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PEGASO Project
People for Ecosystem based Governance in Assessing Sustainable development of Ocean and coast

Funded by the European Union
under FP7 – ENV.2009.2.2.1.4
Integrated Coastal Zone Management

Specific Programme FP7
Collaborative Projects

PEGASO Final publishable summary report

Dissemination Level*	Public
Project Acronym / number	PEGASO 244170
Project title	People for Ecosystem-based Governance in Assessing Sustainable development of Ocean and coast

Authorisation	
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Dates	

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SEVENTH FRAMEWORK PROGRAMME

Acronyms and abbreviations

A

AREA-ED: *Association de Réflexion, d'Échanges et d'Actions pour l'Environnement et le Développement* (Association for Reflection and Action on the Environment and Development - Algeria)

B

BBN: Bayesian Belief Network

BSC: Black Sea Commission (Commission on the Protection of the Black Sea against Pollution)

BSC-PS: Black Sea Commission (Commission on the Protection of the Black Sea against Pollution) Permanent Secretariat

C

CAMP(s): Coastal Area Management Programme(s)

CASE(S): Collaborative Application Site(s)

CIM: Cumulative Impact Mapping

CPMR: Conference of Peripheral Maritime Regions

CVC: Climate Variability and Change

D

DDNI: Danube Delta National Institute for Research and Development (Romania)

DIEC: Data and Information Exchange Coordinator

DoW: Description of Work

DPSIR: Drivers, Pressures, State, Impacts, Responses

DRR: Disaster Risk Reduction

DSS: Decision Support System

E

EC: European Commission

EcAp: Ecosystem Approach

EEA: European Environment Agency

EIA: Environmental Impact Assessment

EU: European Union

EUC: End User Committee

G

GEF: Global Environment Facility

GFCM: General Fisheries Commission for the Mediterranean

GIS: Geographical Information System

GWP: Global Water Partnership

H

HCMR: Hellenic Centre for Marine Research (Greece)

HFA: Hyogo Framework for Action

I

ICZM: Integrated Coastal Zone Management

IFREMER: Institut Français de Recherche pour l'Exploitation de la Mer (French Research Institute for Exploration of the Sea - France)

IMIS: Integrated Marine Information System

IMP: Integrated Marine/Maritime Policy

IOC/UNESCO: Intergovernmental Oceanographic Commission / United Nations Educational Scientific and Cultural Organisation

IRA: Integrated Regional Assessment

IRBM: Integrated River Basin Management

IUCN: International Union for Conservation of Nature

J

JRC: Commission of the European Communities – Directorate General Joint Research Centre

L

LEAC: Land and Ecosystem Accounting

M

MAP: Mediterranean Action Plan (UNEP/MAP)

MEBM: Marine Ecosystem-Based Management

MEDCOAST: Mediterranean Coastal Foundation (Turkey)

MedICIP: Mediterranean Integrated Climate Information Platform

MedWet: The Mediterranean Wetlands Initiative

MHI: Marine Hydrophysical Institute - Ukrainian National Academy of Sciences (Ukraine)

MSFD: Marine Strategy Framework Directive

MSP: Maritime/Marine Spatial Planning

MSSD: Mediterranean Strategy for Sustainable Development

N

NARSS: National Authority for Remote Sensing and Space Sciences (Egypt)

NAFO: Northwest Atlantic Fishing Organisation

NFP(s): National Focal Point(s)

NIOF: National Institute of Oceanography and Fisheries (Egypt)

O

OGC: Open Geospatial Consortium

P

PAP/RAC: Priority Action Programme / Regional Activity Centre

PMA: Pollution Monitoring and Assessment

R

RAC: Regional Activity Centre

RSC: Regional Sea Convention

RTD: Research and Technical Development

S

SAP: Strategic Action Plan

SCA: Stakeholder and Conflict Analysis

SDI: Spatial Data Infrastructure

SEA: Strategic Environmental Assessment

SEMCs: Southern and Eastern Mediterranean Countries

T

TDV: Tour du Valat Foundation (France)

U

UAB: Universitat Autònoma de Barcelona (Autonomous University of Barcelona - Spain)

UfM: Union for the Mediterranean

UM5a: University Mohammed V – Rabat Agdal (Morocco)

UNEP: United Nations Environment Programme

UNIGE: University of Geneva (Switzerland)

UNIVE: Universita Ca'Foscari Di Venezia (Ca'Foscari University of Venice - Italy)

UNOTT: University of Nottingham (United Kingdom)

UPO: Universidad Pablo de Olavide de Sevilla (Pablo de Olavide University of Sevilla - Spain)

V

VIC(s): Virtual Conference(s)

VLIZ: *Vlaams Instituut voor de Zee* (Flanders Marine Institute - Belgium)

W

WMS: Web Map Server

WMIIE: Western Mediterranean Impact Index on Ecosystems

WP(s): Work Package(s)

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Executive Summary

- PEGASO (People for Ecosystem based Governance in Assessing Sustainable development of Ocean and coast) is a collaborative project between twenty-five partners that have co-worked over four years under the lead coordination of the Universitat Autònoma de Barcelona (UAB) to develop common, novel approaches to support integrated policies for the coastal, marine and maritime realm of the Mediterranean and Black sea basins.

- The PEGASO final conference took place in Antalya (Turkey), from the 14th to 17th of January 2014 gathering a wide range of institutes and networks from the Mediterranean and Black Sea and representatives from Integrated Coastal Zone Management (ICZM) initiatives in other regional seas.

- According to the lead partner from the Universitat Autònoma de Barcelona (UAB), Françoise Breton, "the PEGASO project has supported the implementation of the ICZM Protocol in the Mediterranean, and has contributed to the development of similar policies in the Black Sea; it has bridged science and decision-making process along a collaborative process of work".

- The ICZM Protocol to the Barcelona Convention has been the main driver of the PEGASO project. The PEGASO community; ICZM researchers, producers and technicians in different economic sectors, practitioners and decision-makers, NGOs, have worked together to achieve as main outcome a shared ICZM Governance Platform as a bridge between communities of scientists and End-Users, far beyond conventional bridging. The PEGASO ICZM Governance platform has been established as a human network and a forum where people with deep interest in effectively implementing ICZM have shared knowledge and experience, and tested new assessment and management tools. This kind of joint effort based on the ecosystems approach and a collaborative work allows the best options to achieve adaptive management.

- PEGASO has also developed tools to better appraise conflicting issues, responding closely to different articles from the Protocol, focusing on the balance between urban developments versus natural capital maintenance. This reflexion has included the analysis of cumulative impacts of climate change and human activities, risk vulnerability and adaptation (indicators, Land and sea use maps, accounting methods, models and scenarios). Tools have been tested and validated in a multi-scale approach for integrated regional assessment through a number of relevant Collaborative Application Sites for Assessment (CASES). All the tools and methods are fully accessible at the PEGASO website and have served to produce indicators factsheets at different places, and an atlas for the Mediterranean and Black seas.

- Tools are very useful per se, but they have also served to develop participative methods for supporting decision making, facilitating a common understanding of the coastal and marine processes, getting a common understanding of which issues are manageable (or not), and in which way they should be managed, how stakeholders have to collaborate and at which scale, including cross-boundary collaborations. In brief, to assess what are the main priorities today, establishing road maps for actions towards a co-constructed desired future.

- To support the whole PEGASO process, a Spatial Data Infrastructure (SDI), following the INSPIRE Directive, has been implemented to organize and standardize spatial data, that can be shared on an interactive visor, to make it available to the ICZM Governance Platform, and to disseminate all results of the project to the End-Users and interested parties.

- Furthermore, PEGASO has made efforts to establish and strengthen durable mechanisms for networking and capacity development so as to promote knowledge transfer and dissemination (N-S; S-N; N-N and S-S). Special effort has been done for the South and the Eastern Mediterranean and for the Black Sea countries that are extremely motivated and would like to see the PEGASO project continuing, to support their ICZM needs.

- Over the lifespan of PEGASO, the project has mobilised in a successful collaborative-work around a thousand of Mediterranean and Black Sea scientists and stakeholders, both at regional and at CASE levels. PEGASO ends up as an innovative and creative project, which has provided exploratory ways to stakeholders to share common knowledge with scientists. This practice has given a new know-how on exchanging data and speaking together among scientists, decision makers, national and local managers, making these different professional spheres collaborating in a common direction. Demands to continue PEGASO work and spirit from stakeholders are very high. This continuous interaction has created a social energy in PEGASO. The human aspect, the relation between people, motivated to learn from each other, has boosted a creative human, trans-disciplinary and trans-cultural unforgettable experience that has reinforced friendship, confidence and cooperation linkages, named by its partners the PEGASO family. All these PEGASO products, process and spirit have been recognised and this social energy especially appreciated. They should be capitalised in the post PEGASO as the most important human, technical and shared knowledge legacy of the project.

1. Summary description of project, context and objectives

The PEGASO project (2010-2014) had a twofold objective:

- Support the implementation of the Protocol on Integrated Coastal Zone Management in the Mediterranean (ICZM Protocol) and explore similar policies in the Black Sea region;
- Build bridges between science (knowledge) and decision- and policy-making (governance) or, more precisely, make possible scientifically-founded decisions connected with local knowledge and the experiences of field practitioners and stakeholders.
- The project has focused its efforts on these main outcomes: (1) the PEGASO experience for running an operational ICZM Governance Platform for the Mediterranean and the Black Sea (including guidelines and basic rules), (2) technical aspects such as the PEGASO web site, intranet, and the marine and coastal wiki to support the daily work of the PEGASO ICZM Governance Platform; (3) the PEGASO tools and methods, oriented to the construction of a common knowledge and a co-working experience, implemented in the ten PEGASO Collaboration Application Sites (CASES), in the Maghreb sub-region and at regional sea level, with the support of the relevant capacity building programme; (4) the Spatial Data Infrastructure network (SDI), with partners institutions as geo-nodes of the network, and the construction of an interactive atlas for the Mediterranean and the Black Sea. This Infrastructure has re-enforced the PEGASO ICZM human governance platform, allowing sharing of data across all members; (5) Capacity building programme and strategy, including 'polimedia' videos; participatory events and dissemination activities.

The PEGASO ICZM Governance Platform was at the heart of the project and aimed at facilitating communication, dialogue and networking amongst its various members, which included project partners such as scientific institutions and international organisations and scientists (consortium); project end-users recruited from national and international institutions and organisations (End User Committee); and local stakeholders involved in ten "collaborative application sites" (CASES). This was achieved through a process of co-working and learning from each other, sharing knowledge and expertise, and testing innovative tools created under the project.

The National Focal Points (NFPs) of the ICZM Protocol have asked to be part of the PEGASO ICZM Governance Platform at the end of the first year of the project (September 2011), when they participated in the design of the questionnaire for the country stocktaking to evaluate the country preparedness to implement the ICZM Protocol. The Black sea countries have also participated in this successful exercise. It has been agreed at the UNEP-MAP COP 17 in Paris (February 2012) that the PEGASO stocktaking will be used as the template for the ICZM Protocol mandatory reporting by the countries, and its content will serve as the baseline for evaluation of ICZM progress.

The consortium was composed of international and regional institutions, local and regional authorities, research institutes, universities, economic players, and NGOs. This network has been extended much further, through the connections of each partner to include a multitude of formal and informal connections.

Some of the organisations involved in the PEGASO consortium are already cooperating on other projects and running their own networks. Due to its open and flexible approach, the PEGASO ICZM Governance Platform has been since the beginning considered as a hub for initiatives such as: the RAMSAR Convention of Wetlands, the Mediterranean Wetlands Initiative (MEDWET) or the Adriatic-Ionian Commission. It has also attracted and established synergies with many other coastal and marine initiatives, in the first place those in which one or more PEGASO partners were actively involved: UNEP/GEF MedPartnership and ClimVar projects, IPA Adriatic SHAPE project, MAREMED project, the Bologna Charter 2012, FACECOAST cluster and the COASTGAP EUMed project to the aim of organising a regional network and its articulation to the ICZM Governance platform and include the regions as geonodes in the PEGASO SDI, the FP7 MEDINA and PERSEUS projects.

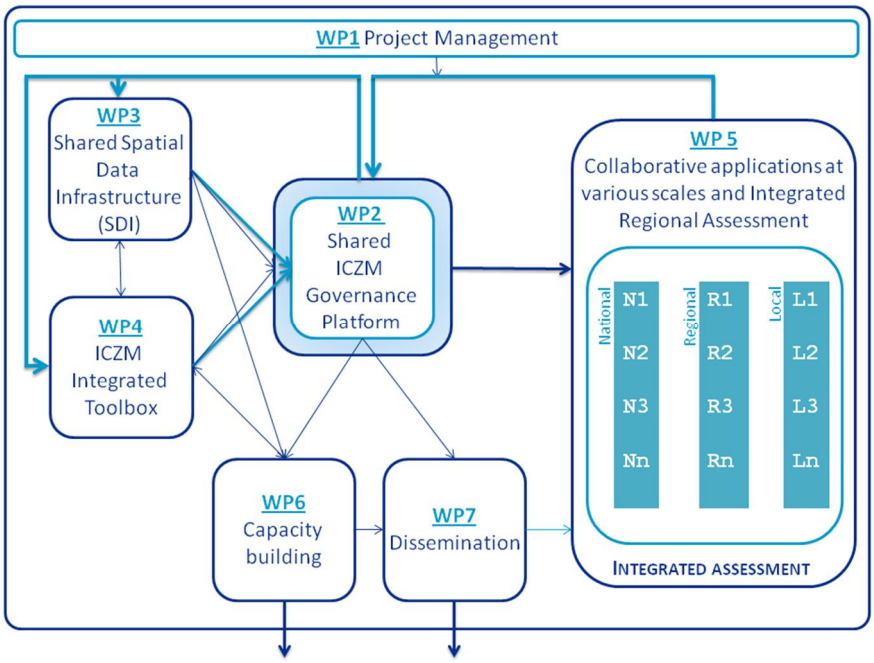


Figure 1: The ICZM Governance Platform at the heart of the PEGASO project

In addition to the "official" members of the platform, all "ICZM addicts", "coast-lovers", and people that want to get involved in making our coastal zones resilient, healthy, productive and attractive, are invited to join the PEGASO team and contribute through their knowledge and experience.

The ICZM Governance Platform primarily consisted of people, comprising approximately 150 persons working in the organisations involved in the project, a panel of renowned Mediterranean stakeholders (End User Committee) representing international organisations, national and regional authorities and several key sectors of the economy (e.g. tourism, aquaculture), members of the Black Sea Commission and approximately 800 people involved in the 10 CASES and in the Maghreb region (led by Algeria).

Figure 2: The 10 Collaborative Application Sites, the PEGASO CASES

The CASES have reinforced the idea that the implementation of the Protocol is a priority. They have shown their potential to become the “bottom-up component” of the project.

To facilitate the work of the ICZM Governance Platform, the building of a shared knowledge has been one of the main PEGASO effort for building an ICZM conceptual framework, as well as a PEGASO tool box that includes innovative products such as relevant indicators linked to the ICZM Protocol, land cover maps for the whole Mediterranean and Black sea riparian areas at different dates, land and ecosystem accounts focused on urban trends and the evolution of natural capital at the coast and at sea, with the production of a Cumulative impact mapping for the Western Mediterranean, scenario and foresight participative methods, economic valuation, etc.

All the PEGASO products have been co-produced with the end users, to be useful to the implementation of the ICZM Protocol and to give food for thoughts; PEGASO has acted as a think tank to make the ICZM Governance Platform working. The use of the tools (e.g. Land and sea uses, indicators, foresight exercises, etc.) to describe the present state of environment, with maps and statistics in a very user-friendly way, has rendered possible a social reflexion on the main present and future threats, their main drivers, and how shared decisions should be made to manage these hot issues. The participative process allowed co-working on main responses to be given at different scales, and the co-construction of the future wanted.

A parallel technical network has been constructed to support the share of data, and build a common knowledge: the PEGASO Spatial Data Infrastructure and an interactive Mediterranean and Black Sea Atlas have also been produced.

Main lessons learned expressed by PEGASO CASES, PEGASO partners and end users are a good indicator of the social energy that has passed across the PEGASO ICZM Governance platform.

PEGASO legacy is important, and takes into account:

-The human legacy, the PEGASO people with its motivation, spirit of collaboration and social energy, the PEGASO family;

-The technical legacy (website, coastal and marine wiki, intranet and virtual forums) that has supported the daily exchanges and collaborative work of the PEGASO ICZM Governance platform;

-The common knowledge legacy: PEGASO tools and methods, to build a common knowledge for **a** collaborative work. Tools and methods, as well as other relevant data and information, are embedded into the spatial data Infrastructure (SDI) and its network of geo nodes for data exchange and data sharing, and the production of the Atlas for the Mediterranean and the Black Sea.

-The strategy of the PEGASO capacity building programme is strongly focused towards learning by doing, supporting the ICZM concept and the collaborative work of the PEGASO ICZM Platform, training for getting capacity to test the PEGASO tools and to use them, to be able to develop indicators, participative methods, etc in every places, preparing people to be trainers of their colleagues, having capacity and autonomy to conduct by themselves an ICZM full process.

-Preparing the future of PEGASO is an important issue to keep the project legacies alive after the end of the project. The PEGASO business Plan makes a number of proposals and recommendations for sustaining the ICZM Governance Platform, as well as the main PEGASO products and spirit.

2. A description of the main S&T results and foregrounds

Given both rapid changes and uncertain outlook all around the world, particularly in coastal areas, which are facing serious human-made pressures, decision-making has to be driven by systemic analysis of current priority issues and changes to the main drivers, and also the best practices and lessons learned from experiences of sustainable management of coastal zones. Conventional science and academic research are not enough to achieve this overall objective. A ‘new science’ or ‘science of sustainability’ is required, which must be more

operational and better linked to management and policy challenges, where information, decisions, and their assessment are built and shared between scientists, practitioners, decision-makers and civil society.

Most ICZM initiatives have, more or less successfully, tried to actively involve stakeholders. However, ICZM initiatives have been primarily short-term in nature as their lifespan is determined by cyclical funding. Many of the benefits of partnerships and shared knowledge have been lost in this way. The PEGASO ICZM Governance Platform goes one step further towards achieving more comprehensive and sustainable collaboration with end-users, exploring several methods for collaborative work. This platform built on common knowledge and understanding during the project duration (2010-2014) and was designed to continue being operational beyond that period.

2.1 The PEGASO ICZM Governance Platform

Article 14 of the ICZM Protocol for the Mediterranean requires the development of new governance models built on partnerships and participatory processes. In accordance with this article, and in order to improve the integrated management of the Mediterranean and Black Sea coastal zones, participation and capacity building activities are the fundamental conditions for the development of an ICZM Governance Platform.

Basic principles guiding the development of the ICZM Governance Platform are provided in the ICZM Protocol itself. Two main principles behind the entire endeavour are explicitly stated in several of its articles: i.e. Article 6, point (d), which stipulates that “appropriate governance allowing adequate and timely participation in a transparent decision-making process by local populations and stakeholders in civil society concerned with coastal zones shall be ensured”, or Article 15, point 3, by which the Parties undertake to provide for interdisciplinary scientific research in order to “further knowledge of integrated coastal zone management, to contribute to public information and facilitate public and private decision-making”.

The PEGASO ICZM Governance Platform has been designed to foster communication among Mediterranean and Black Sea stakeholders; discuss their needs and support discussion of priority issues within the ICZM Protocol and ICZM in general; ensure common understanding and use of project tools and methods; facilitate data and information sharing; better understand the scientific and pragmatic rationales of the tools offered; and build a shared knowledge base for different scales and places in the two regions.

The overall PEGASO process was based on the principles of scientists, stakeholder and end-user participation, motivation and commitment in order to work in collaboration together and decide on the best options for adaptive management.

Figure 3: Bridging two pillars of ICZM, knowledge and governance, for efficient decision-making

"*Coastal zones are complex systems where environmental, social and economic issues are inextricably entangled. Each case is both a unique issue and part of a more general problem, and decision-makers cannot rely on "off-the-shelf" solutions.* (…)

Discussions about ICZM are still generally held in high level forums with only national representatives, but a significant part of ICZM projects is implemented at local level, and many sectorial stakeholders, who are potential end-users, are not represented in these forums and cannot express their needs and views. I expect PEGASO to become an operational and informal forum where all potential actors of ICZM at all levels can meet and communicate, share problems and responses, and formulate common questions for scientists" (Christophe Le Visage, End User Committee, Interview, May 2010).

The PEGASO ICZM Governance Platform has enabled scientist and end-user communities to share knowledge, data and information, case studies, local experiences, good practices, insights and policy recommendations, in order to build a common understanding of the issues and institutional perspectives affecting coastal zones in the two regional seas. It is the human legacy of PEGASO.

2.2 A conceptual framework for ICZM

The partners' diversity in the PEGASO consortium allowed for an extensive survey to compile information from all the countries bordering the Mediterranean and Black Seas, and to explore new forms of trans-disciplinary thinking and working required to face the challenges of coastal sustainability.

The PEGASO partners produced a general compilation and comparison of sustainable development approaches. Subsequently, they highlighted the common sustainable development concepts and frameworks between several strategies, protocols, directives, etc. Particular attention was paid to build a common understanding of the scope and intention of the ICZM Protocol, and its relationship to other contemporary policy initiatives regarding the coastal, marine and maritime realms.

The collected and analysed elements were organised in a set of innovative, clear and synthetic tables, easy to read yet covering the overall strategic vision developed.

The Conceptual Framework document describes the principles on which ICZM is based and its relationship to other conceptual frameworks such as sustainable development, the ecosystem approach, ecosystem services and integrated water and river basin management. The relations between ICZM and MSP are also analysed. It also describes the development of policy based on ICZM in the Mediterranean and the current status of these ideas in the Black Sea.

The aim of this Conceptual Framework has been to set out the background to the ICZM PEGASO Governance Platform that is a key outcome of the PEGASO project. It is suggested that the Platform must be seen as a forum that enables experience to be exchanged between practitioners and researchers at regional, national and local scales. It must also serve as a vehicle by which the institutional changes necessary for the successful implementation of ICZM can be encouraged.

2.3 The stocktaking activity: Legal, institutional, and organisational frameworks for ICZM in the Mediterranean and Black Sea countries

One of the main tasks of PEGASO's shared ICZM Platform was to carry out a benchmark assessment of the current state of ICZM in Mediterranean and Black Sea countries, as required by Article 16 of the ICZM Protocol for the Mediterranean. In September 2010, the Black Sea Commission Permanent Secretariat (BSC-PS) agreed to adopt this approach for the Black Sea basin. Stocktaking for ICZM was then carried out in a comparable way for both the Mediterranean and the Black Sea countries, with a review of current ICZM-related legislative, institutional, policy and financial frameworks.

A draft questionnaire was prepared by PAP/RAC (Priority Action Programme/Regional Activity Centre) and involved broad consultation, including a workshop with National Focal Points (NFPs) for the ICZM Protocol in the Mediterranean, held in Portorož, Slovenia, in September 2010. The Mediterranean NFPs subsequently validated the Mediterranean questionnaire, whilst the Advisory Group (AG) on the Development of Common Methodologies for ICZM validated the questionnaire on behalf of the Black Sea Commission, also in September 2010.

In the Mediterranean, the stocktaking made an important contribution to the Barcelona Convention system in terms of providing initial guidance on drafting the official UNEP/MAP reporting format for the ICZM Protocol and a baseline for measuring progress in implementing the Protocol.

Early results of the stocktaking were also instrumental in informing the action plan for the implementation of the ICZM Protocol for 2012-2019, which was officially adopted by the 17th Ordinary Meeting of the Contracting Parties to the Barcelona Convention (COP 17) in 2012.

For the Black Sea, the ICZM AG members advised using the regional stocktaking synthesis report as the basis for the ICZM part of the report on the implementation of the Black Sea Strategic Action Plan (SAP), due in 2014-2015.

As a proposed follow up actions, during COP 17 the Contracting Parties decided to update the data gathered through the stocktaking questionnaire bi-annually. Therefore, this report on the stocktaking is the baseline for measuring future progress in the implementation of the ICZM Protocol.

2.4 PEGASO tools and methods

The PEGASO project sought to achieve "*the proactive and adaptive management of coastal zones, which encourages all interested parties to work together on specific coastal issues, and provides the appropriate institutional, legal and societal setting that enables horizontal and vertical coordination as a guarantee that the most appropriate solutions will be adopted for the managed areas*" (Breton and Skaricic, 2013). Members of the ICZM Governance Platform, "*with their different interests and their need for sharing ideas, exchanging good practices and discussing how to translate ICZM Protocol articles into action, find their best expression through collaboration, in a cross-boundary setting, with common objectives and similar methods*" (Ibid).

The ICZM Governance Platform can be considered both as a network and as a tool. Moreover, it has produced in a collaborative way the following S&T tools for assessing the sustainability of coastal and marine ecosystems:

- **A core set of indicators** to assess the progress of the ICZM process as well as the state of the coast, following the different articles of the ICZM Protocol has been produced. Indicator factsheets have also been designed and completed with the necessary data at regional scale and in different CASES at sub regional or local scales, evaluating when needed the data gaps (WP4).
- The PEGASO set of ICZM indicators do not only serves as a descriptive, but also analytical tool for the understanding of the coastal system, being it a region (the Mediterranean or the Black Sea), a country or a local coastal area. The challenge is to perform an integrated assessment, or to develop a storyline, also at the level of the indicator assessment, both qualitative and quantitative. To achieve this, cross-linkages between indicators are proposed: between Indicators of Sustainable Development and Indicators of Governance, between Driver, State, Pressure, Impact and Response indicators, cross-cutting issues, themes and sectorial objectives. Particular attention needs to be paid to the cause-effect relationships and to the processes that define these relationships at the scale at which the analysis is conducted.

Figure 4: List of PEGASO indicators factsheets

- **Ecosystem accounting for the coast and the sea:** A framework for multi-scale ecosystem accounting in the Mediterranean and Black Sea basins was produced in PEGASO. This task consisted of three sub-tasks, namely Land and Ecosystem Accounts (LEAC), Sea Ecosystem Accounts (SEAC), and the Western Mediterranean Impact Index on Ecosystems (WMIIE). These three components contributed towards a holistic vision of the changes in the quality and quantity of the stocks and flows in the coastal zone and the pressures that drive them.

  The three sub-tasks focused on developing methods that can be used by end-users and stakeholders to quantify changes in coastal ecosystems. The concept and methods of LEAC was extended to the entire Mediterranean and Black Sea basins for two time periods. A cumulative pressure index for the Western Mediterranean was produced, to develop and test a method for sea ecosystem accounting.

- A key achievement of this task was the production of the PEGASO first prototype land cover map for the coastal zone of the Mediterranean and Black Sea basins. Another significant result was the construction of a complementary framework for sea ecosystem accounting using seascape ecology techniques. Finally, a cumulative pressure index was created for the Western Mediterranean Sea. Training videos presenting the concepts and explaining the method and results were produced for all three components. UNOTT and UAB teams have done this work.

- Lessons learned: One of the main lessons learned is that the PEGASO land cover (PLC) will need more detailed validation work in the post-PEGASO phase, using high resolution remote sensing data in the areas with potential errors and local expert knowledge to have a final updated and high quality data set for the two basins. Once the methodology is consolidated, it will be easy to repeat the exercise every 2 or 5 years.

- A shortcoming of SEAC was the lack of time-series data to create a full ecosystem account. This lack of data limited the testing of the tool to a single snapshot of the current stocks and flows. The time-consuming nature of an expert survey was a significant lesson learned for the Western Mediterranean Impact Index on Ecosystems (WMIIE).

- Proposed follow-up actions: The availability of benthic habitat maps was the main limiting factor for producing sea ecosystem accounts and extending the impact index beyond the Western Mediterranean. As this data becomes available, so it can be used to test SEAC and WMIIE beyond the initial study.

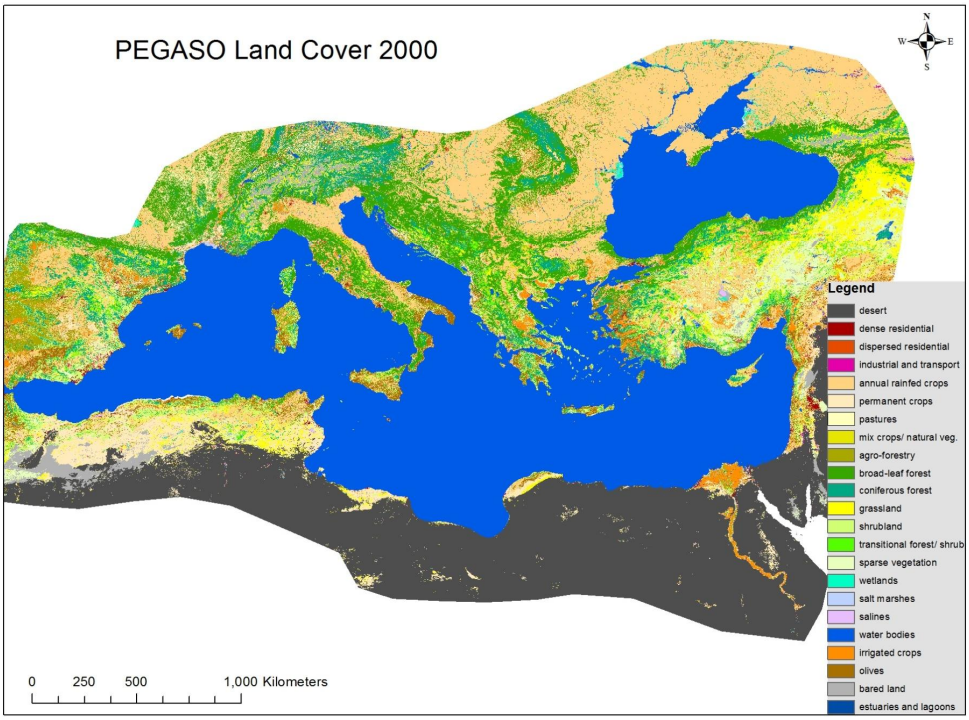


Figure 5: PEGASO first prototype land cover map for the Mediterranean and Black Sea basins

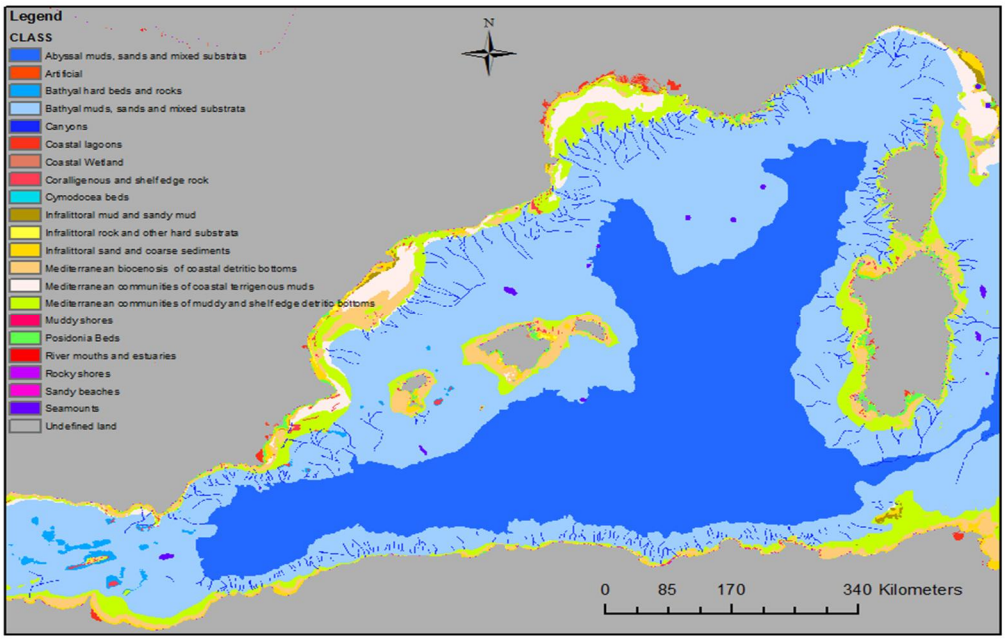


Figure 6: Example of the ecosystem mapping for the Western Mediterranean

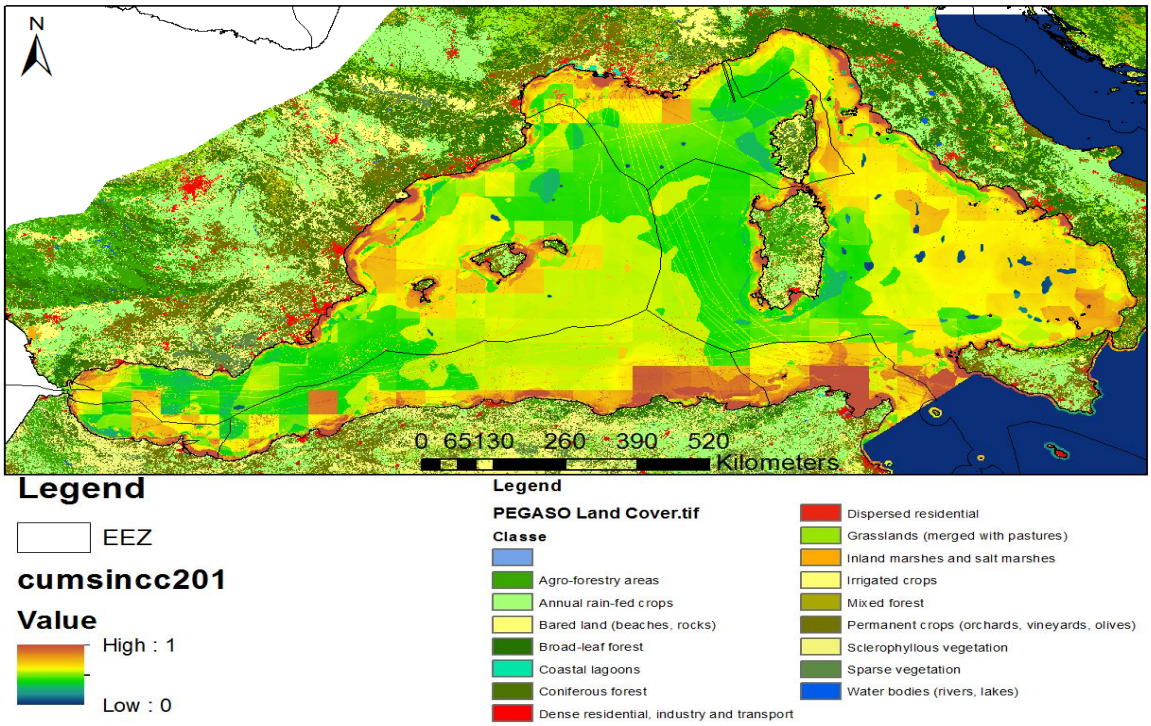


Figure 7: Western Mediterranean Impact Index on Ecosystems, WMIIE

- **Participatory methods, scenarios, envisioning and foresights exercises**: PEGASO provided valuable lessons about the role of science and the need for a multidisciplinary and multicultural science, which can better work in collaboration with decision-makers and practitioners, in order to bridge the gap between science and policy. This integrated vision is necessary to build ICZM goals into an ecosystem-based framework, linking land and marine environments. It is not an easy process as it requires a change in the way scientist and decision-maker communities are organised. Indicators for assessing 'good science' should change, requiring not only peer review, but also the evaluation of its usefulness by decision-makers and end-users. The roles of PEGASO end-users and the co-working process have helped conceive this way of building common knowledge that includes useful scientific knowledge, but also traditional knowledge and field expertise, etc.

Figure 8: Building BBNs at the Rabat Workshop, Day 2

- The PEGASO project organised three 'Envisioning Workshops': for the Mediterranean in November 2012 in Arles (France), for Black Sea countries in December 2012 in Istanbul (Turkey), and finally for both basins during the 3rd General Meeting in March 2013 in Rabat (Morocco). These participatory workshops were designed to allow members of the ICZM Governance Platform to discuss the barriers and opportunities facing those affected by the implementation of ICZM, and to better understand how PEGASO data and tools can be used in an integrated way.
- Feedback provided by members of the End User Committee about the PEGASO Regional Meeting held in Rabat (Morocco) in March 2013 illustrates the usefulness of such an approach. The "What if…?" exercise, based on Bayesian Belief Network (BBN) methods, conducted in Rabat was highly appreciated because it brought together local stakeholders and scientists from the PEGASO CASES, researchers and experts from the PEGASO consortium and members of the End User Committee. It was recognised that such a 'collective expertise' has much more impact on decision-makers and on the decision-making process than the simple juxtaposition of opinions and expert judgements from their specific fields.
- BBN was also used at national level to capture the vision of 150 stakeholders and high government officers on the urban trends along the Lebanese coast and search for possible agreed responses (June 2013-January 2014). It was also applied in a local site, the Dalian protected area, in Turkey. Focus has been placed on how to stop the degradation of natural capital and enhance it (October 2013-January 2014).

What about collective expertise?

"*Collaboration and co-working between researchers and stakeholders leads to collective and cross-cutting expertise. Collective expertise prevents some experts and scientists from being too forward in others' fields. Participatory exercises* (e.g. What if…?) *based on collective expertise prevent decision-makers – who have often made their decisions before receiving scientific advice – from relying on disagreements between scientists in order to denigrate scientifically-founded advice.* (…)

Freelance consultants, engineering firms or other bodies/organisations could/should have a specific interface (go-between) *role in order to strengthen dialogue between scientists and decision-makers. This role needs to develop specific skills in order to adapt scientific information to make it suitable for decision-makers. 'Scientific language' has to be simplified in order to submit clear messages to decision-makers. Most members of the End User Committee could play this role of interface between scientists and decision-makers who are interested in ICZM*" (Christophe Le Visage, End User Committee, Interview, March 2013).

Foresights exercises were conducted in Egypt (December 2013) amongst high-level officers and scientists with the aim of defining best scenarios for the sustainability of the great lakes of the Nile Delta at the face of huge threats (e.g. Sea Level Rise, shrinking of the lake surfaces because of illegal appropriation of parts of the lakes for aquaculture, new planned dam in Sudan with effects on the water and sediment discharges on the Delta, and higher salinization trends expected, the population factors, etc. It was the first time they could have a dialogue together. The successful results brought the opportunity to design with the Egyptian scientists and stakeholders, a EuropeAid proposition, which is presently building up.

2.5 Spatial Data Infrastructure (SDI) and interactive atlas for the Mediterranean and the Black Sea

Creation of a shared SDI to support access to data and information in an attractive web portal, building local geonodes in several institutions to share interoperable data (WP3); the network of local 'geonodes' built under WP3. Together with the SDI, they provide for the management and exchange of harmonised data.

Sharing results with stakeholders and end users at different spatial scales has been a major objective of the PEGASO project. The rationale behind the development of the PEGASO Spatial Data Infrastructure (SDI) was to construct the tool by drawing on existing SDIs developed by project participants (for instance Vlaams

Instituut voor de Zee and EnviroGRIDS) and to support the creation of new geonodes to expand online data sharing and allow access to coastal zone management indicators.

This connected infrastructure for sharing spatial data based on ICZM principles was developed in several stages. First, capacity-building activities were established to support the construction of a functional network of geonodes; then the existing geonodes were connected in and access was provided to data from core institutions such as the European Environment Agency; and finally local/regional or national geonodes were developed jointly where requested by stakeholders.

The creation of the PEGASO SDI was a collaborative project that required every partner institution to contribute either by developing a local geonode or by providing the results of indicator calculations.

The SDI is a practical online tool that acts as a central repository for geographical information on coastal features and issues. Since partners understand the benefits of SDI, they are more willing to share data and contribute datasets, which are easily accessible through the web portal.

The PEGASO SDI has three main components: a map viewer, map services and a spatial catalogue. This infrastructure has been created at the Autonomous University of Barcelona (UAB) within PEGASO working package WP3 led by Pablo Olavide University (UPO), Seville.

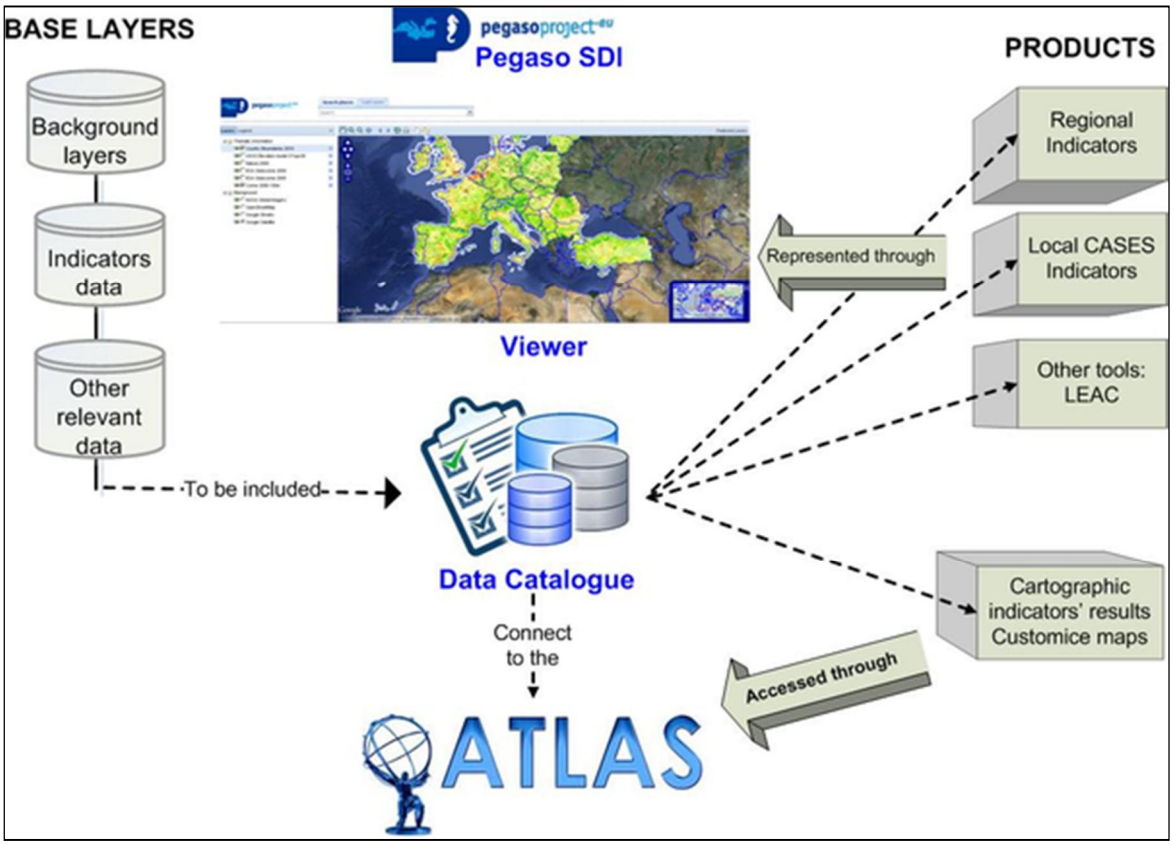


Figure 9: Implementation of the PEGASO Spatial Data Infrastructure (SDI)

"*Every provider of geoinformation has to provide [geonodes] using an Internet geoservice. This can be achieved by using a Web Map Server [WMS], with Standard connections based on OGC [Open Geospatial Consortium] specifications. These services will allow users to access visualise or download geoinformation via a WMS Client (under conditions defined by the provider). A provider can have one or more Web Map Servers,*

each containing several Services. The different services have to be described by the corresponding Services Metadata, which will be published in a Web Catalogue. Every geoinformation provider has to be considered a "node" within the network of Web Map Servers which form a particular SDI [Spatial Data Infrastructure]".

http://www.coastalwiki.org/coastalwiki/Geonode;
http://www.PEGASOproject.eu/index.php?option=com_content&view=article&id=11&Itemid=25).

All PEGASO tools and data used to produce them are embedded into the SDI and can be viewed through the atlas. All information is fully accessible through the PEGASO website.

2.6 The Integrated Regional Assessment (IRA): the results of the participatory work of the PEGASO ICZM Governance Platform to assess through all PEGASO products the main threats and expected responses in the Mediterranean and the Black Sea

The Integrated Regional Assessment' (IRA) is one of the project's key final products (Deliverable D5.2). During the 2013 COASTDAY celebration in Rimini (Italy), hosted by the Regional Minister for Land and Coastal Protection of Emilia-Romagna, two PEGASO meetings were organised: the workshop with end-users on Integrated Regional Assessment (22-23 September) and the meeting with PAP/RAC NFPs during which several project products were presented and discussed: i.e. the Conceptual Framework for ICZM, set of PEGASO indicators, SDI and ICZM Governance Platform.

"Co-working sessions" with scientists and end users of the PEGASO project

During a 2-day meeting held in Rimini (Italy) on 22-23 September 2013, directly before Mediterranean Coast Day organised by PAP/RAC, "co-working sessions" with PEGASO partners and end-users aimed to bring together active members of the PEGASO EUC to discuss the preliminary results of the IRA, with particular reference to the indicators calculated at local (CASES) and regional levels, and to develop insight into policy responses and guidelines to implement ICZM in the Mediterranean and Black Sea.

Discussion focused on main threats for the Mediterranean and Black Sea and how these threats impact the coastal zone. The presentation of several (methodology and results) tools informed a discussion on policy instruments to respond to the main issues identified and governance aspects. A reflection on the proposed methodology and the usefulness of the 'PEGASO integrated toolbox' to support decision-making for ICZM has been developed, in line with one of the main PEGASO principles, which is to work in a collaborative and participatory manner. Final discussion was linked to the preparation of the PEGASO Closing General Meeting (Antalya, Turkey, 14-17 January 2014) and explored possible ways of sustaining the ICZM Governance Platform after the end of the project (February 2014).

According to Pablo Ávila Zaragoza (Andalucía, Spain), the PEGASO IRA should provide: (i) tools for a more efficient and effective decision-making process; (ii) an overview of the current situation in which key issues related to the uses, land use, affections to the environment, and trends are identified; (iii) a set of indicators to visualise trends and aspects to be redirected for the implementation of the ICZM Protocol.

"*The PEGASO IRA will be used by many different end-users, with skills in many different domains* (…), *so an effort should be made to adapt to the different needs and interpretations.* (…) *Another aspect to take into account at regional scale is the differences between EU countries and North African and non-EU countries in sharing regulatory standards and rules concerning ICZM* (…). *The PEGASO IRA could be an excellent tool to identify and assess these differences in order to reduce them* (…)" (Ibid, Interview, April 2013).

Mihail Costache (Romania) gave the following feedback about the PEGASO IRA: "*The PEGASO IRA provides a tool for a more effective decision-making process and better understanding of the impact of human activities on coastal ecosystems. The PEGASO IRA could be used by many different end-users, from different domains* (…). *The regional nature of the IRA should be also stressed for the identification and assessment of differences between EU and non-EU countries – in terms of the legal aspects of ICZM and other issues concerning coastal zones"* (Interview, May 2013).

Christophe Le Visage (France) was particularly interested in the relationship between IRA and the evaluation of integrated policies: "*IRA seems very close to evaluation in many ways: a "policy-oriented assessment" must be very close to "policy evaluation". Evaluation is a difficult challenge for integrated policies, at all stages: Ex-ante, when it comes to try and forecast the effects of the planned actions; during the policy cycle, and; Ex-post, after a policy cycle has been completed, when the outcomes and results are compared to the vision and initial objectives, before revision (of the policy actions, or objectives, if they proved unrealistic).* (…) *If IRA can produce integrated assessment and indicators related to integrated policies, it will indeed contribute to bridging the gap between scientists and decision-makers, and more generally between knowledge and decision*" (Ibid).

The PEGASO work has highlighted some of the main concerns regarding marine and coastal ecosystem. These ecosystems provide valuable natural capital for the economy of the Mediterranean and Black Sea regions. However it is evident that goods and services are being yielded unsustainably in some areas, with irreversible detriment to the health of ecosystems. Of particular concern are land-based pressures associated with densely populated areas where urbanisation is unbalanced. In order to optimally profit from the wealth of natural capital, there must be a better balance of activities in marine and coastal zones. There needs to be an ecosystem-based approach to science and governance, using integrative tools, such as Marine Spatial Planning, SDI, Land and Ecosystem Accounting, CIM/WMIIE, Indicators, Indices, and scenarios.

2.7 Summary

PEGASO can be considered an ambitious policy-oriented project, which is innovative and perhaps even pioneering due to the many aspects described below:

- PEGASO has supported the most recent Protocol adopted by the Contracting Parties to the Barcelona Convention - the ICZM Protocol for the Mediterranean, and helped Black Sea countries to explore possibility and opportunity of developing similar instruments;
- PEGASO has worked both in the Northern and Southern shores of the Mediterranean basin, and also in the Eastern part of the region, including the Black Sea basin. The project has taken into account differences between countries and regions, in terms of scientific background, ICZM experiences and instruments and the culture and governance framework in general;
- PEGASO has built an ICZM Governance Platform, which brings together scientists, decision-makers, end-users and any stakeholders, working at different levels, from regional to sub-regional, national, and local. Time scales were also considered in "envisioning" exercises to better understand the existing socio-ecological system and how it will evolve, which new threats are expected to emerge, and how and to what extent drivers can be managed in the land and marine parts of coastal zones;
- PEGASO has developed several tools within a 'toolbox' that was collaboratively built, tested and applied in ten pilot sites (CASES). A core set of ICZM indicators was defined to address the specific requirements of Article 27 of the ICZM Protocol, in order to "*define coastal management indicators*" and "*establish and maintain up-to-date assessments of the use and management of coastal zones*";
- PEGASO has built a Spatial Data Infrastructure (SDI), which complies with Open Geospatial Consortium (OGC) standards and the INSPIRE Directive. It has contributed to interactive information sharing, ensuring that spatial data was well organised and standardised;
- PEGASO has considered CASES not to be simple 'case studies', but instead 'open laboratories' where scientists and stakeholders have worked together to reach a common vision and understanding

(communication and interaction, taking into account stakeholder needs and expectations regarding useful tools to run the ICZM process);

- PEGASO has developed cross-cutting views between CASES that are very different, unique, and complex with regard to several aspects such as policy framework, types of ecosystem (wetlands and deltas, islands, urban vs. natural areas, protected areas), geographical scales, and levels of socio-economic development.

The platform has supported the publishing of information and discussions and virtual conferences on various tools and methodologies, including indicators, scenarios, Geographic Information Systems (GIS), Land and Environmental ACcounting (LEAC), cumulative impact mapping, socio-economic assessments, participatory methods, and prospective exercises.

The ICZM Governance Platform aimed to contribute to a shared understanding for a more desirable and sustainable future in the two basins. The platform sought to help the implementation of future policies under the Barcelona Convention and Bucharest Convention, and also contribute to real transformation within governance structures, which is a long-term requirement of these two Regional Sea Conventions (RSCs).

Cooperation between the two regional seas was an important part of the PEGASO project and ICZM Governance Platform itself. By improving collaboration with the RSCs, the scientific community could better take into account policy needs, especially at regional level. The cross-regional approach took into account a variety of scales, from basins (regional) to pilot studies (subnational/local).

Therefore, the ICZM Governance Platform can be considered both a tool and network to be fed into by partners and a limited number of external users, but with the intention and perspective of becoming a publicly available platform and an ICZM infrastructure for the Mediterranean and Black Sea, including stakeholders from countries, regions, municipalities, economic sectors, NGOs, etc.

All these participatory process, reflexion and results from tools and methods have been oriented towards the making of a collaborative assessment, the PEGASO IRA.

Intensive effort has been done in PEGASO to have an efficient capacity building programme, serving the purposes of the PEGASO ICZM Governance Platform. The programme is explained in paragraph 3.

The work of the human ICZM governance platform is supported by a technical website, an intranet and a marine coastal wiki that is explained in the paragraph 4.

3. The potential impact (including the socio-economic impact and the wider societal implications of the project so far) and the main dissemination activities and exploitation of results

3.1 Impacts of the PEGASO ICZM Governance Platform

- **Behaviour changes**: In general terms, the experimental work of the PEGASO ICZM governance platform has had strong impacts on the way people understand ICZM process and the ICZM Protocol. It has been for all participants a continuous building of capacities and learning process towards a change in behaviour (e.g. learning to hear the others, to discuss on scientific basis together, to understand most conflictive issues, the different interests and test methods and concept to assess them in an objective/scientific based manner, looking at what should be the common will, learning negotiation methods to arrive to a common agreement for management priorities, in an ecosystem based framed ICZM and MSP, learning to use the PEGASO tools and methods to produce a common assessment). Change in behaviour was a key result linked to the PEGASO ICZM Governance Platform collaborative work, and the lessons learned by participants enhanced this aspect, amongst many others.

-This collaborative work and the construction of a shared knowledge have been the focus of the **PEGASO**

capacity building program, whose strategy was oriented to "learning by doing" and also "training trainers". So that the conditions for launching or continuing an ICZM process can follow and reproduce in each municipality, region and country, understanding the need for cross boundary actions when needed and the need of dialogue across institutions and scales.

"*I believe PEGASO is the "fuel" to the "engine" that keeps ICZM implementation running. EU policies and UNEP/MAP protocols take a long time to be implemented. PEGASO provides tools for decision-making, not only to accelerate the process, but to ensure that decisions are made on the basis of real data and up-to-date information. The decision-making process is more effective and sustainable under these conditions*" (Pablo Ávila Zaragoza, End User Committee, Interview, March 2013).

According to Mihail Costache (Romania, Ministry of the Environment and Climate Changes), Member of the PEGASO End User Committee, this project for coastal managers and ICZM practitioners has the following added value: it provides tools for decision-makers based on the data and information acquired through stakeholder participation; integrates the capacity for setting up a participatory approach for coastal zone management supported by high quality of information and data; and promotes tools and methods that could be extended across coastal areas.

- **PEGASO has brought an important support to the initiatives carried out under the Regional Sea Conventions**.

In addition to the ICZM Protocol for the Mediterranean, the PEGASO project has offered indirect and implicit support to other policy instruments and regional initiatives looking at links between ICZM and the EU Marine Strategy Framework Directive (MSFD), the 'Ecosystem Approach' (EcAp) developed under the auspices of UNEP/MAP, and the 'Strategic Action Plan for the Environmental Protection and Rehabilitation of the Black Sea'.

- PEGASO has also worked with the Adriatic-Ionian Commission, on its demand, participating to their meetings, orienting the PEGASO work towards their needs (e.g. Analysis of the Marine Protected Areas (MPAs) in the Adriatic, looking at the MPA management schemes and their relation with ICZM, developing research on governance in the Adriatic MPAs, and supporting Slovenia in the preparation of the pillar III of the EUSAIR initiative for the Adriatic-Ionian Strategy.

PEGASO and ICZM in the Mediterranean

"*Through international agreements such as the Barcelona Convention and its ICZM Protocol, the Mediterranean has been at the forefront of thinking about approaches to integrated management in the coastal zone*" (PEGASO Deliverable D2.1C). The ICZM Protocol came into force on 24 March 2011 and is the 7th protocol of the Barcelona Convention, which was adopted in 1976 by the 21 Mediterranean riparian countries and the European Commission, as Contracting Parties. This protocol is a crucial milestone in the history of the Mediterranean Action Plan (UNEP/MAP). This unique legal instrument is intended to help countries better manage their coastal zones, and deal with the emerging coastal environmental challenges, such as climate change.

"Now that the ICZM Protocol is in force, Mediterranean countries are entering into a new era of inter-sectorial cooperation for development, based on a tailor-made approach for shaping sustainable solutions that take into account the local and regional needs. With the ICZM Protocol, we finally have a legally binding instrument in our hands to CHANGE existing development planning practices that neglect the benefits and services provided by ecosystems in Mediterranean coastal regions. This is a historic challenge and we need to start promoting good practices" (Mitja Bricelj, End User Committee, Interview, December 2010).

"*The PEGASO project seeks to support the implementation of this innovative legal document by offering equally innovative scientific, technical and governance tools and options*" (Breton and Skaricic, 2013).

PEGASO and ICZM in Black Sea countries

The ICZM Protocol for the Mediterranean is also seen as a source of inspiration for strengthening ICZM in Black Sea riparian countries, under the auspices of the Commission on the Protection of the Black Sea Against Pollution (Black Sea Commission / BSC). "(…) *the key difference between the Black Sea and the Mediterranean is the lack of a legally enforceable agreement on ICZM. The Advisory Group* (established in 1996) *on the Development of Common Methodologies for Integrated Coastal Zone Management in the Black Sea does just that; it develops approaches, drafts guidelines, seeks to strengthen cooperation and facilitates co-operation. Its activities are designed to support the work of the Black Sea Commission by advising on such things as the development of regional ICZM policies and strategies, devising and promulgating codes of conduct in the coastal zone, disseminating good practices at the regional level. It is also charged with advising on the development of 'appropriate indicators for comprehensive description of the status of the Black Sea coast and for the efficiency of the ICZM process and activities'. Part of the work being undertaken in PEGASO is to reflect on the experience in the Mediterranean and help stakeholders in the Black Sea consider what future measures are needed to build on what has already been achieved.* (…) *The Black Sea Convention also established a Permanent Secretariat to coordinate activities leading to the implementation of the Convention*" (PEGASO Deliverable D2.1C).

The MSFD aims to achieve Good Environmental Status (GES) for EU marine waters

The Marine Strategy Framework Directive (MSFD) is the environmental pillar of the EU Integrated Maritime Policy (IMP), which is designed to achieve the full economic potential of oceans and seas in harmony with the marine environment. It was adopted on 17 June 2008 by the European Parliament and Commission (with total unanimity of the 27 Member States), and has since been transposed into the national legislation of each EU Member State.

The overarching aim of the MSFD is to ensure the sustainable exploitation of natural resources, in order to maintain or achieve biodiversity, and keep the European seas clean, healthy and productive. The MSFD aims to effectively promote the EU marine environment. Its goal is to achieve Good Environmental Status (GES) for EU marine waters by 2020 on the basis of 11 qualitative descriptors, and protect the resource base upon which marine-related economic and social activities depend.

The MSFD aims to achieve or maintain the GES of the marine environment by 2020 at the latest via the five following complementary steps: EU Member States have to (i) produce an initial assessment of the current environmental status (2012), define (ii) GES and (iii) environmental objectives with associated indicators (2012), on which (iv) monitoring programmes (2014) and (v) programmes of measures (2016) will be based.

The MSFD establishes European marine regions on the basis of geographical and environmental criteria. Each Member State, in cooperation with other Member States and non-EU countries within a marine region, is required to develop strategies for its marine waters. The marine strategies to be developed by each Member State must contain a detailed assessment of the environmental status, a definition of GES at regional level and the establishment of clear environmental targets and monitoring programmes.

"*The goal of the Marine Strategy Framework Directive is in line with the objectives of the 2000 Water Framework Directive which requires surface freshwater and ground water bodies - such as lakes, streams, rivers, estuaries, and coastal waters - to be ecologically sound by 2015 and that the first review of the River Basin Management Plans should take place in 2020*" (European Commission, *A Marine Strategy Directive to save Europe's seas and oceans*).

The EcAp initiative implemented under the auspices of UNEP/MAP and with the support of the EU

In 2008, the Contracting Parties to the Barcelona Convention (all riparian countries and the European Commission) recognised the need to better protect ecosystems by gradually applying the ecosystem approach to the management of human activities that may affect the Mediterranean marine and coastal environment. They decided that UNEP/MAP should gradually implement the process known as Ecosystem Approach (EcAp)

in view of an ecological vision for the Mediterranean as a "*healthy Mediterranean with marine and coastal ecosystems that are productive and biologically diverse for the benefit of present and future generations*".

This vision is divided into three strategic goals:

- *Protect, allow recovery and, where practicable, restore the structure and function of marine and coastal ecosystems, thus also protecting biodiversity, in order to achieve and maintain good ecological status and allow for their sustainable use.*
- *Reduce pollution in the marine and coastal environment so as to minimise impacts on and risks to human and/or ecosystem health and/or uses of the sea and the coasts.*
- *Prevent, reduce and manage the vulnerability of the sea and the coasts to risks induced by human activities and natural events.*

A roadmap for the implementation of EcAp has been created. It spans over 10 years, from 2010 to 2019, and consists of several subsequent steps, which in addition to the vision and strategic goals, provide for (i) the assessment of marine and coastal properties and pressures, including a socio-economic analysis, (ii) the development of ecological and operational objectives and their respective indicators, (iii) the definition of GES and targets, (iv) the revision of monitoring programmes to take into account the agreed Environment Assessment indicators as appropriate, and, finally, (v) the implementation of the necessary management measures and programmes to achieve GES. The Ecosystem Approach has been recognised as the overarching principle of the UNEP/MAP's 5-year Programme of Work, which is hence applicable to all the MAP's Protocols, including the one on ICZM. At global level, the EcAp initiative will convey the Mediterranean contribution to the "Regular Process for Global Reporting and Assessment of the State of Marine Environment, including Socio-Economic Aspects" established by the Resolution of the UN General Assembly and Law of the Sea, in application of the Ecosystem Approach principles.

- **PEGASO has encouraged incipient change of mentality in non-EU countries to adapt to EU policies and guidelines**: It is a challenge for the southern countries to adopt EU policies that are not mandatory in their territories (coast and sea). However, through the dissemination and common understanding of the ICZM Protocol and the Ecosystem based framework approach, there is an incipient change in mentalities and a common understanding is building up about the socio-economic advantages of sharing a basic common monitoring, guidelines and dialog to manage better the marine and coastal areas, with a systemic view of the whole territory from catchments, coastal areas and sea, including also the rear country. PEGASO work has intended to take these different pieces and to integrate them in the full picture needed to manage well ecosystems that have no border. The relation amongst environmental health and a better life for coastal population has been also part of this innovative work and the building of an incipient common understanding.

-Along a four years project, it is impossible to pretend to change stakeholders' behaviour and mentalities in depth. However, **seed conditions have been planted by PEGASO work and the demand is there**, especially in the Black Sea, in the South and East Mediterranean, and in the Balkans: Work should continue, especially focused on these areas.

- **PEGASO has produced Innovative tools**. Amongst them, a **new prototype of land cover map (PLC)** for the coastal areas of all riparian countries of the Mediterranean and the Black Sea should be highlighted. The establishment of a proper classification system for assessing landscape changes in the whole area as well as the method to be used (e.g. remote sensing imagery, validation method, etc) has represented a big challenge for PEGASO, as this particular work had never been done before. The land cover data base has been produced at two dates, 2000 and 2011, allowing the construction of statistics to account for land cover and land use changes (e.g. urban trends, trends in natural assets, accounted in hectares).

- Continuing similar work from land to sea has been one of the major challenges of the PEGASO toolbox construction. In the coastal land and catchments, the different land cover classes could be detected using satellite imagery. But the seabed ecosystems cannot be mapped following the same method. PEGASO has used existing data from EUSEAMAP, where models have been developed to make a map of habitats of the seabed in the Western Mediterranean, following EUNIS classification. Using complementary data, from bibliography and research projects, a map of ecosystems, habitats and species has been produced for the Western Mediterranean associated to a sea use map. They have represented the basic information to

understand which ecosystems and habitats received pressures from the different activities (land based and sea based), agreeing through expert judgement on an index representing the cumulative impacts by multiple stressors (including climate) affecting each ecosystems and habitats (The Western Mediterranean Impact Index on Ecosystems, WMIIE).

- The objective was twofold: 1) **to produce a continuous mapping of the land-sea territory and uses**, map of the stressors and ecosystems, habitats and species affected by the pressures, developing an impact index socially validated through the ICZM Governance Platform of PEGASO; and 2) **to explore Land and sea ecosystems accounting methods**.

Even though it has been difficult to reach such objectives, these innovative materials (the land cover map and the Cumulative Impact Index (WMIIE)) can be easily upgraded getting better resolution and quality. They also are useable right now to build indicators for the ICZM Protocol, and for other policy needs (e.g. EcAp process initiative of the UNEP/MAP, indicators and maps as a basis for MSP, etc.).

- **Going towards a Data sharing system**, which make freely available and accessible all data from the project in the web site through a common visor, in an interoperable way, PEGASO work allows countries and regions to focus on basic monitoring needs, exchange of information amongst them, encouraging further collaborative work to assess the socio-environmental status of the coast and the sea. All this process organised in a scientifically based quality frame (e.g. same methods for data quality check, for meta-data, following EC INSPIRE directive) supports the good information basis needed for agreed collective decisions.

-The PEGASO ICZM Governance Platform has used all these products, in a collaborative manner.

The European Commission (EC) defines ICZM as "*a dynamic, multidisciplinary and iterative process to promote sustainable management of coastal zones. It covers the full cycle of information collection, planning (in its broadest sense), decision making, management and monitoring of implementation. ICZM uses the informed participation and cooperation of all stakeholders to assess the societal goals in a given coastal area, and to take actions towards meeting these objectives. ICZM seeks, over the long-term, to balance environmental, economic, social, cultural and recreational objectives, all within the limits set by natural dynamics. 'Integrated' in ICZM refers to the integration of objectives and also to the integration of the many instruments needed to meet these objectives. It means integration of all relevant policy areas, sectors, and levels of administration. It means integration of the terrestrial and marine components of the target territory, in both time and space*". Source: CEC Communication 2000/547 ICZM.

Integration in a coastal management context is a major challenge and its complexity is reflected in the many horizontal and vertical implications it has, for the well-known integration aspects within ICZM:

- Integration between sectors;
- Integration between disciplines;
- Integration between levels of government;
- Integration between land and water parts of coastal zones;
- Integration between nations.

Two additional aspects should be added as a result of the lessons learned from PEGASO:

- Integration between spatial and temporal scales in a problem-oriented framework, to better conceive the multiple consequences of the impacts and their cumulative, synergistic or dissociated effects on ecosystems and territories, in order to better identify their drivers and how they can be managed at different scales. Some drivers cannot be managed, in which case adaptive practices are needed to mitigate their effects;
- Integration of different sources of knowledge to represent the diversity of backgrounds, individual psychological functions and social and cultural points of view, and to understand why these are so different and why a consensus cannot be reached, when this is the case. Visions of reality are complex and are due to different experiences and contexts for cognition and learning.

Reconciling land and sea areas within coastal zones…

According to Christophe Le Visage (France), Member of the End User Committee, "(…) *many – if not all – issues are not local or short-term and require cross-cutting approaches. Water quality and pollution from land-based sources, overfishing, and fish stock management, and even urban sprawl can have consequences far beyond local perimeters and national boundaries.*

The ICZM process and projects too often focus on the land part of the coast, where many problems and threats come together or appear. But demand for maritime space and resources is exploding and more attention should be given to cross-sectorial and cross-border maritime issues, such as marine protected areas, maritime transport, fishing or energy…" (Interview, May 2010).

"*A suggestion could be summarised within the following question: How can the PEGASO approach be extended beyond coastal areas to include large marine waters and ecosystems?*" (Ibid, Interview, April 2013). This question indirectly raises the issue of connections between ICZM, Marine Spatial Planning (MSP), and Integrated Maritime Policies (IMP) in general – as proposed by EC - COM (2013) 133.

According to Pablo Ávila Zaragoza (Spain), Member of the End User Committee, "*an important part of PEGASO is its capacity to integrate all the aspects and stakeholders involved in this complex system of the Coastal Zone: i.e. its capacity to set up a participatory approach supported by high-quality information.* (…) *PEGASO could be a tool to renew the old concept of Mediterranean unity, based on the common interest of preserving the Mediterranean as an ecosystem*" (Interview, March 2013).

According to Mihail Costache (Romania), Member of the End User Committee, "*PEGASO should provide balanced input for a decision-making process, concerning ecosystem protection, both for coastal activities with an impact and ecosystem protection for coastal areas and the marine environment. This decision-making process should take into account area development (economic activities, users of coastal zones) and the protection of the coastal zone*" (Interview, June 2013).

3.2 Capacity building efforts to support the ICZM Governance Platform

In this report, the capacity building efforts developed to support the ICZM Governance Platform are illustrated through three experiences carried out under the PEGASO project:

(i) The MedOpen virtual training course for ICZM;
(ii) The training of trainers on public participation;
(iii) The two sub-regional workshops on "Indicators for ICZM in the Maghreb countries (Algeria, Morocco, and Tunisia)" held in 2011 and 2013 in Algiers under the auspices of the Algerian Ministry of Environment.
(iv) The ICPC specific capacity building events for a collaborative work using the PEGASO tools and methods, including the SDI and the Atlas.

3.2.1 The MedOpen virtual training course for ICZM in the Mediterranean

The aim of the MedOpen virtual training course on ICZM, run by PAP/RAC on yearly basis since 2004, is to improve capacities for coastal management. The target users of the course are: decision-makers (at local, national, regional, and international level), policy advisors, project managers, teams and experts from international organisations and institutions, academic researchers, students, and all those who are interested in coastal management.

The Capacity Building Plan and the PEGASO Steering Committee meeting held in Barcelona in March 2012 gave the "green light" to conduct the MedOpen 2012 Advanced Course, which was adapted to the needs of the project partners. The main objective of the course was to get acquainted with ICZM in general, but also in more detail as the ICZM process is crucial for the implementation of pilot activities in the CASES.

A total of 35 candidates applied. Most of them were from Mediterranean countries. The others came from Georgia, Romania, Russia, and Ukraine. Three "external" candidates – from Japan and Qatar – expressed particular interest in collaborating with PEGASO.

One particular value of the 2012 MedOpen Advanced Course lied in the wide range of candidate backgrounds, including marine geology, applied and experimental ecology, oceanographic biology, marine biology, spatial planning, economic sciences, ocean policy research, ethnology, engineering and economics, environmental sciences, geography, forest engineering, fisheries biology, earth sciences, marine sciences, marine ecology and soil sciences. Although it may seem that this could make communication difficult, it has successfully contributed to the multidisciplinary approach to ICZM, by opening the door to an inter-disciplinary approach.

The candidates also had a strong and above average academic background. Most of them hold a university degree, either a PhD or MSc degree. In terms of employment, the majority of candidates work for national institutes, universities or research centres.

The overall work of candidates was assessed by taking into account their participation in the 'Forum discussions' and 'Simulation game', and also their 'Final essays'. The forum received a very high "viewing" level – over 3,700 hits for just 13 topics from the registered students and lecturers, indicating a very high level of readership by the 35 students. The final essays, mostly based on local case studies, were prepared by 15 students who obtained the MedOpen Advanced Certificate.

Finally, a group of three students attending the 2012 MedOpen session presented a paper at the MEDCOAST Conference held in Marmaris (Turkey) in November 2013 under the guidance of one of their lecturers.

3.2.2. Capacity building on public participation: training of trainers

While public participation is widely recognised as a necessary tool for ensuring the successful implementation of environmental policies, participatory processes are a fundamental component of ICZM. They are encouraged by the ICZM Protocol for the Mediterranean: Article 14 of the Protocol foresees the appropriate involvement of all stakeholders in the formulation and implementation of coastal and marine strategies, plans, programmes or projects in order to guarantee efficient governance of the ICZM process.

In this context, UNIVE, PAP/RAC and Plan Bleu organised a PEGASO 'training of trainers' on participatory methods (Venice, 31 October - 3 November 2011), targeting CASES teams who had expressed their interest in participatory tools, with the following objectives:

- Understand principles and tools for dealing with stakeholders in order to create the basis for sound stakeholder management in the CASES;
- Train facilitators who will be able to promote the application of participatory approaches in the CASES, in particular on how to prepare, conduct and follow up participatory events;
- Prepare facilitators to apply participatory approaches within their CASE;
- Contribute to capacity building for realisation of participatory approaches.

In order to achieve these objectives, the following topics were covered: Principles and tools for stakeholder management; Principles of participatory learning and actions; Using a participatory process, including preparation and follow-up of participatory events; Communication and Group facilitation basics; Problem-solving processes; Group dynamics and dealing with 'difficult' situations; Preparing, conducting and following up stakeholder meetings; Participatory methods and feedback techniques.

Thanks to the 'training of trainers' on public participation, CASES teams have been familiarised with the general principles and basic concepts for participatory approaches, communication rules (asking for feedback, body language), and stakeholder management tools. Role-plays taught about the specific qualities of a facilitator, who must be a speaker, active listener, and observer. Emphasis was also placed upon how to identify and classify key-stakeholders using the "power and interest map" (stakeholder mapping). A large part of the training was devoted to group facilitation tasks in order to help CASES to prepare, facilitate, and follow-up participatory meetings with stakeholders.

Finally, training course participants have acquired the basic skills and techniques for group facilitation and stakeholder management. The training can be also be considered a public 'place for participation' and it was a

unique opportunity for strengthening collaboration between Mediterranean and Black Sea CASES. Further advanced training was offered to the participants during the 2nd CASES meeting held in Venice in July 2012.

3.2.3 Sub-regional and technical workshops on "Indicators for ICZM in the Maghreb countries (Algeria, Morocco, Tunisia)"

Two sub-regional workshops held in Algeria (26 September 2011; 13-15 November 2013) and organised by AREA-ED (PEGASO partner) were devoted to technical workshops and capacity building sessions on "Indicators for ICZM in the Maghreb countries (Morocco, Algeria, Tunisia)" (Table 1).

The first was done under the auspices of the Algerian Ministry of the Environment and Spatial Planning together with the National Coastal Agency. Both supported as well the second workshop, together with the Ministry of Fisheries. The Minister himself, Mr Sid Ahmed Ferrouki, came to hear the round tables' conclusions and to close the meeting.

Objectives	Participants
- Providing a framework for reflection on "Indicators and ICZM" in the Maghreb countries; - Initiating a process to establish a common core set of indicators for ICZM at sub-regional level (dashboard of common indicators for ICZM in Maghreb countries). - Supporting the National ICZM Strategy under development in Algeria.	- National partners: government services, State agencies (particularly the National Coastal Agency), Universities, NGOs, etc. - Representatives from Morocco and Tunisia. - PEGASO partners and management team. - UAB, PEGASO coordinator, UNEP/MAP RACS: PAP/RAC, Plan Bleu.

Table 1: Sub-regional and technical workshops on "Indicators for ICZM in the Maghreb countries (Algeria, Morocco, Tunisia)" – Objectives and participants – Algiers, 26 Sept. 2011; 13-15 Nov. 2013

The PEGASO project was considered as an opportunity to promote cooperation in Maghreb countries in order to establish a new framework for discussion and exchange and to capitalise on experiences and feedback about best practices and lessons learned, for the definition of a core set of indicators and the development of standardised methods. This innovative experience has to be strengthened and continue in the long term, with the aim of establishing comprehensive evaluation of the measures to protect coastal areas in Maghreb countries.

Prospects for sub-regional cooperation on ICZM issues between Maghreb countries

- Contribution of the Maghreb sub-region to PEGASO final reports: preparing summaries for decision-makers, suggesting priority issues and actions;
- Building 'Geonodes' for the three Maghreb countries, in connection with the PEGASO SDI;
- Testing and improving PEGASO indicators for marine waters (eutrophication and pollution);
- Testing PEGASO indicators used for LEAC;
- Testing "Urban Metabolism" indicators for the city of Oran (links with the MEDINA project);
- Improving capacity building activities in the Maghreb sub-region: inter-university exchanges, workshops involving stakeholders and civil society in the ICZM process;
- Fundraising to translate PEGASO web pages into French;
- Expressing a proposal on joint projects involving the three Maghreb countries.

With regards to Algeria in particular, the PEGASO project offered an opportunity to extend the CAMP Algeria initiative (2000-2003), particularly for the establishment of coastal area dashboard monitoring. The ICZM Governance Platform helps intensify sharing and enhance the lessons learned in order to transpose the ICZM Protocol for the Mediterranean into national legislation, in particular Law 02-02 of 5 February 2002 on the protection of Algerian coastal areas. The preparation of the national ICZM Strategy has been established in this context, with the support of PAP/RAC and the MedPartnership initiative.

Last but not least, knowledge, expertise and data sharing were enhanced and new teaching modules, initiated in the Master Degrees of the National High School of Marine Sciences and Coastal Management of Algiers, reconciled scientist and stakeholder views about coastal areas. These developments represent a qualitative "jump" for improving new and adapted "coastal governance" in Algeria.

3.2.4 International Cooperation Partner Countries (ICPC) capacity building workshops: the example of Egypt

During the negotiation phase of PEGASO, in 2010, the EC gave a high importance to the formation of experts and scientists, stakeholders and high decision level persons, in the ICPC countries. PEGASO organised these workshops at the end of the project, to have a full PEGASO experience to disseminate. ICPC Workshops were organised in Lebanon, Turkey, Georgia, Algeria (for the three Maghreb countries) and Egypt.

The above paragraph refers to the Algerian experience, and the involvement of the three Maghreb countries. The experience in Egypt is explained below.

Egypt, Cairo (10-11 December 2013);
This Workshop was organised by PEGASO (UAB and IFREMER), and its partner NIOF, National Institute for Oceanography and Fisheries (Egypt) that lead the PEGASO CASE in the Nile Delta Plan Bleu as also present. It was also co-sponsored by two FP7 European projects, FORCE and MEDINA. The Workshop has gathered high level administrations and structures, very active in the sectors of the planning, management and exploitation of the Nile Delta. Main objective of the Workshop was to show the interest of some prospective methods to anticipate acute management problems in the great lakes of the Nile delta, especially focussing on ICZM and aquaculture sustainable development.

This method that has a high pedagogical potential, also search to help stakeholders in the appropriation of ICZM principles, for a better understanding about complex issues linked with the aquaculture development in Egypt. From a production of about 100.000 tons of aquaculture products beginning of the 90', Egypt produced more than 1 million tonne in 2011, the equivalent of fishery production in the Mediterranean (11th world rank, 1st rank in Africa). But this quick development has been done in a very difficult social, economic and environmental context, also due to the present political situation of Egypt), far from the sustainability principles.

A number of issues were taken into consideration such as the quick population growth in the Delta (1 M people more each 9 months), coastal erosion and submersion risk at the face of SLR, land and aquifer salinization, diminution of sweet water availability, pressures on land and on the lakes, pollutions, fishing and illegal aquaculture activities, etc...

The first day was dedicated to expositions by Egyptian experts and scientists on the different facets of the situation and a second day dedicated to a prospective Workshop on the concrete example of the Nile delta. The main objective of this workshop was to have the different decision makers of this area working together with simple and robust methods (DGEST scenarios) to facilitate common understanding and appropriation of the possible actions to be decided.

The debates have shown the importance of the challenges and of the constraints, in a context full of tensions and major political changes. The Workshop has confirmed the interest for PEGASO, especially the usefulness of the governance approach, facilitating a more free communication and exchanges of scientific data, as well as the learning through specific tools built in PEGASO, notably for the sharing of similar experiences (indicators, LEAC/SEAC...) making comparable different places in the Mediterranean, and participative processes, to help in the decision making.

Main findings
Most participants reported that they were not used to participative in brainstorming such as the one triggered by the DGEST method, putting the collective intelligence at work, with the aim to make recommendations on a sustainable development, incl. aquaculture in the Nile Delta. It became evident that the key point for planning and territorial decisions is governance and communication. So these exercises should be planned timely to strengthen the positive effect, avoiding producing great frustration if nothing more happens.

In the next future, capacity building programme should address the capacity for building governance at the higher spheres that take decision in the country, to ensure appropriation and ownership of the participatory methods and communication tools. It is also to be noted that simple and robust methods such as DGEST and scenarios are very understandable by stake holders and motivate them to speak together, to respect the "parole" of the other, to build together collective decisions, which is recognised as a highly priority.

General conclusions of the ICPC workshops:
-Governance is a key issue to begin a long lasting ICZM process in ICPC countries. EU should support a Project like PEGASO to build a sustainable Platform of governance, which is needed at regional level, both in the Mediterranean and the Black Sea;

-PEGASO tools and methods have shown their importance to encourage people working in a collaborative manner;

-Multi-stakeholder platforms are the key to reach this objective, creating confidence and new needs for on-going communications;

-PEGASO has been highly recognised as a useful project, because it makes “governance platform and participatory debates” happening, with user friendly scientific based tools and methods. All have been highly valued for their usefulness in all the workshops.

-The intervention of an external expertise is also key to trigger dialogue amongst parts in many countries, and amongst them, respecting trans-disciplinary and trans-cultural singularities.

3.2.5 Engagement with stakeholders and decision-makers in the PEGASO CASES, example of the Guria Coastal Region (Georgia). From local to regional actions

The Black Sea countries joined the PEGASO project through the partner BSC PS, in order to gain more insight and experience with regard to the application of best practices and governance instruments (such as the ICZM Protocol for the Mediterranean), and test these policies in the Black Sea. The Protocol has particularly useful provisions for participation in Article 14, calling on the Contracting Parties to ensure public involvement in the formulation and implementation of ICZM projects, and also for providing information and ensuring rights for the public to challenge the authorities with respect to coastal strategies, plans, programmes and/or projects under consideration. Such a practical approach is very much in line with preferences for participatory processes, as articulated in various policy documents drafted for Georgia.

Background and stakeholder identification
ICZM Initiatives in Georgia (as in all other Black Sea countries) can be traced back in time since the signing of the Bucharest Convention (1992) and the first mention of ICZM in the Odessa Ministerial Declaration (1993). Any initiatives taken were therefore mostly of a top-down nature. There were some national implementation initiatives for the Georgian CASE in the Guria Region. Firstly, the RAMSAR Site (since 1996) and the Kolkheti National Park wetland (since 1999) have been established along the coast at Kolkheti Lowland, and a large and important peatland part of Imnati-Grigoleti and part of the Paliastomi Lake belong to the coastal Region of Guria. The World Bank and GEF supported these initiatives in the period of 1999-2005. A second initiative focused on the development of an ICZM Pilot Project for a small Tskaltsminda community, known as the ECBSea project, which was implemented with the support of Europe Aid in the period of 2008-2009. This pilot activity was complemented by the development of the ICZM Strategy, which has not yet been approved, similar to the draft of the ICZM Law for Georgia, which has also long been pending consultation and adoption.

The approach undertaken in the Georgia CASE was to capitalise on earlier developments and implement the PEGASO process and tools as the continuation and gradual expansion of earlier initiatives, treating the process as part of the national ICZM programme and action plan rather than an isolated and short-term project initiative. This was indeed one of the reasons for selecting the coastal Region of Guria, which had hosted earlier ICZM activities for the Kolkheti wetlands and Tskaltsminda pilot project.

A similar approach was pursued in terms of a participatory process, in an attempt to balance the immediate project need to provide for “participatory action” with the longer term need of avoiding the risk of raising false

expectations, without delaying actions and thus risk losing the interest of key stakeholders and decision-makers. It is considered important, therefore, to also maintain the integrity of the process in the post-PEGASO period. The new regional project "Integrated Land-use Management Modelling of Black Sea Estuaries" under the Joint Operational Programme for the Black Sea Basin may provide bridging support. It was a deliberate decision to also include the Georgian CASE in the Guria Region as the pilot study area in this follow-up project, which covers the coastal zone and catchment area.

The first step in the participatory process was the identification of the Guria CASE stakeholders, which was a relatively easy step to make due to a previous history of interaction and earlier project work. Moreover, the chosen CASE coordinator was a key representative of the region's civil society and the leader of a local NGO, the Lanchkhuti Information Centre, which is a key stakeholder in one of the two coastal municipalities of Lanchkhuti and Ozurgeti in the Guria Region.

It is interesting to compare the initial stakeholder list with the list of actual parties involved in the participatory process at various phases of the PEGASO project, which is indicated with bold and colour in Table 7 below.

Stakeholder	Role in coastal zone management
International: Black Sea Commission	**Black Sea ICZM guidance and forum (ICZM Advisory Group), international cooperation and exchange with the other PEGASO CASES – thanks to the ICZM Governance Platform**
Ministry of Environment & Natural Resources Protection (MoE) of Georgia	**Black Sea Commission Member (represented by the ICZM Focal Point and CASE Coordinator)**
Ministry of Economy and Sustainable Development	**Spatial planning**
Department of Tourism, Ministry of Economy and Sustainable Development	Tourism
Ministry of Regional Development and Infrastructure	Water, roads, coastal protection and other infrastructure
GeoStat	**Statistical data on socio-economic indicators**
MoE National Environmental Agency	Research and monitoring
Guria Governor Administration	Regional government
Municipalities of Ozurgeti and Lanchkhuti	**Local municipal government**
Grigoleti, Tskaltsminda, Ureki and Shekvetili	**Local community government**
NGO - Lanchkhuti Information Centre	**Public participation, facilitation**
Georgia Pipeline Company	Operation of the Supsa oil terminal and its marine base
NGO Tchaobi	**Wetland and coastal habitat conservation**
Kolkheti National Park	Wetland protected area management
National, regional, local level and other appropriate stakeholders would be invited from the Regional Coastal Council. Members would be people with experience or responsibilities in coastal management on a regional scale, and would include representatives from the central authorities with critical ICZM mandates, executive offices of the Governor of Guria, local government, local self-governance, coastal protection, tourism, environmental and nature protection, fisheries, ports, energy and industry. At least half of the members would be representatives of NGOs and elected bodies of local government.	

Table 2: List of initially identified ICZM stakeholders and those actually involved, Georgia CASE Site

The participatory process at several levels in the Guria CASE

International participation was achieved through presentations and by providing information on planned and implemented activities at various international forums and meetings. Both the Guria CASE coordinator and the ICZM NFP in Georgia made the most of their membership in the ICZM Advisory Group to the Black Sea Commission and regularly reported and provided feedback on progress with CASES implementation in Georgia. A similar approach taken by two other Black Sea CASES (Danube Delta and Sebastopol Bay) proved to be very useful for BSC support, along with interaction with colleagues from other Black Sea countries,

providing an important pathway for sharing PEGASO experience.

Equally important was participation in PEGASO CASES, project meetings and numerous training opportunities. The Georgian CASE coordinator participated in Med Open ICZM distant learning, training of trainers on public participation and SDI training, etc. The presence of representatives from the Guria Region – two Chairpersons from Lanchkhuti and Ozurgeti Municipal Councils – at the PEGASO 3rd General Meeting (Rabat, Morocco) was a very special participatory experience.

At national level, the Black Sea Commission Member of Georgia was kept informed of CASES progress through regular briefings in person. The participation of representatives from central agencies, such as the Ministry of Economy and Sustainable Development and GeoStat, was combined with the continuous participation of the ICZM NFP in implementing the project.

For participation **at regional level**, initial contact was preferred to be "technical" in nature, rather than policy-oriented and it was therefore decided to plan the training workshop for stakeholders at the Guria Region level. The idea was to introduce stakeholders to PEGASO ICZM tools, such as indicators, and then facilitate further stakeholder involvement through a "learning by doing" process. Several important stakeholders were already involved in the process, while other stakeholders would need to be involved in the future. The Guria CASE Workshop, held on 20 November 2013 in Grigoleti (Guria Region, Georgia), is one of the major outcomes, since stakeholders unanimously supported the idea of establishing the Guria Regional Coastal Council. It is worth noting that a similar approach is advocated by both the draft ICZM Law and draft ICZM Strategy for Georgia. With support of the PEGASO project and partners, the stakeholders in Guria indeed voted for these approaches to proceed further with ICZM by establishing a stakeholder forum as a way of advancing coastal management in this region. Another outcome in terms of human capital worth mentioning is that the Guria CASE coordinator was elected Chairperson of the Lanchkhuti Local Council.

At local level, the Guria CASE coordinator invited and convened the progress monitoring session with the local Tskaltsminda Community to address one of the activities planned under the CASE work: the participatory assessment and evaluation of the progress achieved for the implementation of the ICZM process, identifying outstanding actions as a follow-up to previously implemented local ICZM pilot projects. The participatory process tried to convey the message of a programme-based approach (evaluating the implementation of earlier projects) and thereby maintain the continuity of ICZM activities at local level.

The participation of the PEGASO Coordinator and WP3 Representative (VLIZ) in the Guria Workshop (November 2013) was of particular importance for Georgia CASE stakeholders to understand the multi-scale nature of ICZM, setting the comprehensive context of links between international, national, regional and local processes. In addition, it was very helpful to demonstrate coastal sustainability indicators, which were already produced by partners for the Danube Delta (Romania, Black Sea) and Bouches du Rhône (France, Mediterranean).

Finally, the Table 3 summarised the Strengths, Weaknesses, Opportunities and Threats (SWOT) for Participatory ICZM in the Guria Coastal Region:

STRENGTHS	OPPORTUNITIES
- Existing international/regional network through the Black Sea Commission and its ICZM AG - Best practices set by ICZM Protocol with regard to requirements for public participation and ICZM - Network of Mediterranean and Black Sea ICZM practitioners well established, thanks to the ICZM Governance Platform - International governance supportive of ICZM and participation - Limited but positive experience with participatory stakeholder engagement within the Guria CASE - Some experience gained by national and local coastal managers within international demonstration activities and earlier international/national ICZM efforts - Local stakeholders participating in the ICZM Governance Platform	- Positive attitude expressed by regional and local stakeholders in support of the proposed forum, such as the Guria Regional Coastal Council, and their willingness to participate further - Immediate availability of some international projects in support of participatory ICZM in Guria, and the potential for further EU and regional support through the Black Sea ICZM network - Increased visibility of the Guria coast and the availability of ecosystem-based governance options for currently undeveloped parts of the coastline in the Georgian CASE - Changing policies of the Georgian state with more support for a regulatory framework, including more participation in the decision-making process - Availability of internationally validated toolsets

WEAKNESSES	THREATS
- Lack of some essential coastal data for filling in information gaps and using ICZM tools - Lack of binding instruments in support of ICZM and the participatory process - Weak or non-existent legislation for environmental and strategic assessment or spatial planning, including the integrated framework for coastal development projects, plans and programmes - Development pressures from the private sector along the coastline and lack of setback rules - Decision-making in closed elites versus open process through participatory forums	- Non-binding nature of ICZM instruments, available at international and national levels - Further delays with the introduction of legal and policy instruments for ICZM such as coastal legislation and national strategy and stronger international instruments - Continued trends in coastal development pressures both from private and public funding - Potential for change in national policies with regard to participatory governance, reverting back to a libertarian economy and non-regulation of development pressures, on the coast in particular

Table 3: SWOT Analysis for the ICZM process and participation, Georgia CASE Site

It can be considered an excellent "existence strategy" for the Georgia CASE to proceed with the establishment of the Regional Coastal Council for Guria and to have the consensus of all stakeholders with this regard, much in line with the participatory nature of the PEGASO ICZM Governance Platform, and the requirements of national policy instruments such as the draft ICZM Strategy and draft ICZM Law for Georgia. Guria stakeholders are already beginning to implement the provisions of these important draft national policy documents, and prospects seem positive for the Guria Coastal Region in joining, and also contributing to the Joint Governance Platform for ICZM in the Mediterranean and the Black Sea.

3.2.6 Impacts in the Regional Sea Conventions: Action Plan for the implementation of the Mediterranean ICZM Protocol (2012-2019)

The rationale behind PEGASO was to support the implementation of the ICZM Protocol and contribute to the understanding of the territorial, conceptual, policy and institutional contexts in which this legal document has to be implemented. As stated before (see Section 3), the comprehensive stock-taking exercise had its first significant milestone during the drafting of the "Action Plan for the implementation of the ICZM Protocol in the 2012-2019 period", adopted by the Contracting Parties to the Barcelona Convention at COP17 in Paris (February 2012). On the other hand, the project had great potential to contribute to the implementation of this Action Plan in terms of both the partnerships and networks established and the specific products and tools provided. The following highlights of some of the expected outputs listed in the Action Plan illustrate the relevance of the project for its (future) implementation (UNEP/MAP, 2012):

- "*Assistance to the Contracting Parties as required in the development of governance structures, including for example the carrying out of gap analyses of legal and institutional arrangements, and the improvement of human and technical capacities.*
- *Development and continuous improvement of the ICZM Governance Platform to support CPs in the implementation of ICZM through the provision of information and expert tools, including its continued maintenance and refinement throughout the whole Action Plan period.*
- *Gathering data and monitoring ICZM indicators for the Mediterranean starting with those related to coastal management in the context of the application of the Ecosystems Approach.*
- *Describe the ICZM process, illustrating and guiding the effective use of tools and instruments.*
- *Programme of high-level seminars, round tables and workshops at regional, sub-regional and national levels to promote the implementation of the ICZM Protocol.*
- *Further development and annual delivery of the MedOpen training course.*
- *Support for and participation in research programmes for ICZM that support the implementation of the Protocol.*
- *Promotion of the ICZM Protocol and good practice in its implementation across the Mediterranean.*

- *Promotion of the ICZM Protocol and its implementation internationally through publications, published papers, networks and conferences.*
- *Identification and development of synergies and partnerships with appropriate networks to assist in the implementation of the Protocol.*
- *Proposal for the establishment of a Mediterranean coastal network to promote the exchange of scientific experience, data and good practices*".

3.2.7 Priorities for ICZM in the Black Sea region

The experience from Black Sea countries in PEGASO activities, such as participation in stock-taking (see Section 3), engagement in a multi-stakeholder participatory process (such as the Istanbul Envisioning Workshop, see Sub-section 7.3), and the sharing of experiences through the ICZM Governance Platform demonstrated that the coastal management issues faced in the region are multiple and interlinked. Therefore, priority should be given to integrated responses packaged into clearly identifiable and comprehensive actions, for which the following priorities can be recommended:

- Legal and institutional analysis and stakeholder consultation process at all levels in support of the development of the coastal governance legal instrument for the Black Sea.
- Support research and monitoring capacity in the Black Sea region, in order to compile statistical, spatial and progress indicators for ICZM.
- Adapt, develop and deliver a comprehensive set of ICZM training and education packages, focused on decision-makers and practitioners in the region.
- Establish an operational observation system for the Black Sea, its coastal zones and wider catchment basins.
- Sustain the PEGASO ICZM Governance Platform and extend its application to the Southern European Enclosed Seas (Black, Caspian, and Mediterranean).

The above priorities were reviewed and validated by the BSC scientific network of key stakeholders and were accepted for inclusion in the SEAS-ERA's Strategic Research Agenda for the Black Sea Basin report, under the chapter entitled "ICZM, links with MSP & IRBM, coastal sciences & engineering" (Tübitak, 2011). These priorities could be put into operation through PEGASO deliverables for the Black Sea basin and by applying the project tools, thus setting a sound basis for sustainability of the ICZM Governance Platform beyond the project lifetime.

Vision of the Roadmap for ICZM in the Black Sea Region

- ICZM is actually the ecosystem-based governance/management process for the coast. The same can be said of Integrated Regional Base Management (IRBM) and Maritime Spatial Planning (MSP) in their respective ecological scopes.
- The problems with coastal governance are a recognised issue in the Black Sea region, which, from a policy perspective, could be addressed with the development of the concise Roadmap for ICZM in the Black Sea, to set the stage for the future of coastal management in the region.
- PEGASO could commit alongside BSC PS to develop the *Roadmap for ICZM in the Black Sea region*.
- The Roadmap is meant to be a standalone document with potential for being packaged with and commissioning the broader Guidelines, which can be considered attached to the relevant policy document, requested for development in the Black Sea SAP (2009).
- The Roadmap can therefore be seen as part of the larger package, provisionally entitled "*Roadmap and Guidelines for ICZM in the Black Sea*".
- The policy/introductory part (i.e. Roadmap) would actually be suggested for approval by BSC.
- The Roadmap (or equivalent title document) should be consulted with the BSC for early advice on its appropriateness for formal endorsement[1].
- Consulting the terminology in Black Sea languages is important before finalising titles of the intended policy document(s).
- The *IRA Summary for Policy Makers* could be used as the starting point for the Roadmap.

[1] The AG ICZM Chairperson has committed to consult the first draft with the Black Sea Commission Members to seek early advice and thus enhance the acceptability of final results.

- Strong reference to Protocol as a best practice approach would be appropriate in the Roadmap.
- Guidelines should fully use the language of the ICZM Protocol for the Mediterranean and serve to interpret its provisions in order to promote good coastal governance. Above all, this would further harmonise ICZM approaches in the Mediterranean and Black Seas.

The ICZM Guidelines would go further by incorporating PEGASO tools and products (stock-taking, indicators, marine and land ecosystem accounts, scenario building, SDI, CASES, etc.) and other ICZM tools successfully applied in the Black Sea region (coastal code of conduct, ICZM spatial planning methodology, progress indicators, etc.). The ICZM Governance Platform, including the coastal Wiki and SDI tools, could provide the best format for the presentation and development of Guidelines.

3.2.8 Mediterranean Coast Day as a 'new tradition' for successful dissemination actions

The Mediterranean Coast Day celebration was launched in 2007 as an event designed to raise awareness of the importance of coastal issues and promote ICZM as the optimal policy framework. Supported by PAP/RAC, the event aims to increase environmental awareness among decision-makers, academia and media, and also attract the attention of all Mediterranean citizens to the pressures to which coastal areas are exposed and the consequence of these pressures on the environment and the quality of life of coastal populations.

From a rather modest event celebrated locally, Coast Day has grown over the years to become a regional event with a central regional celebration organised every year on 25 September in a different country and accompanied by national or local side events organised by countries, regions or cities that feel the need to raise coastal issues higher in their agendas.

The importance of this event was confirmed when it became one of the activities included in the "Action Plan for the implementation of the ICZM Protocol in the 2012-2019 period", which was adopted by the Contracting Parties to the Barcelona Convention at their 17th conference held in Paris in February 2012. This has confirmed that awareness-raising activities play an important role in ICZM because a well-informed, highly aware and ready-to-act society is the best guarantee that ICZM principles and the obligations of the ICZM Protocol will be implemented.

At an early stage in the PEGASO project, the partners recognised the usefulness of such an event for boosting the work of its ICZM Governance Platform and for dissemination purposes. They decided to join the 2010 Coast Day celebration in Portorož (Slovenia), hosted by the Slovenian Minister of Environment and Spatial Planning, with the participation of the President of the Slovenian Parliament. The technical meeting with PAP/RAC NFPs, organised a day before, on 24 September, was an excellent opportunity to present the project to PAP/RAC NFPs and get their validation of the stock-taking questionnaire on legal, institutional and financial aspects related to ICZM in Mediterranean and Black Sea countries (see Subsection 3.4).

Feedback from the PEGASO End User Committee about Mediterranean Coast Day (1)

"*I am very optimistic, given the active participation at the NFP meeting in Portorož. The active response of the NFPs to the forthcoming ICZM Protocol implementation is indicative of the high expectations of new inter-sectorial ICZM approaches to address existing problems in the Mediterranean and provide more user-friendly and efficient solutions.* (…) *The very constructive debate among high-level representatives (President of the Slovenian Parliament, ministers, UNEP/MAP Coordinator and EC representative) on the importance of implementing the sustainable management of coastal areas was a very concrete contribution to the celebration of Coast Day. This sent out a very good message to all sectors and developers that "somebody" does care about the implementation of a holistic approach for the quality of life and well-being in Mediterranean coastal areas. Coast Day was very much welcomed by all the media and NGOs*" (Mitja Bricelj, PEGASO End User Committee, Interview, December 2010).

In 2011, Coast Day was celebrated in Algiers under the auspices of the Algerian Minister of the Environment and Spatial Planning. According to the National Coastal Agency representative, this event gave a strong signal of the commitment of the Algerian government to invest in the ICZM process. This event provided the PEGASO project with an opportunity to organise a sub-regional workshop for Morocco, Algeria and Tunisia on indicators of sustainability and indicators for governance adapted to the ICZM process (Algiers, 26 September 2011: see Subsection 6.3).

Feedback from the PEGASO End User Committee about Mediterranean Coast Day (2)

"*Awareness and information are an important aspect that was highlighted, and which should support all actions related to coastal protection in the context of sustainable development. This has led to the integration of partners through a participatory approach.* (…) *25 September is the "rendezvous" for all stakeholders and partners to talk about the coast, its wealth, problems and procedures for its protection and conservation. This is an opportunity to share experiences, and to standardise the approach in order to really share the same language.* (…) *The sub-regional workshop on ICZM indicators has given access to a common and consistent methodology that meets the main guidelines of the ICZM Protocol for the Mediterranean*" (Samira Natèche, PEGASO End User Committee, Interview, January 2012).

4. Website and dissemination efforts

-To allow co-working to take place among the platform participants, face-to-face communication and participatory work were extremely important, but access to online technical support was also essential. To support communication between PEGASO people working on different sites and to allow interactions across various spatial scales, a powerful technical web portal infrastructure was provided (www.pegasoproject.eu).

4.1 The PEGASO web portal

- The work of the ICZM Platform was supported by The PEGASO Web Portal, designed and managed by the Flanders Marine Institute (VLIZ / Vlaams Instituut voor de Zee and its intranet (designed and managed by Universidad Pablo de Olavide / UPO) is the virtual forum for the ICZM Governance Platform and the 'place' where a number of virtual meetings took place (e.g. virtual conferences - VIC).

-An 'online collaborative platform' can therefore be defined as a 'virtual workspace' or 'virtual knowledge centre', which is linked to a specific website and intranet forum bringing together all platform's participants (partners, users). An 'online collaborative platform' has to be supported by a technical infrastructure that includes tools such as IT tools, software packages, online videos, knowledge-databases, a server for resource sharing, electronic messaging, discussion forums, a user profile directory, timetables, indexes listing completed and remaining tasks, any available or forthcoming reports, and finally a collective archive system. In addition to the two major products developed under this project – the ICZM Process included in the PEGASO Coastal and marine Wiki and the SDI, all these or similar tools were made available and functional on the PEGASO website and intranet.

The ICZM Governance Platform has been a useful framework for the dissemination of PEGASO results between scientists and end-user communities. It has also been used to channel "external information", e.g. information on relevant events, documents, training opportunities, scholarships, etc. to platform members via the PEGASO intranet. A number of 'polimedia' videos and training materials have been and are still available online.

4.2 PEGASO intranet: a shared content management platform

The PEGASO intranet is a document management platform which was developed in parallel to the PEGASO web portal. It can be accessed from the project website, is password-protected and was a shared digital/virtual environment for the consortium and end-users.

The intranet facilitated the sharing of documents between partners, stakeholders and end-users, and acted as a repository for participant resources and results. It was the main communication channel between partners

through its main tools such as the forum and the news section in the message board. It stimulated cooperation and working together by providing a common place for finding information, downloading or commenting on reports and sending messages. Each consortium participant received a personal account and password with which she/he can upload and download documents and data, and communicate on the forum.

The supporting technology was selected by WP3 coordinators from a range of existing services, and consists of a 'Liferay' platform, which is an open source code. This platform allows the generation of review tools that are useful for monitoring documents or tracking changes, etc. This platform operates on most internet browsers including Microsoft products, Firefox and others. 'Alfresco' is the open source software implemented for the document management section.

The intranet therefore fulfilled the diverse and multiple needs of the ICZM Governance Platform, providing a common place where information can be systematically stored and retrieved through a 'navigator menu' or search window. New data and applications and various versions of the reports and maps produced during the project can be uploaded onto this repository.

For communication purposes, a calendar with the main events was kept up-to-date. The message board (and 'News' section on the wider PEGASO web portal) facilitated information sharing. A virtual (digital) discussion forum was developed to host online meetings and discussions, which was used for several Virtual Conferences (VICs).

Some figures about the PEGASO intranet are presented below:

- 200 credentials created;
- 193 news and announcements in the welcome area with more than 29,000 visits;
- more than 7,000 visits to the Forum section (31 Categories, 1,052 posts, 71 participants);
- more than 100 documents stored and 3,541 visits to the "document manager" section;
- during the 1st and 2nd VICs, 316 and 843 visits were registered respectively.

4.3 The PEGASO Wiki: Why, What and for Whom?

The issue: taking better advantage of existing knowledge:
There is abundant information on coastal and marine processes and issues, but most of this information is not easy to find or use, or its scientific value may be unclear. Existing documentation and publication practices do not take full advantage of present knowledge and experience. The current situation can be described as follows:

1. Scientific knowledge is mainly communicated among fellow experts. Scientific publications focus on specific disciplinary aspects and are almost inaccessible to non-expert coastal and marine professionals.
2. Integrated assessments of coastal and marine issues often refer to specific field situations and are published as grey literature or brochures, which are hard to find and get hold of.
3. Results published on project websites often become inaccessible after the project has ended.

Powerful search systems have been developed to retrieve information from the Internet, but due to the huge proliferation of websites, generally not more than a fraction of the relevant information is found. The use of this information is further hampered by the lack of consistency between pieces of information and the lack of comprehensiveness and context. Some pieces of information may be outdated and others may be unreliable. Furthermore, in spite of the fact that much of the research is funded with taxpayers' money, it is often not freely accessible at the appropriate time. For these reasons, much coastal and marine knowledge that exists in research institutes and practitioner organisations is not fully utilised and similar studies are carried out more than once. New knowledge dissemination practices are needed to capitalise on scientific output and take better advantage of existing knowledge, especially for practical use in decision-making.

The PEGASO Wiki for the Mediterranean and Black Sea is an online portal embedded within the Coastal and Marine Wiki launched within the EU ENCORA project. It serves as a collaboration platform to publish

information and discuss the various tools, methodologies, indicators or scenarios used in ICZM at various scales and in different pilot sites across the Mediterranean and Black Sea. The PEGASO Wiki aims to collect and publish all scientific project outputs and make them easily accessible to end-users, in a structured and integrated way. The PEGASO Wiki is fully designed according to the general Wiki principles. However, an important difference with the Wiki described above is that it is not possible to edit anonymously; contributors need to create an account and sign in using their institutional affiliation.

Target user groups of the PEGASO Wiki are:

- Decision-makers: e.g. a coastal mayor, an employee at a higher management level in regional or national administration, EC staff, or managers of influential NGOs;
- Practitioners: e.g. an MPA manager, an expert working for the administration, a planner or consultant at any administrative level, employees of companies and consulting agencies that are active in the coastal and marine areas;
- Scientists from any area of marine-related science, who require information from a field other than his/her own field of interest or as a start-up to enter a new research area;
- Students at academic institutions and trainees, who want to familiarise themselves with the concepts of coastal and marine science and with practices for coastal and marine management;
- Public stakeholders with a particular interest in coastal and marine information, e.g. water sports practitioners, amateur fishermen, seaside visitors, etc.
- The wider public. For this group in particular, a pro-active approach to the dissemination of research outputs is necessary and planned for the project.

PEGASO and updating the Coastal and Marine Wiki

The PEGASO Wiki focuses on the following four information components:

- Legal frameworks: with information on the ICZM Protocol and Barcelona Convention for the Mediterranean, and the Bucharest Convention for the Black Sea.
- The 10 PEGASO CASES aim to test and validate the assessment tools developed during the project at different spatial scales, and contribute to the Integrated Regional Assessment at basin-wide scale for the Mediterranean (7 CASES) and Black Sea (3 CASES).
- Tools in support of ICZM: Land and Ecosystem Accounting (LEAC); Cumulative Impact Mapping (CIM); Indicators for ICZM; Scenarios making methods; Participatory approaches; Socio-Economic valuation;
- Spatial Data Infrastructure (SDI): with an introduction to the importance of data sharing, common concepts and definitions, guidelines for the harmonisation of data and guidelines to build a 'geonode'.

The PEGASO Wiki also contains a section that exemplifies and describes each of the different steps in the ICZM process, in the section entitled, "*The ICZM Process - a Roadmap towards Coastal Sustainability – Introduction*". The five stages of the ICZM process (Establishment, Analysis and Futures, Setting the Vision, Designing the Future, and Realising the Vision: Figure 2) are further structured into key tasks for each stage, which are documented in the Coastal Wiki.

The PEGASO Wiki is also a central part of the project's communication strategy. The Data and Information Coordinator (VLIZ) is dedicated to ensuring that PEGASO deliverables are translated into content that can be consulted both internally within the PEGASO consortium and by the external interested public, by translating it into Wiki articles. These Wiki articles are intended to facilitate communication by making the outputs, findings and conclusions of deliverables (tools, reports, methods) available. The release of Wiki articles is immediately announced in the PEGASO news feed, which can be accessed from the Home page.

Statistics

The Coastal and Marine Wiki currently contains 1,973 articles (8 July 2013), which are part of one of its 9 sub-portals. In total, the pages have been edited 55,364 times by the 398 registered users (Figure 7). The PEGASO

Wiki contained 46 articles in July 2013 (126,000 visits). These numbers are likely to increase substantially once the full range of end products for the PEGASO project is released and the dissemination process is completed.

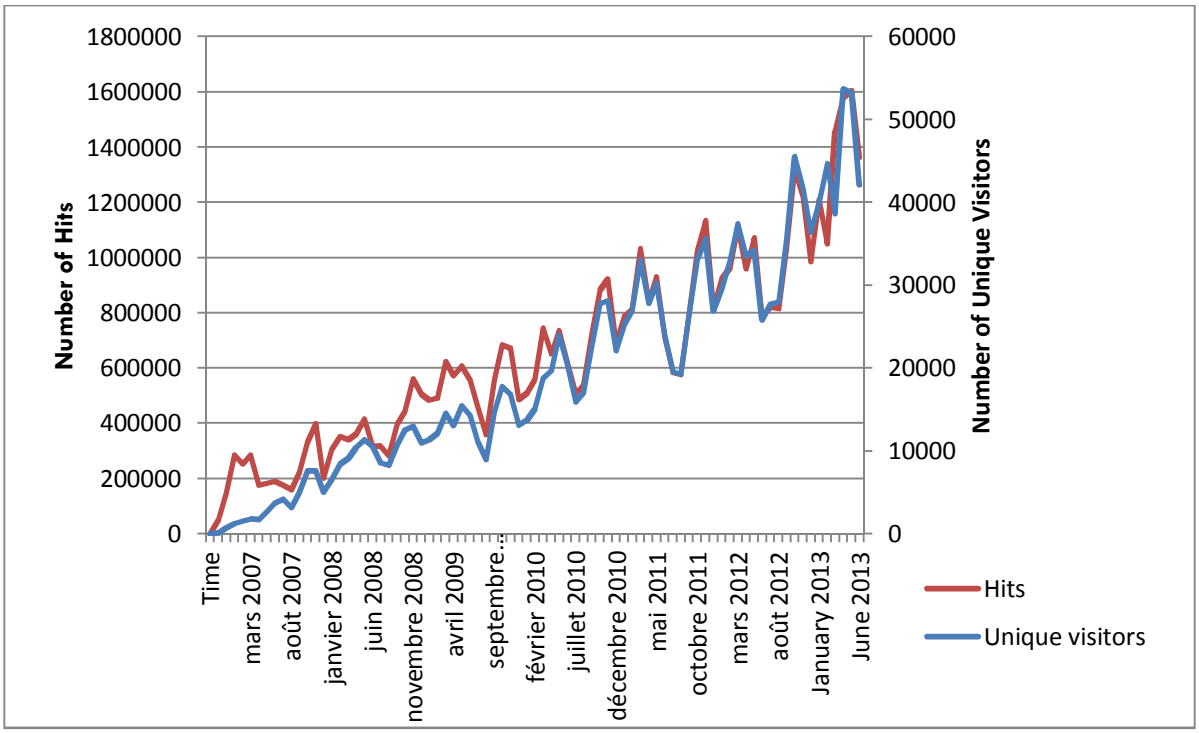


Figure 10: Number of unique visitors and hits for the Coastal Wiki since November 2006

In terms of the lessons learned, the use of the Wiki-software in projects like PEGASO offers the following different advantages:

- The information is made available online and can therefore reach many interested parties, in particular scientists, coastal practitioners, managers and decision-makers. Moreover, this software allows users to collaborate by creating, editing, and organising the website's content. For the Coastal and Marine Wiki, the Wiki editors are part of a scientific community, which ensures the quality of articles, and anonymous editing is not possible in this system. Since it is an interactive tool, users can improve content. Therefore, working with a Wiki is a continuous process where everyone can view the edit history of each page and see who has made which changes and when.
- The Coastal and Marine Wiki, in particular the PEGASO Wiki portal, can be fully searched and has comprehensive links. In addition, a google search can quickly bring users to the Wiki information page(s) they were looking for.
- Another advantage of working with a Wiki within a project is the system sustainability. While the project website will go offline sometime after the project ends, a Wiki remains available.
- The PEGASO Wiki can also be exploited as a tool to support dialogue between scientists and end-users, facilitating a feeling of ownership of the ICZM Governance Platform for end-users, decision-makers, practitioners, and stakeholders in general.

4.4 PEGASO Newsletters

PEGASO NEWSLETTER – no. 1 Spring 2012 (English): E-mails sent: Views (number of confirmed views) More visited: http://www.uicnmed.org/newsletter/2012/the_PEGASO_project.htm http://195.97.36.231/acrobatfiles/08IG18_Final_Act.pdf	 **1420** **1256**
PEGASO NEWSLETTER – no. 1 Spring 2012 (French) E-mails sent: Views (number of confirmed views) More visited: http://www.uicnmed.org/newsletter/2012/le_projet_PEGASO.htm; http://www.uicnmed.org/newsletter/2012/les_sites_pilotes.htm	 **395** **192**
PEGASO NEWSLETTER – no. 2 Autumn 2012 (English) E-mails sent: Views (number of confirmed views) More visited: http://www.uicnmed.org/newsletter/2012/al_hoceima_coast_in_morocco.htm http://www.uicnmed.org/newsletter/2012/progress_on_local_cases.htm	 **1416** **796**
PEGASO NEWSLETTER – no. 2 Autumn (French) E-mails sent : Views (number of confirmed views) More visited: http://cmsdata.iucn.org/downloads/PEGASO_leaflet_lr.pdf; http://www.uicnmed.org/newsletter/2012/avancement_des_etudes_de_cas_locales.htm	 **395** **106**
PEGASO NEWSLETTER – no. 3 Winter 2012 (English) E-mails sent: Views (number of confirmed views) More visited: http://www.uicnmed.org/newsletter/2012/envisioning_the_future_integrated_coastal_zone_management_(iczm)_workshops_for_the_mediterranean_region.htm	 **1416** **898**
PEGASO NEWSLETTER – no. 3 Winter 2012 (French) E-mails sent : Views (number of confirmed views) More visited: http://www.uicnmed.org/newsletter/2012/ateliers_regionaux_%EF%BF%BD_envisioning_the_future_%EF%BF%BD_pour_la_gizc_en_mediterranee.htm; http://www.uicnmed.org/newsletter/2012/integration_de_la_planification_de_l%EF%BF%BDespace_maritime_dans_la_gestion_des_amp_en_mediterranee.htm	 **395** **238**
PEGASO NEWSLETTER – no. 4 Spring 2013 (English) E-mails sent: Views (number of confirmed views) More visited: http://www.uicnmed.org/newsletter/2013/3rd_PEGASO_general_meeting_the_project_gets_more_ambitious.htm http://www.uicnmed.org/newsletter/2013/PEGASO_informs4_en.htm http://www.uicnmed.org/newsletter/2013/PEGASO_indicators_factsheets.htm	 **1357** **730**

PEGASO NEWSLETTER – no. 4 Spring 2013 (French) E-mails sent: Views (number of confirmed views) More visited: http://www.PEGASOproject.eu/wiki/Indicators http://www.uicnmed.org/newsletter/2013/PEGASO_informs4_en.htm http://www.uicnmed.org/newsletter/2013/troisieme_assemblee_generale_de_PEGASO_un_projet_de_plus_en_plus_ambitieux.htm	 **378** **94**
PEGASO NEWSLETTER – no. 5 September 2013 (English) E-mails sent : Views (number of confirmed views) More visited: http://www.uicnmed.org/newsletter/2013/developing_a_common_conceptual_framework_for_the_implementation_of_the_iczm_background_to_the_iczm_governance_platform.htm http://www.uicnmed.org/newsletter/2013/building_research_capacity_in_international_cooperation_partner_countries.htm http://www.PEGASOproject.eu/	 **1357** **565**
PEGASO NEWSLETTER – no. 5 September 2013 (French) E-mails sent : Views (number of confirmed views) More visited: http://www.uicnmed.org/newsletter/2013/developpement_dun_cadre_conceptuel_commun_pour_la_mise_en_uvre_de_la_gizc.htm http://www.uicnmed.org/newsletter/2013/deux_nouveaux_ateliers_sur_la_construction_de_scenarios_au_liban_et_en_turquie.htm	 **378** **225**

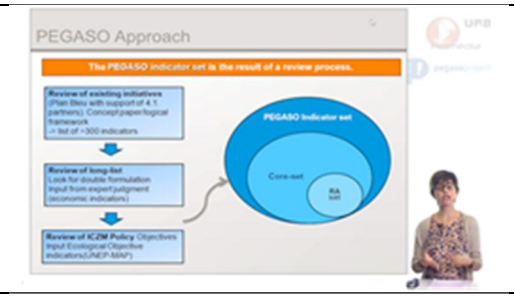
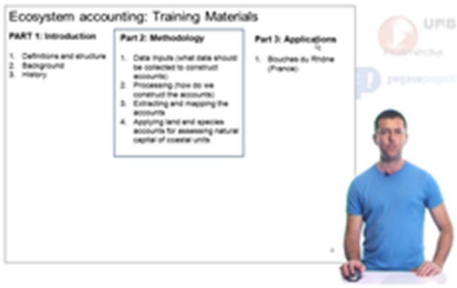
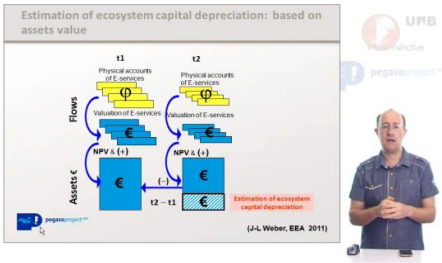
Table 4: List of PEGASO Newsletters

4.5. PEGASO Polimedia Videos

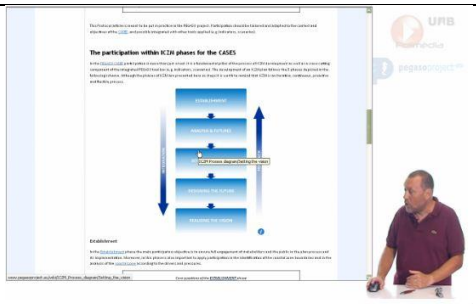
'Polimedia' is a multimedia production system, with educational material content, used to support physical teaching. This teaching material can be distributed via technologies, such as TV, Internet, CDs and mobile phones and more. The recording process combines the simultaneous running of two videos within a single space, with the final product representing a recording of about 10-15 minutes in which the image of the speaker and his/her presentation appear simultaneously. This tool, which was designed at the Technical University of Valencia, has been conducted in the UAB by the Centre for Educational Resources, Faculty of Medicine.

The PEGASO Steering Committee met in Barcelona in September 2012 to decide on the procedures and content of the 2nd PEGASO Virtual Conference (VIC02). VICs have been organised through the PEGASO intranet and it was therefore important to find a system that could replace face-to-face teaching about PEGASO tools. The following 'polimedia' materials were produced in the UAB in September 2012 (Table 5):

Polimedia Videos	Titles, authors, hyperlinks
	Introducing the Map Viewer by César Martínez (UAB): http://polimedia.uab.cat/#v_371

	Selection and application of the PEGASO ICZM Indicators by Francesca Santoro (IOC UNESCO): http://polimedia.uab.cat/#v_381
	Land and Ecosystem Accounts, Methodology by Emil Ivanov (UNOTT): http://polimedia.uab.cat/#v_386
	Mapping the cumulative impact of human activities on coastal and marine ecosystems by François Morisseau (UAB): http://polimedia.uab.cat/#v_385
	Economic Assessment to support ICZM processes by Pascal Raux (UBO): http://polimedia.uab.cat/#v_380

In Rabat in March 2013, members of the PEGASO Steering Committee discussed the possibility of producing a second round of 'polimedia videos', focusing on PEGASO products. The idea was to produce something more "attractive", which was not included in the official deliverables. The following 'polimedia' materials were produced in the UAB in September 2013:

	Participation in ICZM by Stefano Soriani (UNIVE): http://polimedia.uab.cat/#v_441

		The PEGASO platform. Supporting ICZM in the Mediterranean and Black Sea basins by Gonzalo Malvárez (UPO): http://polimedia.uab.cat/#v_442
		The ICZM Process - Roadmap Towards Coastal Sustainability by Brian Shipman (PAP/RAC): http://polimedia.uab.cat/#v_439

Table 5: PEGASO Polimedia Videos

4.6 Lessons learned from dissemination activities

With regards to the dissemination activities developed under the PEGASO project, IUCN-Med created a mailing list of over 1,600 contacts from 62 countries at an early stage in the project, in order to send out e-newsletters. Most of the contacts are experts from scientific institutes and universities, governmental institutions, and NGOs working on marine and coastal issues.

IUCN-Med designed a quarterly e-newsletter with a simple and friendly display, which was available into two languages (English and French). They included links to each news item and a contact person to get further information. An attempt was made to create content in the most appealing way possible, bearing in mind how difficult is to write stories about meetings that are part of complex processes and that their ultimate goal is generally to deliver the results at the end of the project.

The e-newsletters were posted on the IUCN-Med website homepage and on the PEGASO project description page. Twitter has also been used to promote the e-newsletters through two accounts: @llazaromarin (850 followers) and @IUCN_Med (launched in September 2013).

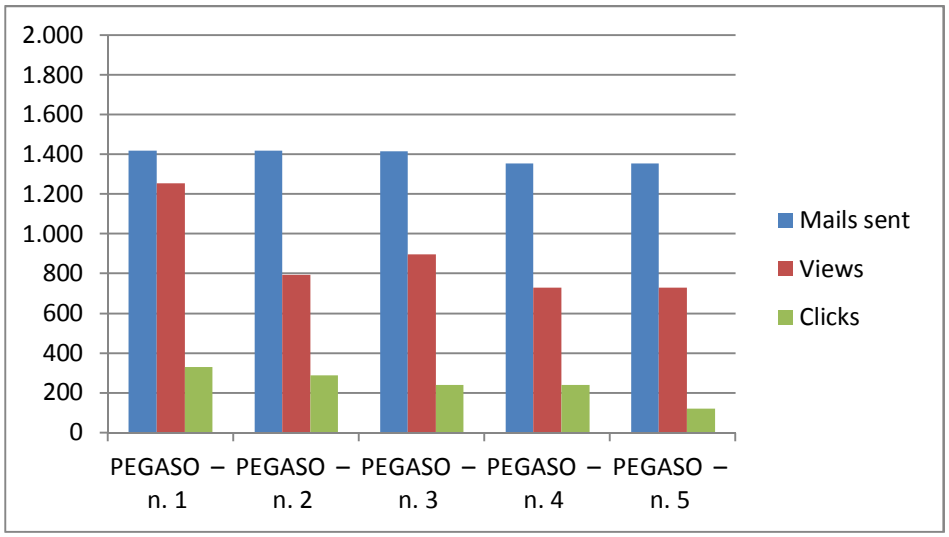


Figure 11: E-mails sent, views and clicks – PEGASO e-newsletters - English version

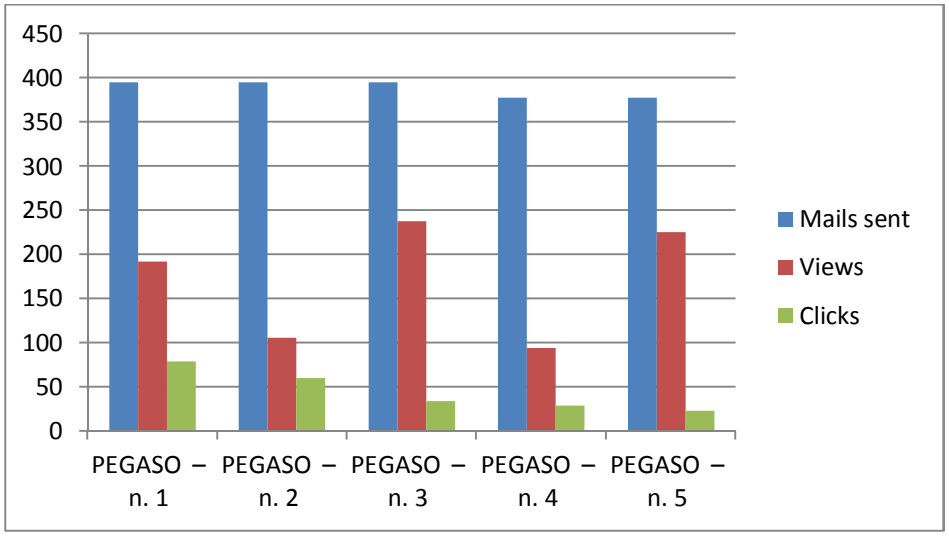


Figure 12: E-mails sent, views and clicks – PEGASO e-newsletters - French version

A positive result was that the number of "unsubscribers" declined over the five newsletters. However, a slight decrease in clicks and views was noticed in almost two years (Figures 8 and 9): more people were interested at the beginning of the project than people who followed up the process (see statistics in Appendix 8).

In terms of the lessons learned from the dissemination activities, it appears that a collaborative project like PEGASO needs a well-coordinated communication/dissemination strategy between all partners. There is great potential for improving outreach through the effective use of communication tools by each partner. There is also room for better identifying primary and secondary audiences, and testing their interest in receiving information about the project. It will be interesting to explore links between social network and e-newsletter dissemination strategies. Good use of social networks by partners could help to improve the dissemination of e-newsletters – e.g. connecting an email system to the Twitter and Facebook accounts of different partners, and offering embedded widgets to share the newsletter on various social platforms.

Regarding the content, the challenge was to continue to make the PEGASO e-newsletters stand out in the crowd and keep readers reading issue after issue. This is a crucial issue for many marketing strategies. One of the most sensitive points was to overcome factual information to dive more into storytelling. This was needed to develop better communication between partners and the project communication leader in order to better understand partners' activities and their potential results. More staff time devoted to communication was also needed.

One point missing in the PEGASO dissemination strategy was to allow interaction with readers. The e-newsletter could encourage interaction through content, e.g. content that asks readers to act – whether something as specific as "Invite them to send feedback", "Share the e-newsletter with friends" or "Interactive polls" as a fun option, etc.

5. Conclusions

(1) PEGASO was a very ambitious project due to reasons such as: multi-disciplinary and transboundary aspects, geographical scope (two regional seas and ten CASES), number and diversity of partners and end-users, etc. One of the challenges was to gather all the participants on an equal footing within the ICZM Governance Platform, even if each one had his own and specific role, despite many disparities due to those specificities: differences in terms of policy and institutional frameworks, cultural contexts, experiences in ICZM.

(2) After four years of experimental implementations, PEGASO is recognized as one of the few real ICZM projects. The ICZM Governance Platform need to be sustained in a sort of a common “knowledge resources centre”, as suggested by members of the End User Committee, providing access to new knowledge and tools, as well as expertise and guidance to the end-user communities, decision-makers and ICZM practitioners. The interdisciplinary and transboundary network of experts built under PEGASO represents a relevant ICZM community in terms of integrated thinking and collective intelligence. The key to success for this momentum is to consolidate the existing links among participants of the ICZM Governance Platform. The robustness of this platform is certainly linked to the willingness of everyone to invest for its sustainability in short and medium terms, but it is also essential to make it coordinated by a recognized and legitimate structure able to provide support in long term. The ICZM Platform needs a well-positioned leader/coordinator to continue to operate and to maintain dynamism and interactions with current users and potential new ones. Institutional support (porting, management) should be undertaken by PAP/RAC, as the RAC especially devoted to support the implementation and follow-up of the ICZM Protocol under the auspices of UNEP/MAP. As leader/coordinator/manager, PAP/RAC should be supported by a Steering Committee, gathering members responsible for the various components of the platform, in accordance of their specific skills and know-how. In addition, a Technical Board should be responsible for the technical development and support of the ICZM Platform, securing the technical tools already existing (intranet, web portal, wiki), sharing harmonized data base fed by countries and CASES, facilitating dissemination of information. The last questions concerning the sustainability of the ICZM Platform are related to the hosting in a competent organization, as well as to the consultation of an Advisory Board gathering National Focal Points and representatives of regional/international institutions

(3) The future of the PEGASO project should be together with the RSCs, namely Barcelona and Bucharest Conventions. The ICZM Governance Platform aimed at serving policy implementation under UNEP/MAP and BSC, and the PEGASO outputs represent added-values for the RSCs: for instance, there are interesting results for the EcAp initiative implemented under the auspices of UNEP/MAP, and the ICZM stock-take exercise became a reporting obligation for the follow-up of the ICZM Protocol. The ICZM Platform has to be considered as a network with the perspective to become a publicly available platform and an ICZM infrastructure for the Mediterranean and Black Sea, including stakeholders from countries, regions, municipalities, economic sectors, NGOs, etc., and supporting the initiatives carried out under the RSCs. Since the project aimed at supporting the implementation the ICZM Protocol, the future of the ICZM Platform would depend on active involvement of the PAP/RAC NFPs. Similarly, the existence within the BSC of the Advisory Group for ICZM (AG ICZM) called for an active contribution in the Black Sea basin. The involvement of NFPs – as end-users of the final products and tools – represent a suitable way for strengthening the ownership of the ICZM Governance Platform. In terms of “partnership” between the RSCs and research institutions under a format that ensures quality of the service and flexibility in management, several options were explored and discussed during the last General Meeting (Antalya, Turkey, 14-17 January 2014), considering the European Topic Centres (ETCs) of the European Environmental Agency (EEA) as source of inspiration. Inviting scientists to present their works at regional policy meetings (for instance NFPs meetings) represent one of those options.

(4) PEGASO revisited and developed useful tools, but useful does not mean usable! According to many members of the PEGASO End User Committee, a tool is not an end in itself but it has to serve a particular purpose. Tools (developed by scientists) are more and more numerous, complex, and difficult to use; some tools need other tools to run themselves… Those constraints limit the operational capacity of the tools, taking them away from their primary role. It is necessary to guarantee technical support and capacity building for national and local institutions, making the available tools known and easy to use by end-users (manuals to use the tools). It is important to train end-users to use PEGASO tools in order to support the ownership of the tools: patterns of operation of the tools, how they should be used and implemented, ensuring the optimal conditions in which they can be operative.

(5) The future and the expansion of the ICZM Governance Platform should be related to the CASES, as a central component of the PEGASO project. Ten CASES were implemented but there are many other territories who deserve to be valued via the platform in order to acquire more and new experiences of ICZM, capitalizing on best practices. In view of additional operational use of the ICZM Platform and PEGASO tools, maintain the PEGASO community/family to maintain its potential and its expertise is fully necessary. That is needed to formalize and enhance the outputs and final products for application in new sites and voluntary territories (CASES 2.0), as components of the ICZM Protocol implementation. Behind the idea of “mushrooming strategy”,

there is the challenge of consolidation and replication of the CASES. The suggested concept is quite simple, as follows:

- Identifying and selecting possible new CASES, in close collaboration with relevant authorities and stakeholders, particularly in countries where there was not PEGASO CASES;
- Supporting these new sites/CASES to declare their intent to join the ICZM Platform;
- Offering them access to the network, knowledge, toolbox, and lessons learned;
- In return, new CASES will feed the platform with their own experiences.

(6) Finally, it is needed to consolidate, develop and valorise what PEGASO built and produced (tools, technical products), but also and above all the capacity of collective expertise/intelligence thanks to the integration through a "regional ICZM community". Created and mobilized during the lifetime of the project, this community showed its ability to bridge the gap between scientists and end-users, notably via integrated exercises: for instance, 'BBN-Visioning exercises' were very useful to bring people together to build a common vision, merging modelling and participatory approaches. If the good cooperation spirit/scheme was indisputably the most important added value of the project, keeping alive the ICZM Governance Platform is definitively the new challenge.

Following the "guidelines and lessons learned" for and from the PEGASO ICZM Governance Platform, the challenge is now to make the results of the project "mainstream" and sustain the ICZM Governance Platform in the medium and long term. According to Christophe Le Visage, "*that would mean identifying relevant opportunities, initiatives, programmes and projects linked to the PEGASO approach, in order to continue on the same track. One possible option would be to build a 'coastal knowledge centre' as an 'information portal' (geographic information, documentary information, metadata) to support ICZM processes and knowledge sharing in the Mediterranean and Black Sea basins*" (Interview, April 2013).

During the four year duration of the project (February 2010 - January 2014), PEGASO delivered innovative and useful services and products. Therefore, the procedure adopted at the last stage of the project was organised along the PEGASO "follow-up strategy" to sustain the ICZM Governance Platform in the future. This strategy is the purpose of Deliverable D2.4B "Business Plan" presented in Antalya (Turkey) at the PEGASO Closing General Meeting (14-17 January 2014).

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Appendix 1: The PEGASO consortium

PEGASO Partner	Acronym	Country
Eight Universities		
Universitat Autònoma de Barcelona	UAB	Spain
Universidad Pablo Olavide	UPO	Spain
Université de Bretagne Occidentale (UMR AMURE)	UBO	France
The University of Nottingham	UNOTT	United Kingdom
Ca'Foscari University of Venice	UNIVE	Italy
Université de Genève	UNIGE	Switzerland
Université Mohammed V - Rabat Agdal	UM5a	Morocco
University of Balamand	UOB	Lebanon
Six Research Centres		
French Research Institute for Exploration of the Sea	IFREMER	France
Hellenic Centre for Marine Research	HCMR	Greece
Danube Delta National Institute for Research and Development	DDNI	Romania
Marine Hydrophysical Institute-Ukrainian National Academy of Sciences	MHI	Ukraine
National Institute of Oceanography and Fisheries	NIOF	Egypt
National Authority for Remote Sensing and Space Sciences	NARSS	Egypt
Two Regional Activity Centres of the UNEP/MAP		
Plan Bleu	Plan Bleu	France
Priority Action Programme/Regional Activity Centre	PAP/RAC	Croatia
One European Research Centre		
Commission of the European Communities - Directorate General Joint Research Centre	JRC	Belgium
One Regional Organisation		
Black Sea Commission against pollution Permanent Secretariat	BSC-PS	Turkey
One International Institution		
Intergovernmental Oceanographic Commission	IOC-UNESCO	France
One National Institute		
Flanders Marine Institute	VLIZ	Belgium
Three Non-profit Associations and Organisations		
International Union for Conservation of Nature	IUCN	Spain
Mediterranean Coastal Foundation	MEDCOAST	Turkey
Association for Reflection and Action on the Environment and Development	AREA-ED	Algeria
Two Small and Medium Enterprises		
ACRI Etudes et Conseil	ACRI-EC	Morocco
Tour du Valat Foundation	TDV	France

Appendix 2: The PEGASO End User Committee

Name	Country	Institution / Function / Details
End User Committee / Mediterranean Section		
Mr Christophe Le Visage	France	**Focal Point of the End User Committee**. International expert on Integrated Maritime Policy in the Mediterranean
Ms Athena Mourmouris	Greece	Ministry of Environment, Energy and Climate Change, PAP/RAC NFP
Mr Mohamed Farouk	Egypt	Ministry of the Environment, PAP/RAC NFP
Mr Mitja Bricelj	Slovenia	Ministry of the Environment, PAP/RAC NFP
Ms Samira Natèche	Algeria	Ministry of the Environment and Spatial Planning. Plan Bleu and PAP/RAC NFP
Mr Pablo Ávila Zaragozá	Spain	Aquaculture international expert. Aquaculture, Farm Management and Fisheries Agency of Andalusia
Mr Nejib Benessaiah	International	MEDWET, RAMSAR NFP
Mr Bouchta El Moumni	Morocco	Polydisciplinary Faculty of Larache, Tangiers-Tetouan University. Fishery Research National Institute.
Mr Pierre Boissery	France	Rhône-Mediterranean-Corsica Water Agency
Ms Aroussia Khamassi	Tunisia	Office National du Tourisme Tunisien (Tunisian National Tourist Office - ONTT)
Mr Alessio Satta	Italy	Agenzia conservatoria delle Coste della Sardegna (Sardinia Coast Conservation Agency)
Ms Daniela Addis	Italy	Consultant. Environment policy. UNEP/MAP Compliance Committee
End User Committee / Black Sea Section		
Mrs Nino Chkhobadze	Georgia	The Greens Movement of Georgia / Friends of the Earth Georgia; Environmental NGO
Mr Gheorghe Constantin	Romania	Ministry of Environment and Forests, Water Resources Management Directorate (2011)
Mr Mihail Costache	Romania	Ministry of Environment and Climate Change, Directorate of Management and Control of Water and Fisheries Resources (2013)
Mr Konstantin Rashkov Galabov	Bulgaria	Free-lance Consultant. Policy adviser
BSC ICZM NFPs who attended at the PEGASO First General Meeting (Tulcea, Romania, July 2011)		
Mrs Valeria Abaza	Inter-governmental	BSC-PS. Pollution Monitoring and Assessment Officer (PMA Officer)
Mr Yavor Dimitrov	Bulgaria	ICZM NFP. Representative Head, Experts Sector, Planning Department, Black Sea Basin Directorate-Varna
Dr Mamuka Gvilava	Georgia	ICZM NFP Georgia. PEGASO Task Manager for BSC-PS
Mrs Catalina Ispas-Sava	Romania	ICZM NFP Romania. Senior Researcher, National Institute for Marine Research and Development "Grigore Antipa"
Mrs Ekaterina Antonidze	Russia	ICZM NFP Russian Federation Representative. Chairwoman of the Black Sea ICZM Advisory Group, PEGASO Coordinator for BSC-PS, Senior Specialist, Kuban Basin Water Directorate
Dr Bahar Erkopan Eser	Turkey	ICZM NFP Turkey Representative, City and Regional Planner, Ministry of Environment and Forestry

Appendix 3: Key findings of the ICZM stock-taking for the Mediterranean Region

Results of the 'ICZM Stock-Taking' for the Mediterranean (PAP/RAC, 2013)

The 'ICZM stock-take for the Mediterranean' offered provided a wealth of data and information about the current state of ICZM in the Mediterranean and the implementation of the ICZM Protocol. The broad pattern that emerged was that there is a substantial level of activity overall, but that the distribution is uneven both thematically and geographically. Early results of the stock-take have already provided information for the approved Action Plan for the implementation of the ICZM Protocol in 2012-2019. The conclusions of the overall responses to the individual Articles are summarised in the table below.

Stock-taking themes	Key findings
Art. 3 Geographical Coverage	- The harmonised delimitation of Coastal Zone boundaries is still incomplete. The landward limit varies widely, from narrow coastal strips measured in metres, to those recommended by the Protocol.
Art. 7 Coordination	- Progress is slow in establishing ICZM consultative mechanisms with some examples of good practice. Progress in establishing coordination at national level corresponds to improved coordination at local levels.
Art. 8 Protection and Sustainable Use of the Coastal Zone	- The principle of a "set back" zone for development is widely accepted and, in some cases, long established. Enforcement remains a challenge. - Similarly, control of urbanisation remains a problem as only a minority of countries have development control provisions consistent with the Protocol. - Freedom of access rights to the foreshore and sea by the public are widespread and are seen as common rights across much of the Mediterranean.
Art. 9 Economic Activities	- The use of indicators to evaluate economic impacts on the coastal zone is very limited with no comprehensive activity in this field.
Art. 10 Specific Coastal Ecosystems	- The protection and regulation of sensitive areas through designation is well advanced. Most states have specific protection measures. - International and European agreements and also cooperation programmes have stimulated a high level of activity around the Mediterranean in the field of coastal and marine habitat conservation and protection. - Coastal landscape protection is generally contained within measures intended for the entire national territory rather than specifically for the coast. There is an interesting diversity of landscape typologies. - The specificity of islands is generally recognised in national legislation.
Art. 13 Cultural Heritage	- The protection of land-based cultural heritage is well established. The protection and accessibility of underwater sites however is underdeveloped.
Art. 14 Participation	- The involvement of stakeholders through consultation, formal inquiries or mediation is not seen as a basic right in all countries and where it exists, it ranges from a mandatory right to *ad hoc* discretionary arrangements. Similarly, arrangements for partnerships are more often short-term and project-based.
Art. 15 Awareness Raising, Training, Education and Research	- There is a huge variety of approaches and a wealth of experience. The annual Mediterranean Coast Day is seen as key activity. - There are relatively few dedicated ICZM centres, but many operating in related fields dealing with the subject. PAP/RAC and MEDCOAST are identified as region-wide networking organisations.
Art. 16 Monitoring & Review	- There is a low level of national inventories for coastal resources and activities, institutions, legislation and planning. The Protocol is not clear on what is meant by such an inventory so there may be scope for some further discussion and guidance.

Art. 18 National Coastal Strategies, Plans & Programmes, Trans-boundary Cooperation	- There are few national coastal strategies; a number are under preparation. - Only a minority of countries report comprehensive and up-to-date assessment of the use and management of the coast. There is no common methodology for undertaking or interpreting such assessments. - ICZM projects have been common throughout the Mediterranean in the past decade, and nearly all countries report their value in developing national strategy. The CAMP projects predominate both spatially and over time.
Art. 19 Environmental Assessment	- The environmental assessment process is widely used in all but one country; environmental assessments are predominantly used in EU Member and Candidate States.
Art. 20 Land Policy	- Little is known with regard to the amount of coastal land in the public domain. There are public domain models that may be transferable and could provide the basis for transnational projects.
Art. 21 Economic, Financial & Fiscal Instruments	- Only a small minority of states indicate the use of economic or financial instruments to support ICZM.
Art. 22 Natural Hazards	- Comprehensive risk assessments for the coast are rare. There are many sectorial risk analyses such as flooding or pollution, but few have considered the implications of climate change.
Art. 27 Exchange of Information and Activities of Common Interest	- Demonstration projects have had a significant impact across the stock-take, underlying their wider importance both as 'test beds' for the development of ICZM and in contributing to wider experience and policy formulation at higher national and Mediterranean levels. - There are a wide variety of host institutions for ICZM scientific capacity across the region. There is ongoing potential for sharing this expertise through a meta-network such as a "Mediterranean Network of Coastal Research".
Art. 29 Transboundary Environmental Assessment	- Bilateral memoranda of understanding or projects are common and have been particularly successful in promoting cross-border, transnational and interregional co-operation. - Co-operation between states exists for marine pollution prevention, but sustained transboundary co-operation on plans, programmes and projects is not universally applied.

Appendix 4: Key findings of the ICZM stock-taking for the Black Sea Region

Results of the 'ICZM Stock-Taking' for the Black Sea (BSC-PS)

The synthesis report to document the outcomes of the ICZM implementation audit in Black Sea countries (PEGASO Deliverable D2.2C) was produced by BSC-PS. It was co-written by the ICZM NFPs in Black Sea countries, including the AG ICZM Chairperson (Antonidze et al., 2013). The deliverable largely drew on and extended the preliminary findings of the initial stock-taking audit, performed in 2010 and presented in the proceedings of the 11th MEDCOAST Conference (Abaza et al., 2011).

The answers given by the BSC ICZM NFPs to each of the 53 stock-taking questions were collated under the headings of 16 logically connected/grouped themes, as defined in the audit questionnaire. Concise assessment of the overall results of the stock-taking was provided, which drew conclusions and gave a preliminary set of recommendations for the possible way forward with the Black Sea ICZM process at national and regional level, with the aim of resolving the issues identified during the stock-taking exercise in the longer term. These findings and conclusions for the Black Sea stock-taking are developed in the table below for each main stock-taking theme.

Stock-taking themes	Key findings
Coastal zone boundaries	- A harmonised delimitation of Coastal Zone boundaries is required.
ICZM legislation	- Defining common principles would help national initiatives to legislate ICZM.
Coordination	- Consultative forums should contribute to integration rather than dilute the focus.
Protection and sustainable use of the Coastal Zone	- Coastal development control, setback regulations and practical mechanisms for guaranteeing cross-shore and long-shore access provisions are required.
Coastal ecosystems, landscapes & cultural heritage	- More attention needs to be paid to marine protected areas, wetland restoration and the protection of coastal landscapes as part of the ICZM agenda.
Participation	- Participation should be seen as an integral part of the ICZM governance process with genuine opportunities and mechanisms for the public to challenge the strategies, plans and projects prior to key decision-making steps.
Awareness raising, training, education & research	- ICZM centres of excellence are missing in the countries and at regional level. - More effort is required to develop and deliver training and education in ICZM.
Monitoring & review	- Monitoring & review of the progress with ICZM should be built into administrative arrangements.
National coastal strategies, plans and programmes	- Regional arrangements could prescribe common formats for guiding national ICZM strategies and plans. - Pilot projects and cases should be pursued to apply ICZM at all levels.
Environmental Assessment guidelines	- Some Black Sea countries need to upgrade their Environmental Assessment systems to bring them in line with best international practice. - Regional arrangements for Environmental Assessment in transboundary contexts should be pursued and agreed upon for the Black Sea marine region.
Land policy	- The various models for the transfer and management of coastal land in the public domain are worth considering by administrations lacking suitable powers or effective legislation.
Economic instruments	- Sound economic and financial instruments are evidently missing in the region.
Natural hazards & coastal erosion	- Assessment and readiness for resulting climate change and other coastal hazards need advanced planning. The time to start acting is now.
Exchange of information and activities of common interest	- An easy to use and upgraded common set of coastal (including socio-economic) indicators and ecosystem accounts are warranted to monitor changes in the coastal zones, and to observe the outcomes of management efforts.

	- Use of ICZM progress indicators should be continued on a permanent basis.
Transboundary cooperation	- International cooperation within the BSC framework is the key driver for ICZM in the region. More visibility and functionality would support the process. - Black Sea countries should use the opportunity of Turkey as the only Mediterranean & Black Sea country and promote, adapt and adopt the best management solutions available in the partner marine region, such as the ICZM Protocol.

Appendix 5: Synergy with other initiatives

MEDPARTNERSHIP

The UNEP/MAP GEF Strategic Partnership for the Mediterranean Sea Large Marine Ecosystem (MedPartnership) is a collective effort by the leading organisations and countries sharing the Mediterranean Sea for the protection of the marine and coastal environment. The MedPartnership is led by UNEP/MAP and the World Bank and is financially supported by the Global Environment Facility (GEF) and other sponsors, including the EU and participating countries. The project is implemented in close association with other relevant regional initiatives, such as Horizon 2020, the EU Integrated Maritime Policy or the World Bank/GEF Sustainable Mediterranean Program, etc. The project also contributes to the sustainable development objectives of the Union for the Mediterranean (UfM). It is carried out in the following GEF eligible countries: Albania, Algeria, Bosnia and Herzegovina, Croatia, Egypt, Lebanon, Libya, Morocco, Montenegro, Syria, Tunisia and Turkey, with the additional participation of Palestine.

GENERAL FISHERIES COMMISSION FOR THE MEDITERRANEAN, GFCM

The Agreement for the establishment of the General Fisheries Commission for the Mediterranean (GFCM), under the provisions of Article XIV of the FAO constitution, was approved by the FAO Conference in 1949 and entered into force in 1952. Amendments to this Agreement were approved in 1963, 1976 and 1997. The latter amendments were related to the change in name of GFCM previously "General Fisheries Council for the Mediterranean" and to new obligations for the Contracting Parties including their contributions to an autonomous budget.

Consisting of 23 Member countries along with the European Union, the GFCM's objectives are to promote the development, conservation, rational management and best utilization of living marine resources, as well as the sustainable development of aquaculture in the Mediterranean, Black Sea and connecting waters. Membership is open to both Mediterranean coastal states and regional economic organizations as well as to United Nations member states whose vessels engage in fishing in Mediterranean waters. The CAQ is Its Commission on Aquaculture. PEGASO has engaged collaborations with GFCM and the CAQ.

ClimVar

The project for the "*Integration of climate variability and change into national strategies to implement the ICZM Protocol in the Mediterranean*" (ClimVar project) is implemented by UNEP and supported by four executing agencies: UNEP/MAP, Plan Bleu, PAP/RAC, and GWP-Med. Eleven countries are participating in this project: Albania, Algeria, Bosnia and Herzegovina, Croatia, Egypt, Libya, Morocco, Montenegro, Syria, Tunisia, and the Palestine Authority.

The overall project objective is to promote the use of ICZM in participating countries as an effective tool to deal with the impacts of climate variability and change in coastal zones. The project aims to strengthen knowledge of the impacts of climate variability and change in the Mediterranean and strengthen partnerships, improve capacity building, and establish data and information exchange mechanisms for the integration of climate variability and change within concrete ICZM policies, plans and programmes.

SHAPE

The SHAPE project aims to develop a multilevel and cross-sector governance system, based on a holistic approach and the integrated management of natural resources, risk prevention, and conflict resolution among uses and users of the Adriatic coast and sea. Project activities promote the implementation of the ICZM Protocol for the Mediterranean and the Roadmap for Maritime Spatial Planning (MSP) in the Adriatic region. The primary aim of this report is to encourage and help users/stakeholders to adjust their legal instruments and institutional arrangements to the requirements of Article 7 of the ICZM Protocol. One interesting product from the project is the Explanatory Report on how to address the vertical and horizontal dimensions of coordination and institutional integration for ICZM.

MAREMED

The MAREMED project is led by the Provence-Alpes-Côte d'Azur Region (France), in partnership with the Regions of Cyprus, Greece, and Italy, and the Conference of Peripheral Maritime Regions (CPMR) to develop Integrated Maritime Policy (IMP) in the Mediterranean. It aims to strengthen the coordination of regional maritime policies between themselves and also with those in force at national, European and Mediterranean levels. The project focuses on the parts of maritime policy that have a transnational dimension, such as pollution (including small and medium scale accidental coastal pollution), adaptation to climate change in coastal areas, fisheries, and coastal and maritime data management.

The Bologna Charter 2012

The "Bologna Charter 2012" aims to reinforce the role of coastal administrations in European policies and initiatives for the Mediterranean. It also promotes a macro-project initiative for the next European Structural Funds programming period (2014-2020) which is designed to produce a coherent Mediterranean macro-thematic and multi-sectoral strategy and is also open to Southern and Eastern Mediterranean coastal administrations.

The 2012-Charter re-launched the principles of the former political agreement (the Bologna Charter 2007, born out of the BEACHMED-e Regional Framework Operation) and has been developed within the MAREMED project, with the support of the FACECOAST Med-cluster – a PEGASO partner. The first step towards ratification of the "Bologna Charter 2012", following its official transmission to the first phase partner administrations (20 Mediterranean coastal administrations), was the meeting held in Bologna (Italy, 29 October 2012) between Emilia-Romagna Regional Councillor of Soil and Coast Defence and Civil Protection, Paola Gazzolo, and the Vice President of the Council of Hérault Department (Languedoc-Roussillon Region, France), Monique Petard.

Two PEGASO partners, UAB and UPO, have joined forces with FACECOAST partners to create a successful project proposal that capitalises on various projects, including the COASGAP project, whose kick-off meeting was held on 19-20 September 2013 in Ferrara (Italy). The PEGASO partners will be in charge of capitalising on the SDI and tools and strengthening the regional network, by suggesting best practices to build relationships with the post-PEGASO Governance Platform.

MEDINA

MEDINA (Marine Ecosystem Dynamics and Indicators for North Africa) is a 3-year EU funded project (FP7) aiming at enhancing the capacities of North African countries (Morocco, Algeria, Tunisia, Libya, and Egypt) in monitoring their Mediterranean marine and coastal ecosystems, in line with European and Mediterranean environmental policies, conventions and protocols. MEDINA focuses on the full integration of coastal monitoring tools in GEOSS (Group of Earth Observation System of Systems).

Several PEGASO partners are involved in the MEDINA consortium, such as UAB, UPO, NIOF, AREA-ED, IUCN or ACRI-EC, and PAP/RAC and Plan Bleu are members of the Advisory Group. The 'MEDINA e-Infrastructure' is similar to the PEGASO SDI and has the same coordinator (UPO).

Terms of reference for collaboration and data exchange between the PEGASO and MEDINA projects have been developed and MEDINA has taken part in many PEGASO capacity building events in ICPC countries, such as Algeria (13-14 November 2013) and Egypt (14-15 December 2013).

MEDINA is one of the rare European projects focusing on North Africa that allows for the development of cross-cutting views between countries and also takes advantage of the work carried out at pilot study level. The project helps cross-border cooperation in the North Africa sub-region and should strengthen the PEGASO approach in SEMCs, particularly in countries without PEGASO CASES (e.g. Algeria, Tunisia, and Libya).

PERSEUS

PERSEUS (*Policy-oriented marine Environmental Research for the Southern European Seas*) is funded by the EU (FP7) and is a collaborative research project assessing the dual impact of human activity and natural

pressures on the Mediterranean and Black Seas. The project combines natural and socio-economic sciences to predict the long-term effects of these pressures on marine ecosystems. PERSEUS aims to implement the MSFD principles across the Southern European Seas (SES - Mediterranean and Black Sea basins) and develops “Stakeholder Platforms” to strengthen communication between scientists and decision-makers. The project also aims to strengthen the application of EcAp, which was initiated in 2008 by UNEP/MAP. Plan Bleu coordinates the “Adaptive policies and scenarios” activities within the project’s “Policy Cluster” (WP6). This UNEP/MAP RAC is also responsible for the tasks related to the socio-economic assessment of maritime and coastal activities. Other PEGASO partners are involved in the PERSEUS consortium.