accumulating it into central convergence zones. (Cózar *et al.*, 2014). Therefore, one of the GES descriptors considered within MSFD is precisely Marine Litter (D10), and one of the indicators for this descriptors considered in the Spanish MSFD monitoring program proposals is ‘Trends in the amount, distribution and, where possible, composition of micro-particles (in particular micro-plastics). Unfortunately, despite of their potential impact on marine biota, there are currently no monitoring programs for microparticles within Mediterranean region. However, microplastic particles can and have been monitored in the water column using the continuous plankton recorder (Warner & Hays 1994), and this method could be used to analyse trends in larger microplastic. Sampling protocols of microparticles needs harmonisation. (Piha and Zampoukas, 2011).

In order to fill this gap, a second pilot action is proposed to be implemented within the frame of RADMED monitoring program related to litter. Specifically, a grid of previously selected RADMED coastal and open sea stations will be sampled. Sampling strategies and methodologies and samples analysis will follow the recommendations from JRC Scientific and Policy Reports Report EUR 26113 “A guidance document within the Common Implementation Strategy for the Marine Strategy Framework Directive MSFD Technical Subgroup on Marine Litter, 2013.

Subtask 2.2.2. Pilot study on the development of reliable indicators, parameters and thresholds for GES determination within descriptor 1, based on key protected species monitoring in infralitoral bottoms.

Participants: IEO (lead)

Monitoring key-species within infralitoral bottoms is essential to assess GES within Descriptor 1. Thus, short and medium term actions plans focusing on determining densities and spatial distribution of benthic invertebrate species at certain habitats will help to identify reliable indicators, parameters and thresholds, in order to provide GES at Mediterranean local, regional and basin wide scales. Thus, this proposed pilot action focuses on endemic, catalogued and sessile species, as *Pinna nobilis*. A set of monitoring activities at different locations under a gradient of pressures will be established to envisage the impacts (anchoring, sewage, tourisms, coastal infrastructures, etc) on coastal bioindicator species. As the Mediterranean Sea is facing increasing human pressures in coastal areas, these action plans are of high priority.

Data will integrated from gathering new data, scientific literature, and information from stakeholders. The obtained dataset will encompass an assessment of the reliability of the compiled data based on a set of quality criteria. Available information will be then synthesized in order to establish the state of the art on the study subjects. General trends will be identified in population parameters of these key-species. The results will identify current gaps in scientific knowledge and management measures in relation to the human pressures. Identified gaps will allow setting research priorities, inform management, and harmonize transnational efforts for the preservation and recovery of benthic populations.

Activity 3:

“Assistance in the preparation of programme of measures, by addressing particular gaps identified both at national and regional level, linking together work on Programmes of Measures (PoM) under the MSFD and under the auspices of UNEP/MAP-Barcelona Convention (the PoM Activity)”

Activity leader: UNEP/MAP (Ms Tatiana Hema)

Participants: HCMR, IEO, CORILA, NIB, ISOTECH, UoA

Guiding principles:

Details of the methodology in relation to definition and assessment of measures for this activity are listed in Tables 1-3 under.

Table 3. 1: Categories of measures (adapted from PoM recommendation)

Measures	Measure category	Cost-effectiveness analysis (CEA)	Cost-benefit analysis (CBA)
Article 13(1) & 13(2) <i>Measures relevant for the maintenance and achievement of GES under the MSFD that <u>have been adopted under other policies and implemented</u></i>	EXISTING 1.a	No	No
Article 13(1) & 13(2) <i>Measures relevant for the maintenance and achievement of GES under the MSFD that <u>have been adopted under other policies but that have not yet been implemented or fully implemented</u></i>	EXISTING 1.b	No	No
Art 13(3) <i>Additional measures to achieve GES which build on existing EU legislation and international agreements but go beyond what is already required under these</i>	NEW 2.a	Yes* Case by case	Yes* Case by case
Art 13(3) <i>Additional measures to achieve GES which do not build on existing EU legislation or international agreements, i.e. that are completely new</i>	NEW 2.b	Yes	Yes

Table 2: Modes of action of measures (from PoM recommendation)

N°	Mode of action
1	Technical: an actual action that one can see (and measure) in the field. In principle a wide range of measures have a primarily technical mode of action.
2	Legislative: Adapting or supplementing national environmental law and other national legislation influencing the marine environment to implement environmental targets and to achieve/maintain GES.
3	Economic: such as economic incentives that provide financial motives to stimulate a desired behaviour or discouraging an unwanted behaviour. Financial instruments are often aimed at the uptake of technical measures. For example, a subsidy for beach resorts of 20 Euros for each additional garbage bin they place.
4	Policy driven: Policy instruments can be economic incentives, but also other instruments, such as voluntary agreements with stakeholders, communication strategies, awareness raising, and education. For example, the government launches an information campaign to make the beach resorts aware of the new subsidy they can get for placing more garbage bins, or beach resorts informing their customers where the litter bins are located, or teachers telling children it is fun to collect waste and put it in a litter bin and gives you a clean beach as well.

Table 3: Typology of MFSD measures (from MSFD Annex VI); measures need to address the typology, but reporting of PoMs is not structured using this typology.

N°	Description of measure
1	Input controls: management measures that influence the amount of a human activity that is permitted.
2	Output controls: management measures that influence the degree of perturbation of an ecosystem component that is permitted.
3	Spatial and temporal distribution controls: management measures that influence where and when an activity is allowed to occur.
4	Management coordination measures: tools to ensure that management is coordinated.
5	Measures to improve the traceability , where feasible, of marine pollution
6	Economic incentives: management measures which make it in the economic interest of those using the marine ecosystems to act in ways which help to achieve the good environmental status objective.
7	Mitigation and remediation tools: management tools which guide human activities to restore damaged components of marine ecosystems.
8	Communication, stakeholder involvement and raising public awareness.

Additional Guiding principles:

A common procedure will be implemented to elaborate PoMs addressing these gaps both at national and regional level in full coherence with the work under the Common Implementation Strategy (Programmes of measures under MSFD, Towards recommendations for establishment / implementation and related reporting).

The work both on national and regional level aims to follow a common procedure including socioeconomic impacts assessment of the potential new measures on regional and cost-benefit assessment of the update of the National Action Plans on the national level.

Furthermore, the principles of the **EU MSFD** and other relevant EU legislation, as well as of the Barcelona Convention and its Protocols, decisions of the Contracting Parties, will be followed. In

particular, those measures should be devised on the basis of the precautionary principle, polluter pay principle, and the principles that preventive action should be taken, that environmental damage should, as a priority, be rectified at source.

Definition of measures under this activity follows the measures definition of the Initial Measures Gap Analysis of UNEP/MAP (which is also in line with the EU MSFD):

“...measures cover management measures undertaken on a common regional basis and where appropriate, with specific time limits for completion, with the overall aim of achieving the good environmental status of the Mediterranean coast and sea”.

Spatial scope

Aim is to build concrete demonstrators of PoMs at two scales:

- National level, support some selected Mediterranean EU countries in the elaboration of their PoM under the MSFD, ensuring also to better articulate their PoMs with the UNEP/MAP related to the implementation of the LBS Protocol of the Barcelona Convention in line with the MSFD (namely the National Action Plans update to achieve GES on a common basis).
- Regional level, analyse possible policy responses (potential new measures) in light of the EcAp Measures Gap Analysis and analyse the socio-economic impacts of some key selected possible new measures (selection will be based on the recommendations of the Contracting Parties on the policy analysis on potential new measures).

Note: the selection of the “pilot” Member states to undertake the national level activities of this action will be based on country interest provided to participate in this activity from the project partner countries and beyond. In case EU MSs, who are not partners in the project, but have strong needs and interest to participate in the national PoM activity, they will be also considered for this activity.

Stakeholder involvement

Stakeholder involvement in the process: each step of the common procedure implies stakeholder consultations.

In relation to national gaps, there are already existing national public participation mechanisms, which will be used.

In relation to addressing regional gaps, the UN public participation and stakeholder involvement rules will apply, noting that there is strong stakeholder involvement in the Barcelona Convention.

A stakeholder workshop is foreseen under this task to be held back-to-back with the EcAp Coordination Group under the Barcelona Convention, foreseen in September 2015.

Common procedure for the elaboration of PoMs

The work will be structured in the following tasks:

Task 3.1: “Assess common gaps in national and regional measures and select issues requiring action to achieve or maintain GES”

Task 3.1 leader: UNEP/MAP in close cooperation with Plan Bleu

Participants: ISOTECH, HCMR, IEO, CORILA, UoA, NIB

For a given area, gaps are assessed by difference between the GES expressed by indicators and target values and the current situation, normally established by the Initial Assessment.

Aim here, both on regional and national level, building on existing work and data, both on

regional and EU level, to synthesize the situation for each gap and clarify environmental goal. As far as possible pressures and associated drivers that are associated to this gap will be identified.

In order to achieve this, a structured approach is incorporated for engaging relevant stakeholders at a national and/or regional level in a cost-effective basis, using already existing channels (see point above).

In addition, it will be ensured that work will build on already existing analyses undertaken both under MSFD at EU level and under the EcAp process at regional level, together with decision tools developed by various EU projects, such as the one for IRIS_SES (DeCyDe-4-IRIS monitoring proposals), for ARCADIS MED project and for PERSEUS (Adaptive Marine Policy Toolbox), which can be useful for PoMs development.

In line with Article 13 of MSFD, a special attention will be put during the regional component of the action on spatial protection at EU/regional level, to ensure coherence with MPA networks that adequately cover the diversity of species and habitats and ecosystems (taking note that in order to establish representative and ecological coherent networks the MPAs should adequately cover the diversity of the constituent ecosystems together with the existing MPAs designated under the Natura 2000, the Regional Sea Conventions or under national initiatives). Within this framework the Activity 3 will collect the available information and identify the gaps for the regional Marine Protected Areas (MPAs) network planning process in the Mediterranean as part of the regional gap analysis (See further under). This will be accomplished in close collaboration with the challenge on Marine Protected Areas of the EMODNet MedSea CheckPoint.

Building on the above, the activity will have as the methodological starting point to be used, that to reach GES and related environmental targets, measures have to be identified in order to address human activities which have an impact on the marine environment and to enhance or maintain the status of the marine environment. Such measures may exist or if necessary, supplemented with new measures, PoM including both.

Regarding existing measures, there is a need to analyse their contribution to the achievement of each target. Existing relevant measures can be categorised as:

- Measures that have been adopted and implemented (*subtask 3.2.1*);
- Measures that have been adopted under other policies, but have not yet been implemented or fully implemented (*subtask 3.2.2*)

Where possible the measures reported by the member states under the MSFD (due in 2015) will also be taken into account if they are reported within the time frame of the project

This distinction will facilitate integration of existing measures in the programmes and how to enhance them in order to improve their contribution to the achievement of GES.

Regarding new measures, generate possible and technically feasible measures enabling to bridge the gaps identified above (*subtask 3.2.3*).

In light of the above, the following sub-tasks will be carried out, under task 1:

Subtask 3.1.1 Common gap analysis at Regional level (lead UNEP/MAP):

- Desk study on existing analysis under MSFD/EcAp, relevant EU projects on regional gaps related to measures;
- Desk study on identifying key common regional gaps;
- Consultation with Contracting Parties, Stakeholders on identified gaps

Subtask 3.1.2 Common gap analysis at National level (lead UNEP/MAP):

- Desk study on existing analysis under MSFD/EcAp, relevant EU projects on gaps ;
- Desk study on identifying national gaps both relevant for MSFD and Barcelona

Convention;

- Consultation with Contracting Parties, Stakeholders on identified gaps

Task 3.2. “Elaborate possible measures”

Task 3.2 leader: UNEP/MAP lead in close cooperation with Plan Bleu and ISOTECH

Participants: HCMR, IEO, NIB, CORILA

This task is build in two sections, following up on regional and national work, with the following sub-tasks:

Subtask 3.2.1. Elaboration of possible measures at Regional level (lead UNEP/MAP):

- Regional PoM Analysis (desk study) on potential new measures on regional level, addressing common regional gaps (may include, based on outcomes of Task 1, need of strengthened possibly joint implementation between countries, or the strengthening/development of new region-wide measures);
- Consultation with Contracting Parties, Stakeholders on Regional PoM Analysis (in regional meetings and in PoM Workshop)

Subtask 3.2.2. Elaboration of possible measures at National level (lead UNEP/MAP):

- Desk study on the need of potential new measures, relevant both for national implementation of MSFD and Barcelona Convention (based on common needs of MSFD and EcAp);
- Consultation with Contracting Parties, Stakeholders on National PoM Analysis (in already foreseen national meetings and in PoM Workshop)
- In addition, a toolbox based on the DeCyDe-4-IRIS method (which was developed by the IRIS-SES project) will be developed and specific National Workshops for identification of gaps and needs in implementing measures for MSFD will be carried out. Five (5) National Workshops (Cyprus, Greece, Slovenia, Italy and Spain) in month 4 have been planned with the participation of the country national MSFD authorities. Best practices evaluation exercise will be used as a tool to enhance active participation and involvement of key actors and stakeholders. Best Practices will be “evaluated” by stakeholders, during the first national meeting, according to specific criteria in dedicated national workshops, by implementing the DeCyDe-4 method of decision support and including capacity building and skills development. Through this evaluation process, stakeholders will become familiar with existing best practices and possibilities. The outcomes of these two steps will form the action plans and the proposals for each participant country, which will be discussed and finalized during the second national workshops (month 12).

Task 3.3: “Socio-economic/cost-efficiency analysis in elaboration of the PoMs”

Task 3.3 leader: Plan Bleu lead in close cooperation with UNEP/MAP

In relation to new potential measures the following key steps will be undertaken both on regional and national level:

- screen/prioritize/assess new measures based on cost-effectiveness/socio-economic analysis;
- consider the case of costs would be disproportionate taking account of the risks to the marine environment.

On methodology used, various forms of impact/ assessment economic analysis (cost-effectiveness analysis, cost-benefit analysis, multi-criteria analysis assessment) will be considered, building on previous experiences of EU projects in the area.

The task will be divided in the following sub-tasks, at regional and national levels:

Subtask 3.3.1. Socio-economic/cost-efficiency analysis of measures at Regional level (lead: Plan Bleu)

- Based on prioritization given by Contracting Parties, during their discussions on the Regional PoM Analysis (PoM Analysis is to be presented at UNEP/MAP upcoming regional meetings), to undertake socio-economic assessment of selected maximum 4 new regional measures (Plan Bleu);
- Consultation with Contracting Parties, Stakeholders (in regional meetings and in PoM Workshop)- Plan Bleu in cooperation with UNEP/MAP.

Subtask 3.3.2. Socio-economic/cost-efficiency analysis of measures at National level (lead Plan Bleu)

- Based on prioritization given by the countries and stakeholders during the national/stakeholder meetings, to undertake a cost-efficiency analysis of potential new measures (Plan Bleu);
- Consultation with Contracting Parties, Stakeholders (both in already planned national meetings/stakeholder meetings and in PoM Workshop)-Plan Bleu in cooperation with UNEP/MAP.

The socio-economic/cost-efficiency assessment, both on regional and national level will identify who is affected by the impacts (and when)/ who implements the measures/who bears the costs/who incurs the burdens/who benefits? Costs and benefits will need to be specified for individual “sectors”, such as:

- Economic “business” sectors (e.g. fisheries);
- Other users of the marine environment (e.g. tourists);
- Governments: benefits and costs may be shared by various Member States or regions within a Member State, by various regional seas, etc.;
- Non-users of the marine environment (e.g. society as a whole, next generations);

The ‘marine environment’ itself could also be considered as a sector (referring to the MSFD goal of improving biodiversity).

It is highlighted that attributing the costs and benefits to these sectors will help structuring the stakeholder consultation process (e.g. negotiations on future implementation of measures) and making the link with financing (potential sources for financing are often structured by sector).

Task 3.4: Make and disseminate recommendations

Task 3.4 leader: UNEP/MAP

Participants: Plan Bleu, ISOTECH and HCMR

Make and disseminate recommendations, consult stakeholders groups, integrate recommendation into the project action plan.

With proposed key steps:

Regional level:

- Regional PoM Analysis to be discussed in various upcoming already planned UNEP/MAP-Barcelona Convention Regional Meetings in between month 2 and 6 of the

project (meetings such as MEDPOL, PAP/RAC, SPA/RAC Focal Point Meetings), to ensure maximum number of comments, inputs received both by Contracting Parties (including non-EU on non-cost basis) and stakeholders;

- Specific PoM Workshop, to be held back-to-back with EcAp Coordination Group Meeting (month 7), linking outcomes of the PoM Workshop with the regional process under EcAp;
- Key outcomes of the meeting presented at all relevant regional meetings foreseen under UNEP/MAP-Barcelona Convention.

National level

- Draft Action Plans on integrating regional measures to PoM under MSFD and Action Plan on how to update NAPs under EcAp with integrating MSFD requirements will be presented at all already planned national meetings to be undertaken both under MSFD PoM and EcAp NAP process (months 3-8);
- Draft Action Plans will be presented at the PoM Workshop;
- Draft mid-term and Long-term Action Plans will be presented at the first EcAp Coordination Group and other relevant meetings under UNEP/MAP-Barcelona Convention, MSFD, both national and regional/EU level (months 10-13).

Both of the outputs will directly feed as input into the regional process under the Barcelona Convention and to the work of the EU Member States on the Programmes of Measures, in a regionally coherent and coordinated manner.

In addition, they will be both followed up in a mid and short-term action plans, aiming to ensure that all key outputs of the project will be fully incorporated into the regional work under the Barcelona Convention and followed up on the long-term as well.

Activity 4:

“The information Management System for Knowledge and Data Update”

Activity leader: CORILA (Dr Pierpaolo Campostrini)

Participants: HCMR, OGS, CNR-ISMAR, UoA, U.Salento, UNEP/MAP, IEO, CORILA, NIB, MARIS (subcontractor of CORILA).

Activity 4 is structured in the following tasks, according to its rationale and objectives:

Task 4.1: How the existing data and information management infrastructures address the identified gaps and needs in MSFD implementation

Task 4.1 leader: OGS

Participants: HCMR, CORILA, CNR-ISMAR, OGS, UNEP/MAP

The focus is to data and knowledge thereby taking into account that the panorama is different for the 11 GES descriptors of the MSFD. Gaps in the presence of certain knowledge and data on marine issues were already found by Member States' reports and by the Commission as well as in the IRIS-SES project in terms of monitoring. Therefore, Task 4.1 will address these gaps and analyse how the existing data and information management infrastructures (with EMODnet in a

central position) could be adopted and adapted, highlighting possible technological advancements towards interoperability between EMODnet and other relevant data management system, analysing what is missing in terms of INSPIRE/EU legislation, “MSFD Fact sheet approach”, in data coverage and how to engage other institutes in MS collecting and managing relevant MSFD data and information. Task 4.1 will be divided in the following subtasks:

Subtask 4.1.1: Analysis of the fitness for purpose and completeness of EMODnet portals in the Mediterranean area (lead: OGS)

Subtask 4.1.2: Consultation with MS and additional data centres for increased interoperability of EMODnet portals with other identified data management systems (lead: CNR-ISMAR, participant: CORILA)

Subtask 4.1.3: Consultation and Harmonisation with UNEP/MAP (lead: CORILA, in close collaboration with UNEP/MAP)

Task 4.2: Action plans

Task 4.2 leader: CORILA

Participants: OGS, HCMR, UNEP/MAP

This task aims to prepare a plan for the improvement of the information management system for knowledge and data update, thereby analysing and testing specific aspects and data types of relevance for MSFD and also considering approaches by RSCs. Part of the action plan will be the development of uses cases for demonstrating the fitness for purpose of EMODnet for the MSFD implementation.

Subtask 4.2.1 Short term action plans (lead: OGS)

- 4.2.1.1 define best practices on data interoperability for physics, chemistry and biology at Regional and sub-Regional level. (link to Activity 2) (OGS)
- 4.2.1.2 development of use case(s) for regional sea areas using data and metadata of interest from EMODnet Chemistry (OGS, HCMR)

Subtask 4.2.2 Mid term action plans (lead: CNR-ISMAR)

- 4.2.2.1 Coordination action to raise the compliance with RSCs data management approaches and others EU initiatives (e.g. WISE Marine, EEA, INSPIRE) and possible tuning (CNR-ISMAR)
- 4.2.2.2 testing how the information management system can support biological indicators (link to Activity 1) (CNR-ISMAR, CORILA)

Subtask 2.3: Long term action plans (leader: UNEP-CORILA)

- 2.3.1 testing how the information management system can support the programmes of measures and monitoring as planned in Activity 2 and Activity 3 (CORILA)
- 2.3.2 roadmap for an interoperable information management system (CORILA, OGS, CNR-ISMAR)

Task 4.3: On-line inventory

Task 4.3 leader: HCMR

Development of an on-line inventory with the Projects findings such as best practices, actions plans and other relevant documentations from other Project activities. The inventory will be searchable by the appropriate metadata (All partners).

Activity 5: “Coordination, Implementation and Dissemination”

Activity leader: HCMR-Greece, Dr Kalliopi Pagou

Participants: HCMR, Univ Salento, IEO, UNEP/MAP, CORILA

Task 5.1 Administration

Task leader: HCMR

The coordinator along with the project manager and the management office (see details in part d) will monitor the activities and progress of the work plan to assure the conformity to the DoW with special attention to the timeline (as ActionMed is a project with a limited and demanding schedule). They will be also responsible for the communication with the Commission on technical, administrative and financial matters. The project website will be the main communication tool (both internally and externally) hosting the projects results, news and events, relevant documents and information with emphasis on the needs of the stakeholders. A specialised company will undertake the task to build and maintain the website.

Task 5.2 Scientific coordination

Task leader: HCMR

Participants: HCMR, Univ Salento, IEO, UNEP/MAP, CORILA

The Steering Committee (SC) will carry out the Scientific Management of the Project. The Advisory board (AB) will also counsel during its sessions. Bearing in mind the diversity of issues the project is dealing with, and the need to produce a high quality outcome which should primarily address the specific needs of stakeholders on a strict timeframe the SC will meet on a frequent basis. Details of this task are described in sections: d) Project management and implementation contracts, and (e) Arrangements for monitoring/supervision of the operation and any risks involved in its implementation.

Task 5.3 Communication, Dissemination and Stakeholder engagement

Task leader: HCMR

A key aim of the project is to promote its outcomes at the level of national authorities and leads which are responsible for the implementation of the MSFD / EcAp. All actions have been taken to ensure that these authorities are involved and consulted throughout the work, so that the projects results will respond to their needs, will be ‘endorsed’ by them and are in a format that can be directly put into use by the competent authorities for the facilitation of the MSFD on national and regional level in the Mediterranean. This will be one of the core accomplishments of Activity 5. Active engagement of stakeholders is foreseen in all Activities and especially under Activity 3, both on national and regional level. These meetings will be supported and supervised by the Activity 5

Through out the Project duration, the management office as well as the Activity leaders will present the outcomes to all major scientific and policy fora (particularly those related to the activities of the DG Env, as are PCG meetings, conferences, working groups, as well as those of UNEP/MAP) on international and national level ensuring the dissemination and attraction of stakeholders. A dissemination plan will be adopted during the first SC, in order to realise in a coordinated and effective manner the outreach of the project work and results. Moreover, is foreseen the nomination, by the project’s coordinator and management group, as an “Ambassador” of a key scientist (Dr E. Papathanassiou), who along with the Coordinator will promote the Project and its achievements in the major fora according to the project’s

dissemination plan.

Furthermore through the close-involvement and leadership of UNEP/MAP on the long-term action plan part of all Activities, it is ensured that there is a strong link to the regional process and that the outcomes of the process will feed into the ongoing work of the Barcelona Convention on the implementation of the ecosystem approach through the EcAp Coordination Group Meetings and the 19th Meeting of the Contracting Parties, to be held, early 2016.

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c) Expected results and their use:

Applicants should specify the benchmarks or deliverables which they intend to employ to achieve the expected results and targets and how they will be used and disseminated.

Activity 1

The outcome of activity 1 will be an evaluation of coherence of methods across Member States (MS) and within the RSC (UNEP/MAP) in the Mediterranean, with an emphasis on biodiversity descriptors and indicators, their gaps in knowledge and definition of targets and standards on a regional level. Activity 1 aims to establish compatible methodologies, harmonising a number of issues across the “biodiversity theme” descriptors and proposing a common set of biodiversity criteria/indicators.

Activity 1 will develop a manual for strategies for the assessment of biodiversity indicators and a set of recommendations on criteria and methodological standards that that can be pursued to strengthen the implementation of the MSFD and EcAP in the Mediterranean.

In addition intelligent GIS tools (Bio tool) to assist and visualise biodiversity indicators will be developed and tested.

Activity 2

The aims and main outcomes from activity 2 are complementary to those in Activity 1. Thus, the short term general outcome of Activity 2 will be an evaluation of the coherence not only of the methodologies applied, but of the whole sampling strategies proposed by each MS within the framework of MSFD article 11 (Monitoring) implementation and the EcAP process. This will be based on the analysis of a georeferenced database in which all the relevant information from the monitoring programs proposals submitted by the Mediterranean MSs will be gathered through the MSFD and EcAp processes. Considering the results from this analysis a report showing the remaining gaps detected in each country, as well the differences among the monitoring programs across Mediterranean MSs, will be elaborated.

From this report the information more directly related to each MS will be extracted, summarized and complemented with recommendation on short term actions to improve the adequacy and regional coherence of national monitoring plans, and will be subsequently presented to the administrations responsible for the MSFD implementation by means of bilateral meeting between representatives of ActionMed project and such Administrations responsible for MSFD implementation. Finally, Action Plans for overcoming the detected gaps and inconsistencies, aiming at ensure the coherence among Mediterranean MSs MSFD monitoring plans in the mid and long term, will be elaborated through UNEP/MAP. These Plans will too be presented and discussed with the responsible administrations and to UNEP COP meeting, which could use them as a reference document for their future actions aiming at deepening in the coordination of EcAp monitoring plans, in harmony with MSFD monitoring programs implementation.

Activity 3

Activity 3 will focus on Programmes of Measures (PoMs) on two levels: regional and national. On regional level a Regional PoM Analysis will identify potential regional responses in line with

the Article 13 of the MSFD and relevant provisions of the EC MSFD Report, as well as the Initial Measures Gap Analysis under the EcAp process with a focus on regionally common gaps. Based on this analysis a socio-economic assessment of selected potential new measures will be carried out along with a prioritization of the UNEP/MAP Contracting Parties/Stakeholders; Medium and Long-term Regional PoM Action Plan will be thus developed and presented at the POM Workshop with aim to be fed into the regional process, leading to its inclusion in a decision at the 19th Meeting of the Contracting Parties, to be held, early 2016.

On National level Action Plan on implementing the PoM and the NAPs by integrating regional and EU MSFD requirements will be developed and will lead to a proposal for MSFD-EcAp National Medium and Long-term Action Plan, Both of the outputs will directly feed as input into the regional process under the Barcelona Convention and to the work of the EU Member States on the Programmes of Measures, in a regionally coherent and coordinated manner. In addition, they will be both followed up in a mid and short-term action plans, aiming to ensure that all key outputs of the project will be fully incorporated into the regional work under the Barcelona Convention and followed up on the long-term as well.

Activity 4

The best practices that will be documented within Activity 4 for physical, chemical and biological data and information will facilitate the interoperability between the diverse data systems. Common standards for data and metadata formats, quality control, visualization, discovery, access, assembling, and indicators provision will be applied at all processing levels, from acquisition until the final assessment. This way more data and information of known quality will be finally available for use in the MSFD planning and implementation and more and better results will address the targets of achieving the GES at the Mediterranean Seas.

Activity 5

Activity 5 focuses on the monitoring, management and coordination of the project. It will provide effective and comprehensive management of the consortium, coordination and integration within and among the Activities, and communication between partners. The coordinator, the project manager, the Steering Committee and the management office will oversee the timely and high quality of the projects deliverables and reports and their effective dissemination to scientists, policy makers, and national authorities. Activity 5 will target the active participation of stakeholders to the project in order to ensure that the products of ActionMed have the maximum impact and usage on the next phases of the implementation of the MSFD and EcAp across the Mediterranean on short, medium and long term basis.

Milestones & Deliverables:

Activity 1

M1.1: Workshop 1: Identify gaps and setting targets for biodiversity indicators in the Mediterranean Sea (month **M4**)

M1.2 : Workshop 2: Manual for strategies for the assessment of biodiversity indicators (**M7**)

D1.1: Preliminary Report on MSFD biodiversity descriptors/indicators for the Mediterranean - A comparison of targets and associated indicators & Proposal of a common set of biodiversity indicators for the Mediterranean Sea; (**M6**)

D1.2. Activity 1 Interim Report (see R1); (**M8**)

D1.3: Final Report on MSFD biodiversity descriptors/indicators for the Mediterranean -A comparison of targets and associated indicators & Proposal of a common set of biodiversity indicators for the Mediterranean Sea. (**M10**)

D1.2: Manual for strategies for ongoing assessment of biodiversity indicators in the Mediterranean. (**M12**)

D1.3: Development of intelligent tools for biodiversity indicators. (**M13**)

D1.4: Draft Final Activity 1 Report (see R2); (**M14**)

Activity 2

M2.1: Workshop 1: Identification of gaps of national MSFD monitoring programs proposals with stakeholder involvement (**M3**)

D2.1. Georeferenced Database containing relevant data on national MSFD monitoring programs proposals submitted by Mediterranean EU countries (**M4**)

D2.2. Report on gaps of national MSFD monitoring programs proposals and evaluation of their coherence at regional level (**M7**)

D2.3. Activity 2 Interim Report (see R1); (**M8**)

D2.3. Report on pilot action on the integration of automated continuous monitoring systems (moorings) and offshore plankton pelagic sampling, addressing descriptors 1, 4 and 10 within routine mesoscale hydrographic surveys. (**M12**)

D2.4. Report on pilot study on the development of reliable indicators, parameters and thresholds for GES determination within descriptor 1, based on key protected species monitoring in infralitoral bottoms. (This deliverable will be integrated in D1.1. of Activity 1) (**M12**)

D2.5. Mid and long term Action Plans for overcoming the detected gaps and inconsistencies, and ensure the coherence among Mediterranean MSs MSFD monitoring plans (**M13**)

D2.6: Draft Final Activity 2 Report (see R2); (**M14**)

Activity 3

M3.1: 1st ActionMed Decision making national workshops on PoMs: (**M5**)

Five National Workshops will take place, one in each of the 5 participating countries: stakeholder and key actors involvement and the implementation of the dedicated developed decision support method DeCyDe-4-ActionMed and the e-toolbox in support of developing country specific PoMs

M3.2: PoM Regional Workshop ; (**M7**)

It will be held back-to-back with the EcAp Coordination Group Meeting and will give specific recommendations and will adopt a Medium and Long-term Regional PoM Action Plan

M3.3: 2nd ActionMed Decision making national workshops on PoMs : (**M11**)

Five National Workshops will take place, one in each of the 5 participating countries: finalisation of country specific PoMs and evaluation of Best Practices according to their attributes for country-specific implementation.

D3.1: Regional PoM Analysis; (**M2**)

It will identify potential regional responses in line with the Article 13 of the MSFD and relevant provisions of the EC MSFD Report, as well as the Initial Measures Gap Analysis under the EcAp process with a focus on regionally common gaps

D3.2: Socio-economic assessment of selected potential new regional measures; (**M6**)

It will be based on the Regional PoM Analysis and the prioritization of the Contracting Parties/Stakeholders;

D3.3: Action Plan on implementing the PoM and the NAPs by integrating regional and EU MSFD requirements; (**M7**)

(to be discussed at PoM Workshop and back to back EcAp Coordination Group)

D3.4: Report from 1st ActionMed PoM Decision making national workshops on PoMs; (**M7**)
Isotech

D3.5: Interim Report on Development of PoMs (see R1); (**M8**)

D3.6: Evaluation of suggested Measures and major attributes for a successful implementation – Outcome from 1st ActionMed PoM Decision making national workshops (**M9**) Isotech

D3.7: Medium and Long-term Regional PoM Action Plan; (**M11**)

This will be developed based on D3.1 and D3.2 and will be first presented at the PoM Workshop. Together with recommendations of the Regional PoM Workshop it will be further discussed in the EcAp Coordination Group Meeting, with the aim to be fed into the regional process, leading to its inclusion in a decision at the 19th Meeting of the Contracting Parties, to be held, early 2016.

D3.8: MSFD-EcAp National Medium and Long-term Action Plan; (M13)
(to be discussed at first EcAp Coordination Group Meeting in 2016)

D3.9: The Best Practices Data Base- ; ActionMed PoM Decision making national workshops; (M13) Isotech

D3.10: Draft Final Report on Development of POMs (see R2); (M14)

Activity 4

M4.1: Workshop 1: “Gaps and Needs” representative of EMODnet portal and MS authorities; (M4)

M4.2: Workshop 2: “Best practice on data interoperability “ workshop in collaboration JRC MCC, invited WISE Marine, EEA, INSPIRE others projects, RSC; (M12)

D4.1: Report on the “Gaps and Needs” analysis on information management system for relevant knowledge and data to support MSFD/EcAP (M6)

D4.2: Activity 3 Interim Report (see R1); (M8)

D4.3: Plan for the improvement of the information management system for relevant knowledge and data to support MSFD/EcAP (M13)

D4.4: Draft Final Activity 3 Report (see R2); (M14)

Activity 5

M5.1: Kick off & SC Meeting (M1)

M5.2: SC Meeting (M4)

M5.3: SC Meeting (M7)

M5.4: General Assembly (M9)

M5.5: SC Meeting (M11)

M5.6: Final General Assembly & Conference (M14)

R1: Interim report, including recommendations for updated national / regional GES definitions and targeted actions related to the planning and implementation of the programmes of monitoring and measures, as well as the related integration of data: (M8)

R2: Draft Final report which describes clearly the executed tasks and results (to be finalised within a month) (M14)

R3: Final report- action plans including all the specific products and deliverables produced in the context of this project (M15)

d) Project management and implementation contracts:

Applicants should provide a detailed description of the organisation of the action and of the implementation phase, specifying arrangements for monitoring, supervision and risk management. They should also explain which part of the action might be subcontracted (list of main activities, or works to be carried out)⁴⁹.

⁴⁹ The value of subcontracts should be clearly indicated in the Budget under the "sub-contracting/ external assistance" heading. The Authorising Officer may, depending on the portion of the activities to be subcontracted, request additional information on the procedures that will be followed by the Applicant to

The Consortium brings together a unique set of partner institutes that geographically cover marine waters of the Mediterranean Sea with renowned knowledge and experience covering very broad areas of expertise, in line with the requirements of the call. The individual partners that constitute this Consortium are all involved in national and international projects related to the implementation of the *Marine Strategic Framework Directive and Water Framework Directive*.

The **Coordinator** (Dr K. Pagou) the **Project manager** (Dr N. Streftaris), the assistant manager (Dr.L. Giannoudi) supported by an **administration and financial officer** (Mrs S. Frangou) and **secretariat** (Mrs M. Kimigeli), will handle routine administrative matters, communicate with partners, monitor their activities, identify problems and resolve them. This will be achieved through planning and running of the kick-off, annual and final meetings in order to raise issues or problems and point out achievements and take the necessary corrective actions. The management office will thus monitor and stimulate the project's progress to assure scientific quality, conformity to the DoW and effective run of the project. Emphasis will be given on the integration among and within the Activities. The management office has the experience for coordinating and managing successfully similar project (IRIS-SES and PERSEUS). The project coordinator and the project manager will arrange and facilitate the SC and AB meetings (see below), and implement their decisions.

Scientific Management will be carried out by the **Steering Committee** (SC). The SC will consist of the Coordinator as chairperson, the Project Manager, and the four (4) Activities Leaders. The Activity leaders are all prominent scientists, experienced in RTD and DG ENV projects. The role of SC is to coordinate the scientific progress of the project, to keep the project focused, and work on achieving project goals in an integrated manner within and across Activities. Its role also encompasses the planning and running of the scientific work and the final Scientific Conference, as well as preparing the deliverables and reports. Finally, the SC will have the responsibility of managing and overseeing the use, exploitation and dissemination of results and the close collaboration with stakeholders and end users.

A panel of experts will constitute the **Advisory Board** of the project. These will be key stakeholders of the project's scientific results and bodies that work on similar topics in the same area. These are the coordinators of PERSEUS, DEVOTES and the EMODnet -MEDSEA CheckPoint projects, representatives from the OSPAR and the GFCM Commissions, the JRC and the EEA. The project will rely on these experts for their advice and feedbacks to keep the project on track and furthermore to exchange data and information and provide tailor made advice and products to their bodies.

External experts like the ARCADIS consulting firm (as leaders of the EU MED MSFD DG Env project) and RAC/SPA will be invited to the meetings to provide scientific guidance and bring along their experience on similar projects.

Finally, project progress, results and developments will be communicated within the Consortium via the project's website. The website will also be the means of checking the progress of the work against the milestones. The IRIS website will also serve as a tool to enhance communication and dissemination of the project's deliverables and results to stakeholders and end users and society in general. This is a key aspect as the project relies on the involvement of the stakeholders and aims to have products tailor made to their needs. A subcontractor is required with the responsibility of the design, implementation and maintenance of the website. Subcontracting has been proposed as these specific services that are required cannot be provided by the partners of the Consortium

Regarding subcontracting MARIS will be subcontracted by CORILA. MARIS is very much involved in the development and implementation of the Pan-European infrastructure for ocean and marine data and is engaged in a series of EU projects in the domain of marine data management, often as coordinator resp. technical coordinator. MARIS is very active in the implementation of the European marine observation and data network (EMODNet) and also is technical coordinator of EMODnet Chemistry. MARIS will be involved in WP4 to ensure that the Project data management activities are tuned and harmonized with on-going EU relevant activities.

e) Arrangements for monitoring/supervision of the operation and any risks involved in its implementation:

Applicants should explain how the action will be supervised. They should refer to risks involved in its implementation, how they might affect the objectives and outcomes of the action and how they could be mitigated.

Potential sources of risks that have been identified and may influence the work plan can be 'internal' or 'external'.

Internal risks can be associated with the integration among and within the activities and the timely production of the deliverables and milestones, both in relation to the short duration of the project. Monitoring of the progress of the work in a timely and integrated way is the responsibility of the Co-ordinator, the Project Manager and the Steering Committee. Both the leading beneficial (HCMR) and the partners have already experience from on-going similar activities (such as IRIS-SES) for delivering results on short term.

Quality of the products is being reassured through the selection of the partners and the Activity leaders during the build up of the consortium and will be monitored by the Steering Committee. They are high experienced scientists representing major Research Institutes and Organizations in Europe who have long experience in delivering reports, data, products and services of the highest quality on time. They participate in core EU and International funded Research Projects and Supporting Activities of standardized quality and are able to identify and evaluate shortcomings and propose appropriate solutions. The SC will meet 4 times during the project (months 1, 4, 7 and 11); its role has been described in section d above.

General Assembly (GA) meetings will encourage partners to raise management issues, related problems and report on their progress.

The kick-off meeting bringing together all partners will be held within the first month of the project. This first meeting will help to identify issues that need further elaboration within the different Activities, provide linkages between participating institutions, give an overview, in terms of concrete outputs, and help the integration of the different tasks for all the Activities by exploring the work to be carried out. Two General assemblies are foreseen at months 9 and month 14 and the last one will be backed with the final Conference. Scientific achievements shall be presented during the scientific conference to be held back to back with the final GA meeting.

It is the responsibility of Coordinator and the SC to identify the risks and put in place adequate risk management. Good communication with the DG ENV and with the partners at the start and during the implementation period is essential to avoid or reduce related to expectations on and realization of the deliveries. Careful planning will reduce the risks involved to the delivery of the project. To deal with these risks kick off meetings, monitoring and progress reports by Project Group are accepted methods. The small size of the SC also allows for adhoc meetings (through skype) if there is a need for such actions (as previous experience has demonstrated)

External risks can be related to the quality and timing of the MSFD related country reports (on all Articles 8,9, 10, 11 and 13). Article 11 reports (monitoring) have not been released yet (are expected by the end of 2014) whereas the timing of delivery of Article 13 (measures) is not clear yet. Input on Article 11 will be also acquired from ongoing activities such as the IRIS-SES and EU-MED-MSFD projects to supplement the country reports. Work on Article 13 will be based on the PoMs collected through UNEP/MAP EcAp process and supplemented by the partners providing information on the progress of the development of measures prior to their official release. The MSFD national authorities are also involved in the project and can also provide insights to the progress.

f) Sustainability of the project's achievements:

Applicants should explain how sustainability will be secured once the action has been completed. This can include considerations about different dimensions of sustainability: financial, economic, institutional (structures which would allow the results of the action to continue), environmental, policy, etc. (where applicable, depending on the provisions of the basic act).

The project's outcomes will be promoted at the level of relevant national authorities, which will be involved and consulted throughout the work; All actions have been taken to ensure that these authorities are involved and consulted throughout the work so that the projects results will respond to their needs, will be 'endorsed' by them and are in a format that can be directly put into use by the competent authorities for the facilitation of the MSFD on national and regional level in the Mediterranean.

The MSFD competent authorities (national lead authorities) will be involved in the project as invited stakeholders at two stages. First they they will be consulted in the identification of gaps and needs on articles 8,9, 10, 11 and 13 and on required actions. In the second phase they will be asked to comment and provide feed back on the actions proposed by the project prior to the final formulation. In this way the products of ActionMED will fit directly to the need of the countries and will be channelled to the proper authorities for their implementation. International meetings will also be held (under the RSC UNEP/MAP). The same authorities will also be invited to the General Assembly meetings to follow the progress and the achievements of the project. In addition, the project will carry out pilot tests of the proposed short term actions and demonstrate them to the national authorities (through the deliverables and national meetings) and will thus ensure the applicability of the proposals. The countries MSFD competent national authorities have already endorsed the project as shown by their Letters of Support (attached in the proposal). Furthermore through the close-involvement and leadership of UNEP/MAP on the long-term action plan part of all Activities, it is ensured that there is a strong link to the regional process and that the outcomes of the process will feed into the ongoing work of the Barcelona Convention on the implementation of the ecosystem approach.

Also our team has not only a full coverage of expertise and disciplines to complete the action but is also connected through an extensive European and worldwide network to relevant scientist, policy makers and other stakeholders. Our members also have many personal contacts among individual experts, scientific institutes, governments and industries. This network can be used by the project to promote the outcomes/ deliverables. A selection of the most relevant networks, organisations and international projects/initiatives are hereby listed: European Environment Agency (EEA), OSPAR, HELCOM, ICES, LOICZ, MED-GIG, JRC, IOC (International organisations) and PERSEUS, COCONET, MESMA (Networks & International Projects)

In addition this project will be an excellent opportunity to use the sustainable national data management infrastructures for promoting and addressing issues and needs related to the MSFD. The outcomes of Activity 4 (Data management) will be promoted at National and Pan-European level using the EMODnet networking. EMODnet is developing into a network of existing and developing European observation systems, linked by a data management structure covering all European coastal waters, shelf seas and surrounding ocean basins is based on a network of more than 100 European National Oceanographic Data Centres and Marine Institutes that collect and

process marine data which are not always involved in MSFD activities and obligations.

Finally the results / achievements will be available through the project's website to all stakeholders and dissemination material will be distributed to them in all occasions in a format and a 'language' that is friendly to them. Throughout the project the management office as well as the key scientists will present its outcomes to all major scientific and policy fora (particularly those related to the activities of the DG Env) on international and national fora ensuring the dissemination and attraction of stakeholders. The project will nominate an Ambassador a key scientist (Dr E. Papathanassiou) who along with the Coordinator will promote the Project and achievements in the major fora according to the project's dissemination plan

g) Describe how and to which extent your activities address main gaps and shortcomings in relation to Articles 8, 9 and 10 of MSFD as identified in the Commission report (COM(2014)97) and SWD(2014)49)

(For evaluation of award criterion on technical coherence)

The Project will aim to answer during its work the following key points of the Article 12 Assessment:

- Initial assessment was not used to establish a "baseline" and "distance to target"; in other words, the current levels of environmental status were not adequately quantified against fully-defined levels of GES; very limited new data and assessments were made and the existing ones, including from the Regional Sea Conventions, were not always used systematically and were often not (yet) fully aligned to serve the purposes of the MSFD adequately;
- GES has often not been set in a measurable way and high qualitative ambitions in GES determination (when they do exist) are likely to remain aspirational (as identified in the Commission reports there is no shared understanding of GES in EU, even at a subregional level, and there are over 20 different GES determinations across the EU, therefore no common or comparable goals).;
- The methodologies applied for the assessments were not coherent nor comparable
- The socio-economic analysis showed many gaps in the availability of information.

Activity 1 outlines the need to integrate the information in the Mediterranean across descriptors/indicators, GES definition and targets in order to support MSFD implementation. The activity aims to build on the existing knowledge and key gaps for the GES definition and targets focusing on the descriptors and indicators developed for the "biodiversity theme" on the existing MS reports, on the EcAp process under UNEP/MAP- Barcelona Convention. Moreover other important information sources with respect to biodiversity descriptors/indicators, GES, and targets, such as EU research projects and other regional approaches will be reviewed, analysed and catalogued.

The information gathered will build on case studies aiming to develop further biodiversity indicator. A first workshop is planned for testing biodiversity state indicators using ecosystem characteristics and will propose environmental targets; a second one (with biodiversity expert groups, under the Barcelona Convention), will reinforce a common conceptual frame for the biodiversity indicators in the Mediterranean and set targets where possible.

The mid-term actions aim to provide a manual of strategies for the ongoing assessment of biodiversity indicators, recommendations for key biodiversity components of the marine ecosystems, their assessment scales, methodologies used for assessment, and address the gaps and methodological procedures that need to be tackled in the coming years. The long-term action plan focuses on biodiversity monitoring gaps. It is fully in line both with the EU MSFD timeline and with the regional timeline (EcAp Roadmap), ensuring that the outcomes and recommendations of the short and medium term action plan can be integrated into the regional work. The Long-term Action Plan would be undertaken in between months 6-10 of the project and will build not only on the outcomes of the project, but also on ongoing expert level and policy discussions under the auspices of the EU MSFD and UNEP-MAP/Barcelona Convention

Activity 2 focuses mainly in the analysis of MSFD and EcAP monitoring plans proposals derived from the implementation of Article 11, aiming at ensuring their adequacy and coherence, as requested by MSFD/ EcAp. Thus, the outputs of this activity will contribute to the implementation in the short and mid-term of monitoring programs that will provide base data useful for better defining the real situation in the Mediterranean mainly in relation to biodiversity descriptors, and hence to a better definition of the starting points and subsequently environmental targets, as well the measures that should be adopted to reach them.

Activity 3 aims to answer the above mentioned key points of the Article 12 Assessment by improving the development of a regionally coordinated, cost-effective Program of Measures (art 13), ensuring synergies; and supporting in particular those MSs who have identified certain gaps and needs and are committed to address them together in a coherent manner, ensuring coherence between the MSFD implementation and the regional approach under the Barcelona Convention. Specifically from Art 12 Report recommendations, it will focus on working towards a more consistent approach within and among regions, with greater coordination of programmes of measures development, building more on the work of the Regional Sea Conventions (in our case of the Barcelona Convention). In line with the above, the Activity 3 aims to address the risk that the shortcomings in the current implementation phase might be carried forward into the next steps. This is particularly relevant for the Programmes of Measures that are due in 2015, where both regional cooperation, in the form of addressing regional gaps on a common basis and establishment of national Programme of Measures for MSFD, building on the regional framework, will be key to ensure consistency and coherence.

Activity 4 will support the other Activities by improving data collection remedying wherever feasible the data gaps, expand the geographical coverage and improving the data management to the needs of the these Articles of the MSFD in accordance to EMODnet principles in a consistent way across the Mediterranean More multidisciplinary and interoperable data will support the ecosystem based and integrated approach and improve the knowledge gaps. Adoption and adaption of common standards and best practices in reporting mechanics will improve the quality of the Members States reported data where it is appropriate

h) Describe the expected impact of the proposed activities on target groups - relevant stakeholders, key national and regional organisations, such as Regional Sea Conventions and national policy leads for MSFD and how they involved in your activities/organization in your activities/organisation

(For evaluation of award criterion on contribution to general objectives)

UNEP/MAP the Regional Sea Convention for the Mediterranean is one of the major partners of the ActionMed contributing to all Activities and leading the work on measures to MSFD (Article 13) (Activity 3 of the project). In this way the outcomes will directly feed as input into the regional process under the Barcelona Convention and to the work of the EU Member States on the Programmes of Measures, in a regionally coherent and coordinated manner.

Representatives from the EU national lead authorities responsible for the formulation and the implementation of the MSFD will be invited to the General Assembly meetings to be informed and participate as described in the sections above. The involvement and the benefits to the stakeholders (national authorities responsible for the implementation of the MSFD etc) have been described in detail in parts f (Sustainability of the project's achievements) and g (Describe how and to which extent your activities address main gaps and shortcomings in relation to Articles 8, 9 and 10 of MSFD as identified in the Commission report (COM(2014)97) and SWD(2014)49) above. The use EMODnet networking (see parts above) will expand the geographical coverage and list of potential users (data, inventories and web based tools) across the basin and beyond the project partners

i) Describe your strategy for increasing synergies and avoiding overlaps with major

relevant international projects and activities

(For evaluation of award criterion on contribution to general objectives)

Most of the projects and initiatives involved in the MSFD and its implementation in the Mediterranean are involved either directly or indirectly to the project. The Regional sea convention (UNEP/MAP) is a partner. UNEP/MAP, who is involved in almost all MSFD/EcAp relevant projects in the region, will ensure the avoidance of overlaps. More than that, as the project coordinator for the EcAp-MED EU funded project and as the implementer of the ecosystem based process and its related budget under the Mediterranean Trust Fund, UNEP/MAP will ensure that the various MSFD/EcAp related projects will strengthen each other. The coordinators and WP leaders of the IRIS-SES and PERSEUS projects are key members of the consortium (the former being the coordinator of this proposal) and the scientific teams and WP leaders of the relevant partners (HCMR, IEO, Un of Salento, CNR, OGS) are participating in the consortium. Projects like DEVOTES and EMODNet MedSea Check point and organizations like EEA, and JRC seat on the Advisory board and external experts (ARCADIS and RAC/SPA) also provide info to the ActionMED. External experts like the ARCADIS consulting firm (as leaders of the EU MED MSFD DG Env project) and RAC/SPA will be invited to the meetings to provide scientific guidance and bring along their experience on similar projects.

The partners of the project are (in their majority) participating as core partners and WP leaders in almost all the related EU and International projects in the Mediterranean (e.g MedSea Checkpoint, LifeWatch, ADRIPLAN etc) and data management Networks (e.g. EMODnet, INSPIRE, “Development of a shared data and information system between the EU and the Regional Sea Conventions (phase 1)”). Furthermore the consortium partners implement the MSFD in their countries.

j) Describe the geographical coverage of your proposal and how your activities will potentially outreach to third countries

(For evaluation of award criterion on geographical scope)

The consortium cover most of the Mediterranean EU countries (namely Spain, Italy, Slovenia, Greece, and Cyprus), thus the ‘major’ counties (in terms of geographical countries are part of ActionMed. Most important UNEP/MAP-Barcelona Convention covers the whole Mediterranean region, including non-EU countries. UNEP/MAP, participating in all WPs of the project, will ensure that the best practices and key outcomes of the project will feed directly into the regional work where it will be shared on an early stage and also with the non-EU countries and more than that, whenever possible, on a non-cost basis for the project, to have them also involved in the activities of it/and or form the activities in a way, that they will be able to benefit from it as well (on a non-cost basis).

This way EU countries like France, Malta and Croatia will be ambassadorinvolved in the project and its products. Furthermore France (Bureau des milieux marins, Adjointe à la chef de bureau Ministère de l'Écologie, du Développement Durable et de l'Énergie) has been contacted in order to participate in the majoe meetings and thus be ‘connected’ to the project and its outcome.

The use EMODnet networking (see parts above) will expand the geographical coverage and list of potential users (data, inventories and web based tools) across the basin and way beyond the project partners.

2 PLANNED DURATION OF THE ACTION (in months):

Planned starting date:

2.(a) TIMETABLE FOR EACH STAGE OF THE ACTION SHOWING MAIN DATES AND EXPECTED RESULTS FOR EACH STAGE															
Month (M) Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Preparation Activity 1	X														
Implementation Activity 1		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Results / Outcome Activity 1				W		D	W	R		D		D	D	R	
Preparation Activity 2	X														
Implementation Activity 2		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Results / Outcome Activity 2			W	D			D	R				D	D	R	
Preparation Activity 3	X	X	X	X											
Implementation Activity 3					X	X	X	X	X	X	X	X	X	X	X
Results / Outcome Activity 3		D			W	D	W	R	D		W		D	R	
Preparation Activity 4	X														
Implementation Activity 4		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Results / Outcome Activity 4				W		D		R				W	D	R	
Preparation Activity 5															
Implementation Activity 5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Results / Outcome Activity 5	GA SC			SC			SC	R	GA		SC			R	R

W: Workshop
D: Deliverable
R: Report to the Commission
GA: General Assembly
SC: Steering Committee

LEGAL NOTICE

Applicants are informed that, under the Financial Regulation applicable to the general budget of the European Union, no grants may be awarded retrospectively for actions already completed. In those exceptional cases accepted by the Commission where applicants demonstrate the need to start the action before the agreement is signed or the decision notified, expenditure eligible for financing may not have been incurred before the grant application was lodged ⁵⁰.

3 BUDGET

3.1 Estimated Budget — Annex 1

Applications must include a detailed estimated budget in balance, in which all costs are given in euros. Applicants from countries outside the euro zone may use either the conversion rates published in the Official Journal of the European Union, series C, during the month in which they are submitting the application or the monthly rate published on the Commission's website at www.ec.europa.eu/budget/inforeuro/.

Summary (in €)

- a) Eligible costs: 1249775
- b) Total costs: 1249775
- c) Requested Union Funding: 999820
- d) Rate of funding requested: 80%

⁵⁰ *Paragraph to be adapted if the programme concerned is covered by one of the exceptions laid down in the second paragraph of Article 130 of the Financial Regulation (provided for in the basic act or for crisis management aid or humanitarian aid operations).*