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JOINT ACTION PLAN

“Developing conditions for the Blue Growth in the Mediterranean”

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What is the Mediterranean? A thousand things together. Not a landscape but innumerable landscapes. Not a sea but a succession of seas. Not one civilization, but a series civilizations stacked one upon the other. All this because the mediterranean is an ancient crossroads. For thousands of years all converged there, complicating and enriching its history.

In the physical landscape as in the human, the crossroads of the Mediterranean, the Mediterranean composite presents itself to our memory as a coherent image, where everything comes together and merges in an original unity.

Fernand Braudel

1. Introduction

This document sets out the Joint Action Plan of the Macro-Project outlined in the “**Bologna Charter 2012**”, policy document subscribed on the 21st of March 2013 by several maritime Regions and Administrations of the Mediterranean (<http://bolognacharter.facecoast.eu>) and adopted by the InterMediterranean Commission of the CRPM, General Assembly on the 27th of June 2013 in Barcelona.

The policy initiative promotes the definition of strategies and actions aimed at the protection and the sustainable development coastal and maritime space in the Mediterranean.

Over the last decades, the Mediterranean basin has increasingly become a complex socio-economic, political and institutional area spanning several geographical spaces and entities as EU Member countries, pre-accession and candidate countries, countries belonging to the southern neighbourhood policy, Euro-Mediterranean and multilateral institutions, as well as different sets of sub-national, economic and civil society actors. This diversity of stakeholders de facto represents a variety of local, regional, national, EU and global cultures, geopolitical situations, strategies and policies that share assets but also cross-cutting challenges at basin level such as sustainable and socio-economic development that concern European, Euromed and global agendas, the **adaptation to and fight against climate change** and environmental risks prevention, or the promotion of Blue Growth, decentralization and democratic governance, among many others.

In view of these global challenges, it therefore appears crucial to **strengthen multi-level and territorial cooperation between the Mediterranean rims**, in order to reinforce the assets the area naturally benefits from, while reducing and solving the common issues and challenges it has been faced with over time. The forthcoming global agenda post-2015, the European agenda for the 2014-2020 programming period, the election of the new Parliament, the reorganization of the European Commission, and the Italian Presidency of the EU Council, as well as the increased implication of Local and Regional Authorities (LRAs) and stakeholders in EU cooperation (European Territorial and Decentralized cooperation on top) seem to be the opportunity to underline the urgent need to consider, develop, and integrate the Mediterranean as a priority area of action.

In this context, the new emerging models of **Macro Regions** (Baltic Sea, Danube, Adriatic-Ionian, and Alpine) and/or Sea Basin strategies, if shared by the key actors and conceived on a variable geometry and gradual perspective, could be encouraged as efficient instruments and frames for the improvement of cooperation at the basin level. Shared visions of a cohesion strategy for the Med, of its governance and implementation, as well as the reinforced participation of the local and regional levels of governance from both EU and Med Partner Countries, would therefore greatly contribute to strengthen the Mediterranean as a binding area acting as one entity towards a more efficient and relevant resolution of its main transversal and global issues.

The **coastal areas** of the European Union are among the mostly **threatened by climate change** effects. The situation is **especially critical in the coastal areas of the Mediterranean** basin that are more and more inhabited. Population density at the coastline is much higher than in coastal regions as a whole (Eurostat, 2011). Furthermore in the last decade Mediterranean tourism industry

has grown significantly, fishing grounds remain overexploited and shipping transport increased approximately up to 50 % between 1997 and 2006.

Coastal zone are then subject to multiple natural and human-induced strains, such as the rise of sea level, erosion, subsidence and decline of natural defences. The climate change effects are having more and more impacts not only on **low-land sedimentary coasts** but also on cliff and rocky coast. Inundations and landslides are becoming a constant concern for the coastal populations. The safety of the human settlements as well the natural habitats is becoming a major concern and a prerequisite for developing a blue growth in the Mediterranean basin.

1.1 Scenarios and vision

Considering the scenarios¹ and the current economic crisis, the **Mediterranean undoubtedly represents the European area most in need of innovative strategies** for the South of the Union, which is to play new roles to ensure the sustainable development of the entire area, roused by the new upcoming developments in North Africa and the Middle-East.

Exposure, sensitivity and adaptation capacity are the three main components that determine the **territorial vulnerability**. **Adaptation capacity** is the component on which maritime Public Administrations can have higher influence in facing the challenge of climate change, towards a smart, sustainable and inclusive growth of their territories.

Vision shared by the partnership is that “Blue Growth” in the Mediterranean finds its fundamental conditions in safety, wellness and sustainability-oriented development models of coastal areas and relative maritime space. This including opportunities given by the development of new markets, companies and job creation, in the field of ecosystem-oriented activities related to coastal and marine environment protection, management and adaptation to climate change.

Moreover an important number of EU instruments constitute, or are going to constitute, together an important part of the “framework conditions for the Blue Growth” in Mediterranean countries:

- **EU and intergovernmental regulations or policy initiatives:** Marine Strategy Framework Directive (MSFD), Framework Water Directive (FWD), Flood Directive (FD), Project for a directive establishing a framework for Maritime Spatial Planning and Integrated Coastal Management (MSP & ICM), Habitats and Birds Directives, EU strategy on adaptation to climate change, EU initiatives concerning marine data, the ICZM Protocol for the Mediterranean (Barcelona Convention) and its implementation Action Plan (2012-2019);
- **Set-up specific funding:** EARDF, part of the EMFF devoted to the Integrated Maritime Policy, Horizon 2020, Life+ Program.

¹ Taking into account the **JRC - IPTS** study (**PESETA** project 2009) we know that, considering the hypothesis IPCC B2, along the Mediterranean coastal zones, it is expected a range of damages between € 3-7 Billion before 2020, which becomes of € 6-38 billion before 2040. Before 2020 and with the same increasing rate, environmental damages must be added in terms of coastal zones submerged (110 ha), eroded (350 ha) or jeopardized wet land (400.000 ha).

Preliminary results of the **PESETA II** study (Projection of Economic impacts of climate change in Sectors of the European Union - 2013) indicate that, about adaptation implications in coastal impacts, the overall welfare loss in the EU would be reduced from € 42 Billion (under no adaptation) to € 2 Billion (with adaptation) and from € 4.5 Billion to € 0.13 Billion in Southern EU / Mediterranean (being estimated for the EU as a whole the net welfare loss of the reference runs to be around 0.7% of GDP).

Finally, the recent Directive (2014/89/EU) establishing a framework for Maritime Spatial Planning, the implementation of the MSFD, as well as existing projects funded by several European programs (ENPI-CBC, INTERREG, PROGRAMME MED, etc.) show the need to improve the coordination between EU instruments, national and regional policies from a territorial and sea-basin/macro-regional perspective.

The Macro-Project of the Bologna Charter and its Joint Action Plan here below outlined, indeed represents an original and coordinated effort of the Mediterranean coastal Administrations to face concretely the challenges of the coastal natural risk by adaptation policies contributing to develop conditions for the “blue growth” in the Mediterranean.

1.2 Participation

With the scope to ensuring adequate and a wider view as possible in the process of definition of the JAP content and aims, a **Coordination Board** within the work group on Integrated Maritime Policy of the InterMediterranean Commission of the CRPM it has been constituted.

The “Bologna Charter Coordination Board” involves the COASTGAP partners, the maritime Administrations signatories of the Charter, other Regions being part of the InterMediterranean Commission, the representatives of the Italian flagship research project RITMARE on marine and maritime research. During the meetings of the Board in 2014, from the start in Bologna (February) and through the ones in Montpellier (June) and in Rome (November), and thanks to the partnership strict collaboration during the whole period, it has been possible to focus on common problems, challenges to be faced and priority actions to be implemented in the next seven years period and beyond.

The result of this process is condensed in this document that represent the way how maritime Administrations intend to face the coming challenges in the period till 2020 and over, through **Joint Actions** (Annex 2) to be commonly developed into projects to be submitted in specific Programs or possibly receiving direct support from EU, through **Major Coastal Projects** (Annex 3) designed following **common principles** of sustainability, ecosystem approach, local participatory process in decision-making, ICZM-MSP integration, to be implemented by the coastal Administrations to answer to climate change adaptation needs, through **regional monitoring infrastructures and management projects** on coastal and marine areas (Annex 4).

Participation of local communities in decision-making process is considered as crucial element for the Major Coastal Projects included in this operation as well as the participation of stakeholders in the implementation of the Joint Actions.

Then aim is to ensure efficacy of the operation by sharing vision, guarantee collaboration in implementation and future management and by getting precious inputs from diffuse knowledge and experience ripened by local communities on their territories.

This way the JAP aims to contribute in enhancing coastal and maritime governance processes along with ICZM principles, with particular references to Art. 7 and Art. 14 of the **ICZM Protocol** for the Mediterranean, and with **MSP principles** with particular references to of Art. 6 and Art. 9 of the Directive 2014/89/EU.

2. European strategic projects: Coastal Administrations as promoters of macro-regional initiatives and Macro-projects

The objective difficulties to effectively intervene in integrated “framework” macro-areas like the Mediterranean basin, are evident in the effort to redesign the European projects planning for the next period 2014-2020.

The hypothesis to include projects in macro-regional contexts is a clear attempt to find new and more favourable settings for long-lasting and efficient outcomes.

The widespread adoption of the term “strategic” in several European programs (ENPI-CBC, INTER-REG, MED, etc.) stands for an action aimed to increase the effectiveness of the EU funded projects. Nevertheless, we still lack the elements required to achieve real progress; and the elements suggested basically reproduce those adopted by traditional projects, often only emphasising them in terms of budget and allowed number of partners.

Moreover the strategies currently adopted for many of the next programmes/initiatives (e.g. Horizon 2020, Copernicus, EMODNET, MED) are oriented for a stronger connection between the outputs and their real capacity to be put in practice (mainstreaming) and be clearly useful for the growth. In fact many important European initiatives suffered from a lack of practical impact on the investigated territories.

Thus, if the Mediterranean Administrations intend to play a key role in the Mediterranean policy, they are first of all required to promote projects whose strategic nature stems directly from real needs and their self capacity in sharing visions, solutions and methods to overcome territorial challenges.

The Mediterranean Administrations, on the grounds of their experience in cooperation, capacity to link with scientific Community, and territorial competence, can promote strategic initiatives (as a macro-project) mainly featured as follows:

- **Coherent ensemble of studies, researches, projects and works** aimed to face strategic operations by an integrated approach and to be developed at macro-regional level.
- **Clear coherence with the most relevant European policies on coastal zones** (like Adaptation to CC, Integrated Maritime Policy, Marine Spatial Planning, ICZM, Marine Strategy and Water Framework Directives, etc.) in order to be consistent with the current European operational programmes and be eligible to be funded by them (*a strategic macro-project is indeed designed to be funded by more European/International programs, according to a suitable articulation, also in order to get a budget and time extension adequate to its objectives*).
- **Deep connection with the South and East bank of the Mediterranean** and consistency with the six priority project lines outlined by the Union for the Mediterranean and in particular with Civil Protection project for the effects of climate change (to be enhanced also through working groups linked to ARLEM-UfM)
- **Innovative content thanks to a strongly territorial and participate path**, explicitly endorsed by public and private operating bodies (protocols between Regions, Departments, Municipalities, local Communities, Entrepreneurs, Associations, etc.) and their active involvement according to the principles of policy-innovation, open-communication, etc. (Living Lab)

- **Possibility of mutual integration with other macro-projects in order to encourage and facilitate macro-regional policies** with multi-sector approach (networking between Regions) able to enhance the strategic contents in terms of thematic integration and geo-political diffusion with the necessary flexibility.
- **Designed to be stable** through the potential Implementation of specific clustering structures (like PEGASO platform, FACECOAST etc.) or the creation of one (like EGTC -European Grouping for Territorial Cooperation) able to manage long-term initiatives (coastal network observatories, specific programs, etc.)

2.1 Looking to macro-regional and sea basin strategies in the Mediterranean

Looking forward to the upcoming **EU macro-regional strategies**, the initiative responds to the need to foster and to activate advanced cooperation tools (as the macro-projects) to make the actions taken by the coastal Administrations more efficient in dealing with the adaptation to climate change through a coastal and maritime space integrated management and protection of the marine environment, in order to contribute in developing the conditions for the Blue Growth.

Regarding the discussion on the **macro-regional strategy for the Mediterranean**, it is considered positively the political message adopted by the InterMediterranean Commission on Macro-Regions in the Mediterranean as follows:

- the **variable geometry** characteristic for the proposed strategy: a global Integrated Mediterranean Strategy in the long-term perspective that should include three short/medium term oriented strategies: the Adriatic-Ionian Strategy (on-going), the Western Mediterranean, the Eastern Mediterranean;
- the **balanced multilevel approach** top-down and bottom-up and the need to set up public/private synergies;
- the **gradual "step by step" voluntary approach** to be applied to the MRS strategy concerning cooperation with the southern countries and territories;
- the **synergies** to be set up **with Territorial Cooperation programmes** in the area, the mainstreaming and the importance of capitalisation of previous projects/initiatives;
- the need for **thematic concentration** and some of the possible major priorities for the macro-regions: decontamination, transport, energy efficiency, the adaptation to and fight against the climate change, amongst others that could be defined in the future.

In this frame, the JAP of the Bologna Charter aims to contribute in defining, for its part, the common challenges to be addressed and the actions to be implemented, especially in mitigating risks related to climate change effects and urban pressure along the Mediterranean coasts, and in indicating the way how to deal with, through the promotion and strengthening of the cooperation between Med coastal Administrations.

In the short term and as a second step towards emerging Macro-Regional Strategies in the Mediterranean (following the ongoing implementation of the EUSAIR strategy) a **Sea Basin Strategy for the Western Mediterranean** should also be considered as wind of opportunity for strengthening the cooperation starting from maritime affairs. In this sense, the JAP Could contributes consistently to its definition and future implementation.

3. Joint Action Plan framework and approach

3.1. *Joint Actions support regional cooperation and clustering initiatives*

The Administrations involved in the Joint Action Plan represent the **diverse geographical conditions, coastal assets and resources** in the European Mediterranean. The objective of the Bologna Charter to extend the cooperation space also towards the North Africa e Mid East Mediterranean, translated in the invitation to those Administrations in participating in the work of the Bologna Charter Coordination Board (being or not being already signatories of the Charter) pushes subjects already involved in considering also those specific conditions and coastal assets.

There are significant differences between the regions, that come from different competences and coastal territory features (tourism development, urbanisation of the coastal belt, contribution to the regional economies, development of maritime industry and transports, coastal vulnerability, etc.). Moreover, for low-land sedimentary coasts, **sediment stocks represent a strategic resource** and its availability is crucial for all Administrations dealing with coastal erosion, coastal environment and ecosystems preservation, adaptation to climate change and protection of their littorals, together with other type actions in the long term, different from coastal nourishment, and dealing with territorial policy re-arrangement. For cliff and rocky coasts the availability of sediments is less significant (except for cases of pocket beaches) and the coastal Administrations necessarily focus on type of actions mainly dealing with **territorial policy re-arrangement for facing climate change impacts**.

The challenge of coastal adaptation to climate change, for both coastal configurations, it is obviously played in the long term, through an overall reorganization of policies for the management of the territory, from the waterfront to a river basin scale approach. In this perspective, the practice of coastal nourishment, **for low-land sedimentary coasts** (management of coastal sediments and new sediment inflow in the coastal system from off-shore reservoirs) allows the coastal Administrations giving answers in the short and medium term (in a more suitable and environmental friendly way, compared to traditional interventions) to those territorial safety needs that our shores and our citizens manifest, and giving the time to the territorial policies re-arrangement to exert their effects in the long term.

Anyway, even given the different situations and policies to be applied, the following common needs are individuated by coastal managers in the Administrations:

- Reliable and updated surveys and data;
- Researches applied to management issues;
- Innovation in dealing with coastal issues such as safety of population and settlement, loss of territory by erosion, marine ingression and inundations.

Taking into account the scale of the phenomena, the availability of resources and the need of an integrated approach (both for efficacy and economy of actions) the maritime Administrations are called to **join efforts, widen their vision/approach** to a basin scale, **create synergies**, in order to better face the challenges brought by climate change. And this is even more pressing in this period in which, at the European level, they are outlining and launching the **macro-regional strategies** in the Mediterranean (Adriatic-Ionian, West and East Mediterranean) that will contribute to the def-

initiation of the development strategies of the region and to the destination of resources, actions and projects.

Elaboration of themes and topics should start in parallel with the design of the **Regional Agendas** for Policies, Research and Actions in the specific fields. Thus, while the Regional Agendas define the priorities for research- or policy-driven clusters in the partner Administrations, the inter-regional Joint Action Plan comprises the activities where the Administrations work together – either one to one or all regions together – to develop and to achieve the goals of the Macro-Project, outlined in the Bologna Charter, within the new programming period of Structural Funds.

3.2. Widening the approach and unlocking Research & Innovation and market potentials in the Mediterranean

The JAP and the Macro-Project, to which the JAP is referring to, aim to contribute in **creating the basis for a wider approach**, among maritime Administrations, to face and manage together the coastal and maritime issues in the Mediterranean, considering their interactions and their inter-dependencies, with an integrated vision and, thus, with the formulation of adequate integrated policies in coastal and maritime management and planning.

The **JAP outlines a program with Joint Actions** (action lines) to be translated into projects inscribed in the overall strategy introduced by the Bologna Charter (Marco-Project) and to be implemented (start ending 2014 for the period till 2023) by submitting them in EU and international funding programs calls or by direct financing procedures, depending on the nature of the specific initiatives.

The JAP, in the Mediterranean area, aims to:

- unlock potentials in Research & Innovation, towards environmental friendly and ecosystem-based solutions in the field of coastal adaptation, protection and integrated management in coordination with maritime spatial planning;
- unlock potentials of coastal nourishment market through the fostering of interregional coordinated programs at a larger scale than the one of a single Administration, in order to optimise interventions, to reduce operational costs thus optimising the use of financial resources, laying the opportunities for new jobs creation.

The JAP shall play a major role in the knowledge/technology-based maritime and Mediterranean coastal economies. The demand arising of these innovative interventions by maritime public Administrations, today diffuse also in the Mediterranean but born in the North sea and developed in other areas of the world, determined an arise of knowledge and innovation needs in technologies, specific for the Mediterranean basin and adequate for its characteristics in terms of operational techniques and capabilities.

The **research and development of adequate/new technologies and techniques** in survey, monitoring and modelling of littorals and sea bottoms (erosion phenomena, sediments stocks individuation and characterisation, coastal and marine dynamics, environmental and ecosystems conditions, etc.) and in designing and realising devices and interventions suitable for the diverse ecological and morphologic conditions in the different sea basins, according to the ecosystem approach, could give a strong impulse to the economy and job creation in the Mediterranean community.

This without taking into account the benefits, in the economic development, in an enhanced environment, wellness for the local communities and attractiveness of territories, that derive by the ensuring of an adequate level of safety of the coastal zones through a careful and continual intervention and management policy.

An important factor for achieving this goal is the involvement of the **Scientific community and the entrepreneurs** in the R&D activities, through a research-driven cluster. This requires new innovative thinking across sectors and across disciplines. Furthermore, a strong commitment in the regions is needed for implementation of the Joint Actions. The project activities are based on close consultation with the key regional stakeholders and connecting the joint activities to the regional priorities defined in the Regional Agendas. This way the JAP and the whole Macro-Project can strengthen the role of Mediterranean regions in contributing to the “Blue Growth”, to innovation and to the overall competitiveness and vitality of the Med area.

Through the implementation of the Joint Action Plan and the whole Macro-Project the partners network can represent a reference group to be taken in consideration in the macro-regional strategies definition as well as for other European platforms and policy deliberations.

4. The COASTGAP Joint Action Plan

Throughout former initiatives carried out during previous MED European projects (**MedGovernance, Coastance, Maremed**), the Macro-Project has gradually taken its shape until its formal inclusion into the “Bologna Charter 2012”.

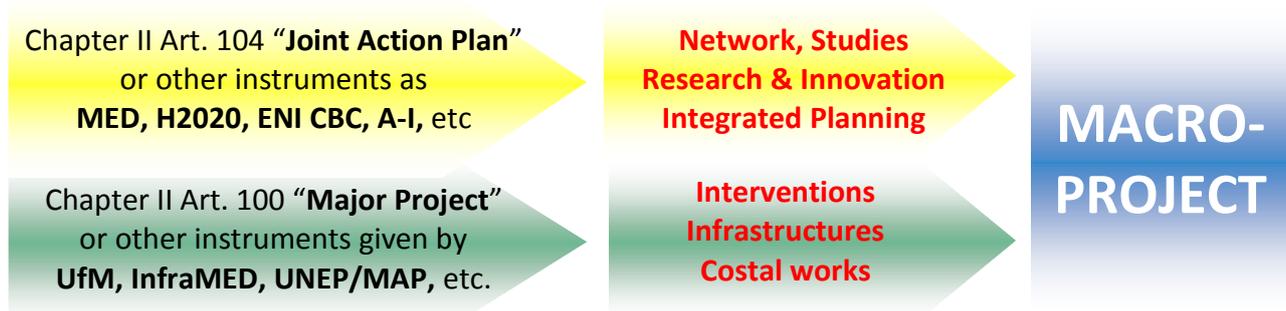
The MED Capitalisation Call, launched in 2012, offered the opportunity to setup the project COASTGAP, aimed to gather and mainstreaming many best practices and in particular two strategic ones: the “Bologna Charter 2012” itself and the proposal of the Macro-Project.

The Joint Action Plan is benefiting and will benefit in its developing phase of the scientific contribution and support from the Italian Flagship Project on marine and maritime research “RITMARE”, through a specific Memorandum of Understanding signed in October 2013.

Currently doesn’t exist an European initiative shaped at a macro regional level, as the Macro-Project outlined in the Bologna Charter, and the best way found to achieve this objective for 2014-2020, was based on these points:

- 1st phase: Macro-Project capitalization into the COASTGAP European project by preparing a **Joint Action Plan**, i.e. the specification of the main envisaged actions/projects of the Macro-Project and methods to deploy them, sharing it among a wide Mediterranean partnership. Such an instrument is defined as well into the Regulation 1303/2013 (Art. 104 “Joint Action Plan”) and it *“comprises a project or a group of projects, not consisting of the provision of infrastructure, carried out under the responsibility of the beneficiary, as part of an operational programme or programmes”*.
- 2nd phase: JAP finalisation and development of its actions/projects, while preparing the infrastructural part of the Macro-Project by a number of **Major Projects**, or integrated initiatives like that, each of which including *“a series of works, activities or services intended in itself to accomplish an indivisible task of a precise economic or technical nature which has clearly identified goals”*. Also this kind of instrument is described into the Regulation 1303/2013 (art.100 “Major Project”) and represents the infrastructural part of the overall initiative.
- 3rd phase: JAP conclusion and Major Projects approval and implementation

The whole **Macro-Project** can be then developed by joining the two parts prepared in the above mentioned phases according with the typology of the two instruments foreseen by the EU Regulation EU 1303/2013 (*“...common provisions on the ERDF, ESF, Cohesion Fund, EAFRD and EMF...”*) or (when not feasible or suitable) with other appropriate instruments and initiatives.



In relation to these instruments (like Major Projects and Joint Action Plan), the Macro-Project is endowed with important peculiarities because:

- It turns also to **other potential financial resources** beyond the Structural Funds;
- It means to **gather and develop experiences** coming from different European/international programmes as well;
- It funds its action on the cooperation of many actors of a specific area, **addressing prototypical macro-regional policies**;
- It needs different and more advanced agreements between the European Commission, Member States and other Mediterranean coastal Administrations, the latter being the main promoter and beneficiary of the initiative

The Joint Action Plan of the Macro-Project is then going to be designed in 2014, thanks mainly to the COASTGAP Med project, on the grounds of the Bologna Charter network, to other running projects (e.g. MEDSANDCOAST ENPI-CBC programme), to FACECOAST cluster and also through a specific Coordination Board activated within the Working Group on Integrated Maritime Policy of the IMC-CPMR.

4.1. Main Actions, Main Project-Lines and Strategic Themes

The main actions were already encompassed into the MACRO-PROJECT outlined in the Bologna Charter 2012", hereby reported as they are in the official document:

1. to build a **network of the existing coastal Observatories - EURIOMCODE** proposal initiative (European Interregional Observatory for Mediterranean Coastal Defence) - aimed to identify common standards in coastal survey activities harmonised with the INSPIRE Directive, analyse coastal morphological dynamics in the Mediterranean, share monitoring services, find a common structure consistent with the principles of cost-effectiveness and efficiency and more suitable for the participant Administrations, and promote the establishment of specific structures, if needed, at local and regional level for coastal monitoring, the management of coastal zone risks and erosion phenomena, defence interventions and sediment stocks management in coastal areas;
2. to survey **erosion status and flood hazard along the Mediterranean coasts - EUROSION-MED** proposal initiative promoted by a number of coastal Public Administrations with the support of the European Commission - in order to update and upgrade the experience acquired in relation to all European coasts (EUROSION 2002-2004), in a more detailed way so that it could be suitable for territorial planning at a regional level and compliant with the Flood Directive (2007/60);
3. to promote the **sustainable use of the strategic resources like the coastal territory** to face the "littoralization" process, respond to the needs of a sustainable coastal urbanisation and integrated planning along with ICZM Protocol for the Mediterranean;
4. to individuate, characterise and promote the **sustainable use of the strategic resources like the coastal and submarine stocks of sediments** to face the coastal erosion and Climate Change, also favouring new commercial relationship between all Mediterranean countries;
5. to foster **integrated territorial planning**, where necessary, along with the principles of Integrated Coastal Zone Management and Maritime Spatial Planning, stated in the Recommendation 2002/413/CE and COM(2008)791 and subsequent related European provisions,

- in order to ensure the sustainable development of coastal zones, landscape protection, coastal adaptation and risk prevention also in relation to a harmonic development of the initiatives promoted by the present Charter;*
6. *to design and execute **structural works along Mediterranean coasts** consistently with the above-mentioned integrated planning processes, for the concrete implementation of an adaptation policy to the natural and anthropogenic risks of the coastal zones and promote the rehabilitation of the coastal territories for sustainable growth.*
 7. *to foster **project-clustering initiatives** like “FACECOAST – Face the challenge of climate change in the Mediterranean coastal zones”, launched within the Capitalisation process started by the European MED Program, in order to strengthen cooperation among Regions, Coastal Administrations, Universities and other stakeholders, maximizing results and favouring potential synergies.*

These main actions are expected to be put into effect by the following specific main project-lines:

1. Survey and monitoring before, during and after the foreseen actions through the institution of a network of Mediterranean Observatories (EUROpean Interregional Observatories for the Mediterranean COastal DEfence – **EURIOMCODE**).
2. Characterization of Mediterranean coasts under the profile of their morphological stability and resilience (exposition to erosion, flood hazard, subsidence, etc.) at a territorial scale to allow an aware and integrated planning of the coastal zones (**EUROSION-MED**);
3. Research, characterization and assessment of the coastal and marine (off-shore) sediment resources in the Mediterranean region to allow a sustainable recovery of the coastal sediment balance (**RESAM**);
4. Environmental strategic assessment of the plans for sediment resources exploitation and sustainable coastal protection (**ENVICOAST**);
5. New legal tools, regulations and agreements needed for the coastal spatial planning and governance provided by the integrated management of the coastal resources represented by the territory itself and the sedimentary stocks (**COASTGOV**);
6. Reliable and shared elements for Regional Master Plans finalized to the sustainable growth of the coastal zones in coherence with coastal adaptation policies to CC and Local Plans for the Integrated Coastal Zones Management of the Mediterranean (**COASTGROWTH**);
7. Research activities in the field of innovative and customized technologies and solutions for coastal protection and to connect JAP actions and activities to the main research projects and frameworks at national and international scale (**COAST R&I**);
8. Design and implementation of protection/adaptation priority works for a sustainable coastal growth based on proper actions against the natural and anthropic coastal risks and consistent with the ICZM principles (**MAJOR COASTAL PROJECTS**);

The implementation part of the 8th point represents the infrastructural component of the Macro-Project and will be tackled on the 2nd and 3rd phase. Anyway, all the projects of the JAP will consider the final need of putting in practice their results by specific integrated coastal works.

The capitalization of this scheme of actions/projects for their mainstreaming, requires a specific organization into the JAP that should not be considered simply as a “group of projects”. The need of a clear framework of relationship between the coastal Administrations and the scientific exper-

tise to be widely engaged, requires a structure like a Regional Framework Operation² with **Strategic Themes** for its implementation.

Looking to European objectives and programmes 2014-2020 and after several regional consultations held to share priorities for an efficient international cooperation within the JAP, **4 Strategic Themes** have been pointed out:

- ST1. Developing knowledge, network-based monitoring and data management systems
- ST2. Sustainable use of strategic resources for the blue growth of the Med coasts
- ST3. Research and innovation in coastal sustainable development, protection and adaptation
- ST4. Response to challenges driven by climate change

These four Strategic Themes are common for the participating Administrations in developing their response strategy to climate change for coastal and maritime adaptation and management. These can be considered also the action lines of the Joint Action Plan, where joint activities (on research, knowledge, resources, strategies, management, adaptation and other activities) will be initiated.

4.2. Strategic Theme n. 1 - Developing knowledge, network-based monitoring and data management systems

The JAP aims to set-up a permanent coastal and maritime knowledge network, based on existing local “observatories” (within national, regional or sub regional Structures) and fostering the creation of specific structures, if needed, at regional or local level.

The JAP aims then to build a **network of Observing structures**, sharing common/comparable standards in coastal and maritime monitoring and surveys, common/comparable indicators for supporting coastal and maritime management and preservation actions and for evaluating coastal and marine dynamics and erosion phenomena.

Particular actions of the network will be focused on the evaluation of **Mediterranean coasts status** and in terms of **erosion phenomena and coastal risks** and to the survey of littorals and sedimentary balance and sea bottom to individuate and **evaluate sediment deposits suitable for coasts nourishment**.

Moreover it is foreseen the development of an **integrated Mediterranean Interoperable Spatial Data Infrastructure** for the Mediterranean on coastal data also as a condition for the reliability of coastal indicators and the environmental assessment procedures and as a common and reference platform to support networking on needs, policy implementation, best practices, stakeholder involvement, etc..

Thus, several project-lines focusing on this strategic topic will be proposed and launched at the Mediterranean level involving maritime Administrations, Universities, Research Centres, international Organisations.

² “RFO is a strategic cooperation between a group of regions, formed for the joint development of new approaches in regional development policy on a limited number of topics and joint priorities. This strategic framework can be considered as a kind of “mini-programme” where the regional partners can select sub-projects to be funded.” (INTERREG IIIC programme).

- ST1A. Identification of common standards in coastal survey activities harmonised with the INSPIRE Directive, analyse coastal morphological dynamics in the Mediterranean, share monitoring services, find a common structure consistent with the principles of cost-effectiveness and efficiency and more suitable for the participant Administrations, and promote the establishment of specific structures, if needed, at local and regional level for coastal monitoring, the management of coastal zone risks and erosion phenomena, defence interventions and sediment stocks management in coastal areas (EUROpean Interregional Observatories for the Mediterranean COastal DEfence - **EURIOMCODE**), with a particular action line on the realisation of a Mediterranean Interoperable Data Infrastructure for Coastal Data and Indicators for Environmental assessment procedures;
- ST1B. Morphological stability characterization (exposition to erosion, floods, etc.) of the Mediterranean coasts at a territorial/regional scale to allow an aware planning of the coastal zones through an integrated management approach (**EUROSION-MED**)
- ST1C. Research, characterization and assessment of the coastal and marine sediment resources in the Mediterranean region to allow a sustainable recovery of the coastal sediment balance (**RESAM**), this project line can have the following sub-projects:
- ST1C1. Marine sediment borrow site investigation on the Mediterranean Continental Shelf
- ST1C2. Coastal stocks of native sediment investigation and management for beach nourishment (SICELL)
- ST1C3. River basin, dikes, deltas management for a feasible sediment transport recovery
- ST1C4. Methodologies for exploitation and management of marine sediment borrow site
- ST1D. **Mediterranean Interoperable Spatial Data Infrastructure (MISDI):** Select, organise, standardize and make accessible interoperable spatial data for coastal management and marine spatial planning in the Mediterranean according to the INSPIRE Directive 2007/2/CE, and to other relevant policies. All the data (maps, indicators and tools) will be shared and exchanged through a geonodes network (MISDI) that will allow scientists, practitioners and decision-makers to work together in an interdisciplinary way and at different spatial scales (local, national and regional) and to foster the implementation of relevant policies. Actions and products identified in ST1A, 1B and 1C are directly linked with the development and deployment of a Mediterranean Interoperable Data Infrastructure for Coastal Data and Indicators for Environmental assessment.

4.3. Strategic Theme n. 2 - Sustainable use of strategic resources for the Blue Growth of the Med coasts

A systemic and strategic approach (in space and time) and new solutions are needed to respond to climate change in coastal areas and to the increasing anthropic pressure and “littoralization” phenomena, which aggravates general phenomena as land take, soil sealing, loss of biodiversity. It must be fostered the concept of the **coastal territory as “strategic resource”**, for the wellness and socio-economic development, for the ecosystems and environment preservation and for the safety of inland territories.

In the same way more efforts are needed to change the seasonal trend of the coastal tourism, with the well-known problems that specially affects the small islands.

Through the development of regional territorial master plans, with ICZM approach, built to face the expected CC impacts and integrated with wider MSP plans, it is possible to go beyond the ac-

tual jeopardized approach on Mediterranean coastal protection and management. From the overarching master plan, that looks forward at a wider time scale, several Local Plans can arise applying the principles of integrated coastal zone management.

The JAP proposes actions and projects to foster these concepts along with ICZM principles, with specific aims to enhance the implementation of the ICZM Protocol (Barcelona Convention) in the Mediterranean, and with MSP principles, according to the EU Roadmap (COM(2008)791 final) and the proposed directive on ICZM/MSP (COM(2013)133 final), as it will issue after the consultation phase.

Particular attention will be put on the environmental assessment of plans and programs, in order to check and optimise their compliance and harmonization with an ecosystem-based approach, complementing the primary physical nature of the plan with other existing policies, legislation and instruments.

The focus has to be put also on the **policy options** more suitable, case by case, **for the environmental and strategic recovery of the coastal zones**, which should be considered, even in combination, in the coastal plans formulation (e.g. EUROSION policy options: no intervention; limited intervention; hold the line; managed realignment; move seaward). The decision on policy options to be adopted is site-specific, depending on coastal asset, geomorphological setting, sediment availability and erosion phenomena, as well as on a series of social, economic and political factors.

Being aware of the overall complexity of the coastal assets in the Med area, of the need for a proper management of coastal sediments and of the frequent recourse to nourishment interventions, even combined with other policy options in a comprehensive coastal plan, the JAP is to put a particular focus on littoral and offshore sediments management.

Thus, the JAP promote actions/projects able to boost the coastal defence and protection and the sustainable use of **sediments deposits as strategic resource** for Public purposes in coastal defence, preserving them from other uses. Thus, actions, plans and projects will be dedicated to foster best practices in sustainable management of sediments and to evaluate (also by the means of traditional and novel modelling approaches) environmental impacts induced by activities dealing with sediments exploitation and coastal protection, looking forward in the future considering the use of those non renewable resources.

From a legal standpoint, all these actions need to go through new public-private forms of cooperation for coastal management and development. European professionals of the coastal and maritime tourism point out that the conditions for a Blue growth strongly relate to new contractual models of long term coastal monitoring and maintenance.

The main project lines can be envisaged as follows:

ST2A. Reliable and shared elements for Regional Master Plans finalized to the coastal adaptation to CC and to fight against erosion and consistent Local Plans for the Integrated Coastal Zones Management in the Mediterranean (**COASTGROWTH**):

ST2A.1. Regional Master Plans, following ICZM principles, in connection with local and basin-scale marine and maritime uses;

ST2A.2. Project financing for coastal management;

ST2B. Legal tools and agreements needed for the coastal and maritime zones governance, including the integrated management of coastal and offshore sediments resources (**COASTGOV**); **environmental monitoring Protocols for sustainable sediment management. Protocols for off-shore and littoral sediments stocks sustainable management and exploitation for beach nourishment;**

ST2C. Environmental strategic assessment of policies, plans and programs for coastal adaptation and for sediments sustainable management for coastal protection purposes (**ENVICOAST**):

ST2C.1. EIA procedure for coastal works

ST2C.2. EIA procedure for Continental shelf borrow sediment site exploitation

ST2C.3. Coastal natural assets protection/recovery as strategic issue to face natural risks

ST2C.4. Quantification of ecosystem services of coastal areas

4.4. Strategic Theme n. 3 - Supporting research, innovation clusters and implementation

The JAP will be the engine for an innovation chain. Research and innovation will be a cross-cutting issue along the whole JAP and must provide real added value (better performance, longer durability, higher socio-economic benefits,..) to it.

The implementation of the JAP and its specific Joint Actions and projects will be supported by research activities in the field of innovative and customized technologies and solutions for coastal protection (**COAST R&I**).

This project line has several topics to focus on, e.g.:

- ST3A.1. Improvement of remote sensing techniques and supports, as drones and submarine devices, e.g. advanced use of remote sensing data from Copernicus satellite system (Sentinels) matched with marine LIDAR survey for a broad systematic monitoring;
- ST3A.2. Integrated modelling tools, monitoring systems, data management and decision support systems e.g. coastal hazard assessment through broad and territorial modelling;
- ST3A.3. Analysis and forecast of local climate change and sea level rise scenarios and their effect on the coastline, sediment budgets, ecosystems and habitats;
- ST3A.4. Improvement of sediment moving and handling systems, management techniques and equipment, aimed to design vessels systems suitable for the Med basin characteristics;
- ST3A.5. Technical improvement in characterization and sustainable management of sediment deposits;
- ST3A.6. Design and testing of innovative solutions, technologies, materials for coastal protection;
- ST3A.7. Evaluation in the short and medium-long term of the connections and impacts of intervention on habitats and ecosystems, including the design and study experimental solutions (e.g. “building with nature” approaches)

Such activities will be potentially financed/co-financed in synergy by different frameworks, i.e. Horizon 2020 and the Cohesion Policy Framework, as recommended in the recent EC strategic documents.

Moreover, this Strategic Theme will include two actions aimed at:

- fostering projects-clustering initiatives, for a closer connection among research institutions and research activities and among research institutions and decision-makers;
- assuring a close connection with the new EU Research Programme (Horizon 2020) and other national and international research programmes, in order to promote science-to-policy transfer, lobbying in favour of JAP themes and priorities and promoting the preparation of proposals, with the joint participation of Administrations, Research Institutions, Companies and SMEs.

4.5. Strategic Theme n. 4 - Response to challenges driven by climate change

Following policy options choices aimed at the environmental and strategic recovery of the coastal zones, strategic or major interventions (Major Projects) should be designed in order to upgrade the resilience level and to ensure conditions for a sustainable growth, related to specificity and vocation, of the diverse coastal areas.

The JAP aims also at fostering the design of these kind of interventions, structural works along Mediterranean coasts consistently with the above-mentioned integrated planning processes, for the concrete implementation of adaptation policies to the natural and anthropogenic risks driven by climate change.

To these extent, a specific joint action is foreseen to support the designing of structural works and management solutions, with the above-mentioned aims, and the individuation and activation of adequate financing channels, favouring the collaboration between public, private and scientific community sectors.

These integrated projects will be characterized by a definite ecosystem approach and in particular:

- High adaptation capacity towards evident natural risk (cost/benefit analysis)
- Integrated approach combining social and economic issues

These projects then won't include only coastal defences but as well the infrastructures closely related to, like water-fronts, port arrangements, touristic assets, natural protected areas, etc.

During the development of the JAP design (2014), a number of pilot sites along the Mediterranean coasts (also south and East bank) will be selected in order to propose relevant integrated projects.

4.6. JAP development, from plan to implementation

This JAP horizontal action aims at the financial sustainability through the research of financing streams for the projects to be developed within the 4 Strategic Themes. Private sector, in front of a large scale programmed public investment for the coast defence, can be interested in to co-financing projects of research and development of new technologies.

JOINT ACTION PLAN		Component 1	Component 2	Component 3			
Main Project lines	Implementa-tion back-ground	Management of the JAP	Communica-tion, clusters, diffusion, etc.	ST1 - Developing knowledge, network-based monitoring and data management systems	ST2 - Sustainable use of strategic resources for the Blue Growth	ST3 - Research & Innovation in coastal development and protection	ST4 - Response to challenges driven by climate change.
FACECOAST	COASTGAP	Set up of an organizational structure inside the cluster, provisionally hosted by the running projects	Group of communication initiatives between European projects and other networks (UNEP/MAP, ICM-CPMR, etc.)				
	MEDSAND-COAST		Diffusion of the Bologna Charter and Macro-Project initiative among Mediterranean partners beyond EU				
ST1A. EURIOMCODE	COASTGAP	First agreements between coastal administrative organizations	Connection with FACE-COAST cluster				

JOINT ACTION PLAN		Component 1	Component 2	Component 3			
Main Project lines	Implementation background	Management of the JAP	Communication, clusters, diffusion, etc.	ST1 - Developing knowledge, network-based monitoring and data management systems	ST2 - Sustainable use of strategic resources for the Blue Growth	ST3 - Research & Innovation in coastal development and protection	ST4 - Response to challenges driven by climate change.
	2 nd phase b	Common agreements for specific projects	Connection with relevant networks (CRPM-CIM, Pegaso platform, etc.)	Coastal observatories network implementation (Interoperable Data Infrastructure and INSPIRE accomplishment)		Smart application on ICT; interoperable geodatabases and decision support systems	
	2 nd phase c	EGTC as a final management body		Common structures and promotion of the establishment of specific structures			Data for interventions design and maintenance
ST1B. EUROSION-MED	2 nd phase b			Knowledge and assessment of erosion phenomena, sediment balance and morphodynamic processes	Data for coastal risks planning	Remote sensing technologies (Copernicus)	
	2 nd phase c						Priorities for interventions
ST1C. RESAM	2 nd phase b			ST1C1. Marine sediment borrow site investigation on the Mediterranean Continental Shelf ST1C2. Coastal stocks of native sediment investigation and management for beach nourishment (SICELL)	Coastal and off-shore resources and their characterization	Coastal and marine survey technologies	

JOINT ACTION PLAN		Component 1	Component 2	Component 3			
Main Project lines	Implementation background	Management of the JAP	Communication, clusters, diffusion, etc.	ST1 - Developing knowledge, network-based monitoring and data management systems	ST2 - Sustainable use of strategic resources for the Blue Growth	ST3 - Research & Innovation in coastal development and protection	ST4 - Response to challenges driven by climate change.
	2 nd phase c			ST1C3. River basin, dikes and deltas management for a feasible sediment transport recovery ST1C4. Methodologies for exploitation and management of marine sediment borrow site			
	3 rd phase d						Sediment resources exploitation design for interventions
ST1D. MISDI	2 nd phase b		-	Mediterranean Interoperable Spatial Data Infrastructure (MISDI)			
ST2A. COASTGROWTH	2 nd phase c		Relationship with stakeholders		ST2A.1. Regional Master Plans, following ICZM principles, in connection with local and basin-scale marine and maritime uses; ST2A.2. Project financing for coastal management;	Technologies for a sustainable management of the coastal resources	
	3 rd phase d						Frameworks and priorities for interventions
ST2B. COASTGOV	2 nd phase c		Relationship with UNCLOS, EU and MS legislation		New legal tools for coastal and maritime zones	Innovative solutions for coastal adaptation	

JOINT ACTION PLAN		Component 1	Component 2	Component 3			
Main Project lines	Implementation background	Management of the JAP	Communication, clusters, diffusion, etc.	ST1 - Developing knowledge, network-based monitoring and data management systems	ST2 - Sustainable use of strategic resources for the Blue Growth	ST3 - Research & Innovation in coastal development and protection	ST4 - Response to challenges driven by climate change.
	3 rd phase d						New governance models for coastal areas
ST2C. ENVICOAST	2 nd phase b			ST2C.1. EIA procedure for coastal works ST2C.2. EIA procedure for Continental shelf borrow sediment site exploitation	Sustainable management of resources	Coastal and marine survey technologies	
	2 nd phase c			ST2C.3. Coastal natural assets protection and recovery as strategic issue to face natural risks ST2C.4. Quantification of ecosystem services of coastal areas			
	3 rd phase d						Environmental permitting on plans and projects
ST3A. COAST R&I	2 nd phase b			ST3A.1. Improvement of remote sensing techniques and supports, as drones and submarine devices, e.g. advanced use of remote sensing data from Copernicus satellite system (Sentinels) matched with marine LIDAR survey for a broad systematic monitoring; ST3A.3. Analysis and forecast of local climate change and sea level rise scenarios and	ST3A.2. Integrated modelling tools, monitoring systems, data management and decision support systems e.g. coastal hazard assessment through broad and territorial modelling;	ST3A.4. Improvement of sediment moving and handling systems, management techniques and equipment, aimed to design vessels systems suitable for the Med basin characteristics; ST3A.5. Technical improvement in characterization and sustainable	

JOINT ACTION PLAN		Component 1	Component 2	Component 3			
Main Project lines	Implementation background	Management of the JAP	Communication, clusters, diffusion, etc.	ST1 - Developing knowledge, network-based monitoring and data management systems	ST2 - Sustainable use of strategic resources for the Blue Growth	ST3 - Research & Innovation in coastal development and protection	ST4 - Response to challenges driven by climate change.
				their effect on the coastline, sediment budgets, ecosystems and habitats;		management of sediment deposits;	
						ST3A.7. Evaluation in the short and medium-long term of the connections and impacts of intervention on habitats and ecosystems, including the design and study experimental solutions (e.g. "building with nature" approaches)	
							ST3A.6. Design and testing of innovative solutions, technologies, materials for coastal protection;
ST4A. MAJOR COASTAL PROJECTS	2 nd phase b		Relationship with stakeholders	Priorities	Available resources assessment for a sustainable coastal management		Preliminary master projects
	2 nd phase c					New systems for a sustainable and more efficient coastal defense	Advanced master projects
	3 rd phase d						Executive master projects and its implementation

5. Budget, schedule and financial resources

One of the most peculiar characteristic of the Macro-Project stands on its flexibility on financial organisation. Being an initiative born from a grouping of coastal Administrations, the Macro-Project can count on their own resources but, for the completion of the different phases, needs as well of other funds, mainly for its infrastructural part.

The Macro-Project is then designed to be funded by more European/International programs, according to a suitable articulation, in order to get a budget and time extension adequate to its objectives.



It is possible to design the following implementation steps and the financial tools that can be taken into account for the launching of the Joint Action Plan, keeping in mind the three phases designed for the entire Macro-Project :

1st Phase: Macro-Project capitalization into the COASTGAP European project by preparing the Joint Action Plan, with specification of the main envisaged actions/projects and methods to deploy them, sharing it among the Med partnership.

- a) Thematic and programmatic development of the Macro-Project in a CLUSTER of already existing European initiatives and projects. This is the current phase where the collaboration between running projects is finalized to delineate in the best way the elements of the Macro-Project mainly through the JAP of COASTGAP. The Macro-Project design will be completed by the direct contribution of other European projects specifically focused on capitalisation (MED, ENI, etc.) and the indirect contribution of other projects thanks to clustering action like FACE-COAST, before the end of the financial period 2007-2013;

2nd phase: JAP consolidation (by the end of 2014) and development of its actions/projects, while preparing the infrastructural part of the Macro-Project, thus a number of Major Projects.

- b) Launching of the first five actions (EURIOMCODE, EUROSION-MED, RESAM ENVICOA, COASTR&I) in the context of European programs directly involving the Mediterranean partners (ENI-CBC, H2020, etc.) or with the help of the concerned DGs (Environment, Regio, Research, Mare, etc.). Budget of 5-7 million euro for about 2-3 years. First group of partners (Regions), representing at least 5 countries and a large cluster of strategic entities (other Regions, Universities, Research Institutes, Sector Associations, etc.);
- c) Accomplishment of the first five activities (EURIOMCODE, EUROSION-MED, RESAM ENVICOA, COASTR&I) and start-up of the other projects of the JAP (COASTGOV and COASTGROWTH). Budget of 10-15 million euro for 2-3 years (partially overlapping the previous period). New partners join the first group with different level of participation (active members, observers, etc.) and constitution of a network between public coastal administration (in case a specific European Grouping for the Territorial Cooperation -EGTC) to ensure the continuity of the actions on the grounds of the Macro-Project. A relevant part of the funds for this phase should come directly from the EC (DGs Environment, Regio, Research, Mare, Clima, etc.) or the phase should explicitly be integrated in the ROP (regional operational programmes) for ERDF 2014-2020.

3rd phase: JAP conclusion and Major Projects approval and implementation

- d) Completion of the JAP and start up of the final part of the Macro-Project with the activity No 8 (Major Projects). Budget of about 500-600 million euro to be allocated in 5-6 years (partially overlapping the previous period); activities to be finished within the terms of the 2014-2020 financial period (2023). Structural pilot interventions on about 30-40 Mediterranean coastal zones most exposed to risks of CC on the basis of the studies carried out. The financial coverage can be provided e.g. by structural funds but also UfM, UNEP/MAP, INFRAMED, or the EIB and other tools destined to the work of strategic relevance for the sustainable development of the Mediterranean area.

Annex 1

Adhesions to the Bologna Charter



Regione Emilia-Romagna (I)

Région Provence-Alpes-Côte d'Azur (F)

Collectivité Territoriale de Corse (F)

Decentralized Administration of Crete (GR)

Département de l'Hérault (F)

Dubrovnik-Neretva County (HR)

Junta de Andalucia (E)

Generalitat Valenciana (E)

Region of East Macedonia and Thrace (GR)

Provincia di Crotone (I)

Regione Lazio (I)

Regione Liguria (I)

Regione Marche (I)

Regione Toscana (I)

Intermediterranean Commission of the CPMR

Regione Puglia (I)

Regione Abruzzo (I)

Regione Calabria (I)

Regione Campania (I)

Govern de les Illes Balears (E)

Generalitat de Catalunya (E)

Ministry of Environmental Protection of Israel (IL)

Split-Dalmatia County (HR)

Regione Autonoma Friuli Venezia Giulia (IT)

Ministry of Communication and Works of Cyprus (CY)

Annex 2

Implementation of the Action Plan

THEME 1 - DEVELOPING KNOWLEDGE, NETWORK-BASED MONITORING AND DATA MANAGEMENT SYSTEMS

Joint Action 1.1 Build a network of coastal Observatories - EURIOMCODE initiative (European Interregional Observatory for Mediterranean Coastal Defence)

Challenge: creation of a network of existing coastal observatory structures in the Mediterranean, also promoting the establishment of new structures, if needed, at regional and local level, in order to evaluate and monitor erosion phenomena and other dynamics connected to climate change, exchange of good practices, support the design of surveys and studies in the related fields.

Activities in 2015-2020: Establish links with existing and under development observing systems at regional and sub-regional scales, with ESFRI Research Infrastructures for integrated coastal and long-term ecosystems observation and with EU databases, portals and information systems (e.g. SeaDatanet, Atlas of the Sea, Emodnet, etc.). Link with Copernicus initiatives.

Define protocols for data exchange and management, identify common standards in coastal and maritime survey activities harmonised with the INSPIRE Directive, analyse coastal morphological dynamics in the Mediterranean, share monitoring services, find a common structure consistent with the principles of cost-effectiveness and efficiency.

Outcomes: interregional protocols, common standards, EURIOMCODE network functioning

Joint Action 1.2 Survey erosion status and flood hazard along the Mediterranean coasts - EUROSION-MED project initiative

Challenge: Characterisation of morphological stability of the Mediterranean coasts at a territorial/regional scale (exposition to erosion, vulnerability by floods and marine ingression, etc.) to allow an aware planning of the coastal zones taking into account climate change scenarios through an integrated management approach.

Activities in 2015-2020: identify common standards for erosion phenomena assessment. Define and launch a survey project on erosion and vulnerability of Mediterranean coasts, evaluating also the evolution and sedimentary balance of rivers mouth and deltas in combination with rivers watersheds analysis on "sediment traps". Define and start a monitoring program for a continuous alimentation of the EUROSION-Med geo database.

Outcomes: updated framework of the coastal erosion and vulnerability in the Mediterranean, including rivers mouth and deltas balance. Recommendations/guidelines for coastal erosion and vulnerability evaluation and for coastal sediments correct management. Recommendations/guidelines for enhancing the river solid transport. Indications detail suitable for planning and programming activities by coastal Administrations. EUROSION-Med geo database.

Joint Action 1.3 Individuate and characterise coastal and submarine stocks of sediments suitable for beach nourishment – RESAM project initiative

Challenge: Research, characterise and assess the coastal and marine sediment resources in the Mediterranean region, suitable for a sustainable recovery of the coastal sediment balance.

Activities in 2015-2020: design and launch a research campaign for the individuation and characterisation of sediment resources in the Mediterranean, coastal and sea bed surveys, physical and

chemical characteristics and available volumes assessment, ecosystems evaluation. Define protocols for monitoring and impact assessment of sediments stocks exploitation,

Outcomes: geo data base on sediments stocks suitable for recovery of coastal balance

Joint Action 1.4 Build a Mediterranean Interoperable Spatial Data Infrastructure (MISDI) -

Challenge: The mission of the MISDI is to organize, standardize and make accessible and interoperable spatial data for sharing on an online geoportal, through a network of partners' geonodes, that allow working together, science and practitioners, in a pluridisciplinary way and from different spatial scales (local, national and regional), exchanging data. The goal is to support the overall "network-based monitoring and data management systems" (JAP ST1).

Activities in 2015-2020: further developing the existing coastal and marine SDI. Further integration of geonodes (from new partners, Mediterranean Networks, etc) to improve SDI performance for implementation of various relevant policies as well as EMODNET. The visibility of participating institutions or networks will be enhanced by sharing in a common platform their spatial data and tools for implementation of related policy or other instruments at various scales.

Outcomes: A Spatial Data Hub to service all actions within relevant Strategic Themes of the JAP via a MISDI interoperable spatial data infrastructures supporting other key networks or other initiatives in the Mediterranean.

THEME 2 - SUSTAINABLE USE OF STRATEGIC RESOURCES FOR THE BLUE GROWTH OF THE MED COASTS

Joint Action 2.1 Promote the sustainable use of the coastal territory

Challenge: foster the integrated territorial planning and ICZM Protocol implementation along with the principles stated in the Recommendation 2002/413/CE, ensuring coordination with Maritime Spatial Planning principles and provisions of the Directive 2014/89/EU establishing a framework for MSP; foster the sustainable development of coastal zones, the landscape and marine environment protection, the coastal adaptation to climate change and the risk prevention, facing the "littoralization" process;

Activities in 2015-2020: prepare demonstration projects on ICZM-MSP, design and formulate ICZM master plans activating coordination processes with Maritime Spatial Planning with reliable and shared elements for Regional Master Plans and Local Plans (COASTGROWTH project) individuating elements, subjects to involve and ways of involvement, which coordination mechanisms for ICZM-MSP governance, etc.;

Define legal tools and agreements needed for the coastal and maritime spatial planning including the integrated management of the coastal resources of sediments (COASTGOV project);

Outcomes: ICZM master plans coordinated with MSP, finalized to the coastal adaptation to CC and to fight against erosion and consistent Local Plans. Activation of "vertical" and "horizontal" integration processes and coordination mechanisms with the national level.

Joint Action 2.2 Promote the sustainable use of coastal and off-shore stocks of sediments

Challenge: foster the sustainable and ecosystem-oriented management and use of the coastal and submarine stocks of sediments within coastal defence interventions, also favouring new commercial relationship between Mediterranean countries, creating conditions for a regulated exploitation of sediments stocks in the macro-region;

Activities in 2015-2020: design and formulate ecosystem-oriented management plans of sediments at regional and national levels in littoral and off-shore ambits, for the ordinary maintenance of the beaches (moving within the littoral system) and within intervention of beach nourishment using stocks of sediments from out of the beach system. Environmental strategic assessment of the plans for sediment resources sustainable management for coastal protection purposes (ENVICOST project)

Outcomes: Sediment management plans. Environmental monitoring Protocols for sustainable sediment management. Protocols for off-shore and littoral sediments stocks sustainable management and exploitation for beach nourishment.

THEME 3 – SUPPORTING RESEARCH, INNOVATION CLUSTERS, IMPLEMENTATION

Joint Action 3.1 Foster projects-clustering initiatives

Challenge: strengthen the cooperation between Coastal Administrations, Scientific Community, National Authorities, international organisations, SMEs, private actors and stakeholders, maximizing results and favouring synergies in research and innovation

Activities in 2015-2020: foster clustering of projects and further develop and consolidate existing initiatives like “FACECOAST – Face the challenge of climate change in the Mediterranean coastal zones”, launched within the Capitalisation process started by the European MED Program. Explore the constitution of an EGCT of coastal Administrations.

Joint Action 3.2 Foster innovation in the field of coastal protection and climate change adaptation in the Mediterranean

Challenge: find innovative solutions and technologies for coastal protection and adaptation, for sustainable and ecosystem-oriented management of littoral and off-shore sediments resources, for data management, modelling and monitoring systems.

Activities in 2015-2020: research, design and testing of solutions (also using model-envisaged scenarios), with the joint participation of Administrations, Research Institutions, Companies and SMEs, for the improvement and customization of sediment moving and handling systems, management techniques and equipments, aimed to design a dredge/ship systems suitable for the Med basin characteristics; technical improvements of survey, characterization and sustainable exploitation of strategic sediment deposits; design and testing of innovative solutions, technologies, materials for coastal protection; evaluation of ecosystem effects, connections and synergies, including experimental solutions (e.g. “building with nature” approaches); observing and monitoring systems, data managements and development of decision support systems; integrated modelling tools.

Outcomes: tested solutions and technologies ready to be developed and applied

Joint Action 3.3 Interaction with the new EU Research Programme (Horizon 2020)

Challenge: contribute in the definition of the priorities, in order to make themes and actions of JAP suitable to access the Programme financing. Promote clustering initiatives involving public and private sector, enterprises, research bodies, in R&D projects.

Activities in 2015-2020: individuate areas of the Programme (Societal challenges, Infrastructures, Support to SMEs, etc.) more suitable for supporting the JAP. Preparation of project proposals favouring joint participation of research bodies, Administrations and enterprises supporting adaptive management of coastal systems.

Outcomes: proposals submitted for financing of actions and projects in the field of research and development in coastal protection and adaptation. Science and innovation from research projects supporting and addressing JAP actions.

THEME 4 – RESPONDING TO CHALLENGE DRIVEN BY CLIMATE CHANGE

Joint Action 4.1 Supporting the design of structural works for coastal protection and adaptation to climate change

Challenge: collect a number of coastal works (nourishment, infrastructures, waterfront rearrangement, etc.) shared by bordering or non-bordering coastal Administrations, to be implemented in a coordinated way.

Activities in 2015-2020: survey on needs and framework conditions by different Administrations for coastal adaptation and protection interventions. Share competences and best practices to support the design of structural works.

Outcomes: package of structural works and Major Projects ready to be implemented

Joint Action 4.2 Foster adaptive management solutions and structural works for enhance the resilience of coastal systems

Challenge: create the conditions for the realisation of structural works and management solutions (Major Projects), favouring the collaboration between public, private and scientific community sectors.

Activities in 2015-2020: design of common projects (even combining Major Projects), according with the individuated suitable financing channels, also by diverse sources, for their implementation. Prepare project proposal favouring joint participation of public, private and research bodies.

Outcomes: common design, shared by Administrations, of Major Projects for adaptive structural works and management solutions.

Joint Action 4.3 Individuation, access to and efficient use of funding frameworks

Challenge: ensure adequate financing resources to the JAP and Macro-Project and to the structural works implementation (Major Projects).

Activities in 2015-2020: monitoring EU programs and other funding opportunities consistent with the themes and actions encompassed by the JAP and the Macro-Project, individuation of funding opportunities most suitable for the different actions and projects

Outcomes: proposals submitted for financing of actions and projects, other funding channels activated for the implementation particular strategic actions (Major Projects) or large scale initiatives (i.e. EUROSION-Med, RESAM project, EURIOMCODE)

Annex 3

Major Coastal Projects