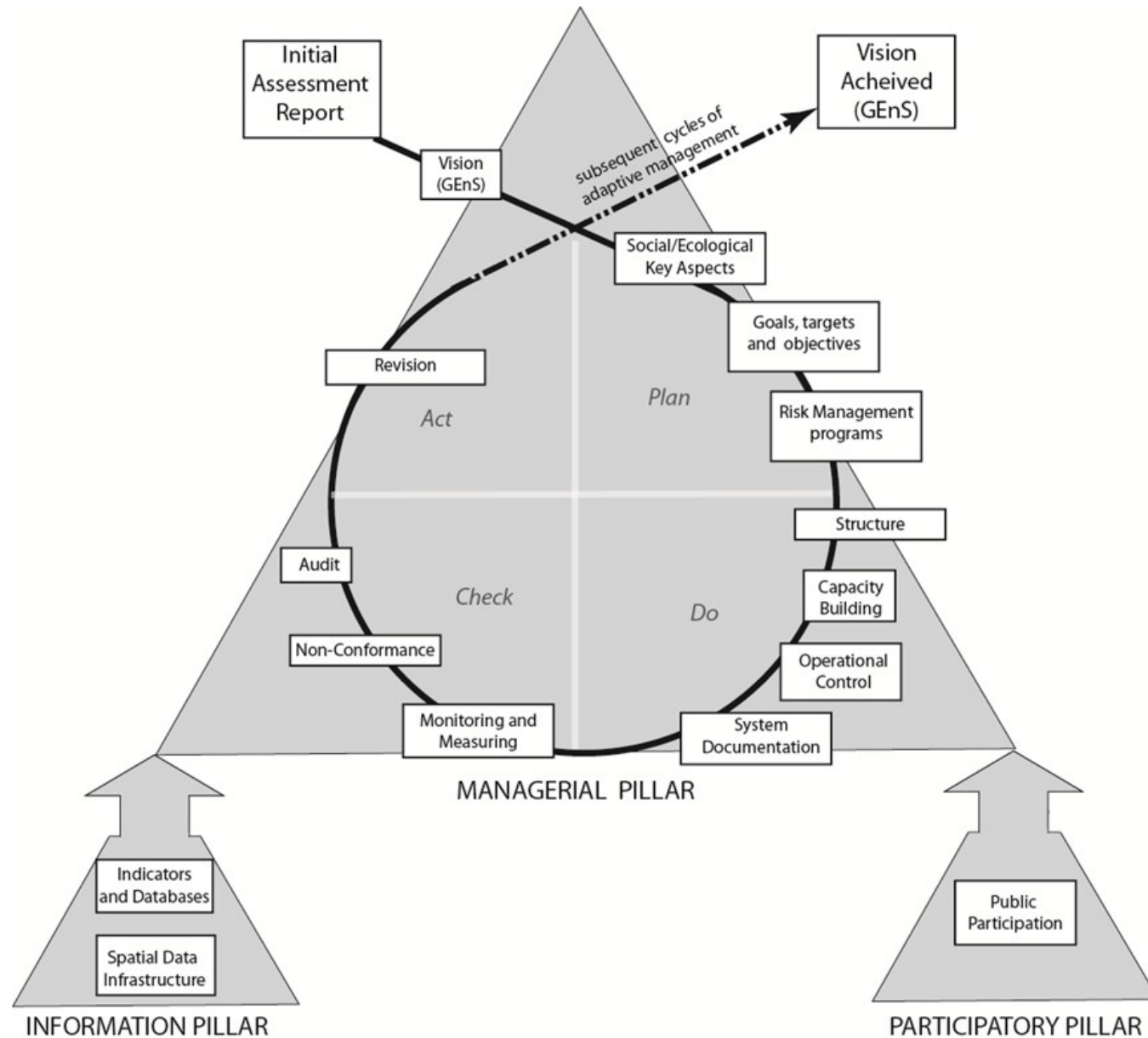
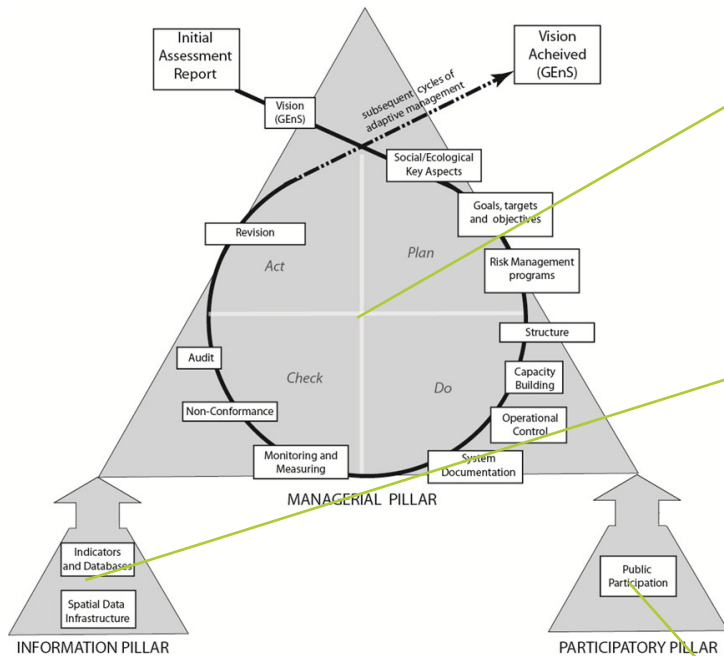


A Standard approach to achieving Good Environmental Status

The Ecosystem Based Management System (EBMS)





MANAGERIAL PILLAR

The Managerial pillar is the engine of the EBMS. The Managerial pillar of our EBMS is based on the ISO14001 standard structure in which the planning phase and the implementation and operation phase works with the newly launched ISO 31000 principles and tools for Risk Management.

INFORMATION PILLAR

Spatial data are a prerequisite for conducting an Ecosystem Approach. Since the ecosystem approach focuses on social/ ecological systems, multi-disciplinary data describing both environmental and human properties and processes (including physical, chemical, biological, social and economic data) are required to support it. The information pillar of the EBMS is thus essential to its function. An operational Spatial Data Infrastructure is critical to improving the way in which we manage our natural capital.

PARTICIPATORY PILLAR

Participation requires active involvement of the people affected by measures in the decision making process which generates these measures. For the EA to be truly effective it must have the support of all levels of society, sectors and stakeholders. In addition, participation needs to be adequately linked with accurate and relevant information on the social ecological system and the capacity to understand and to judge the issues under management. The Ecosystem-Based Management System (EBMS) is intended to enhance communication with stakeholders and to service needs for capacity building.

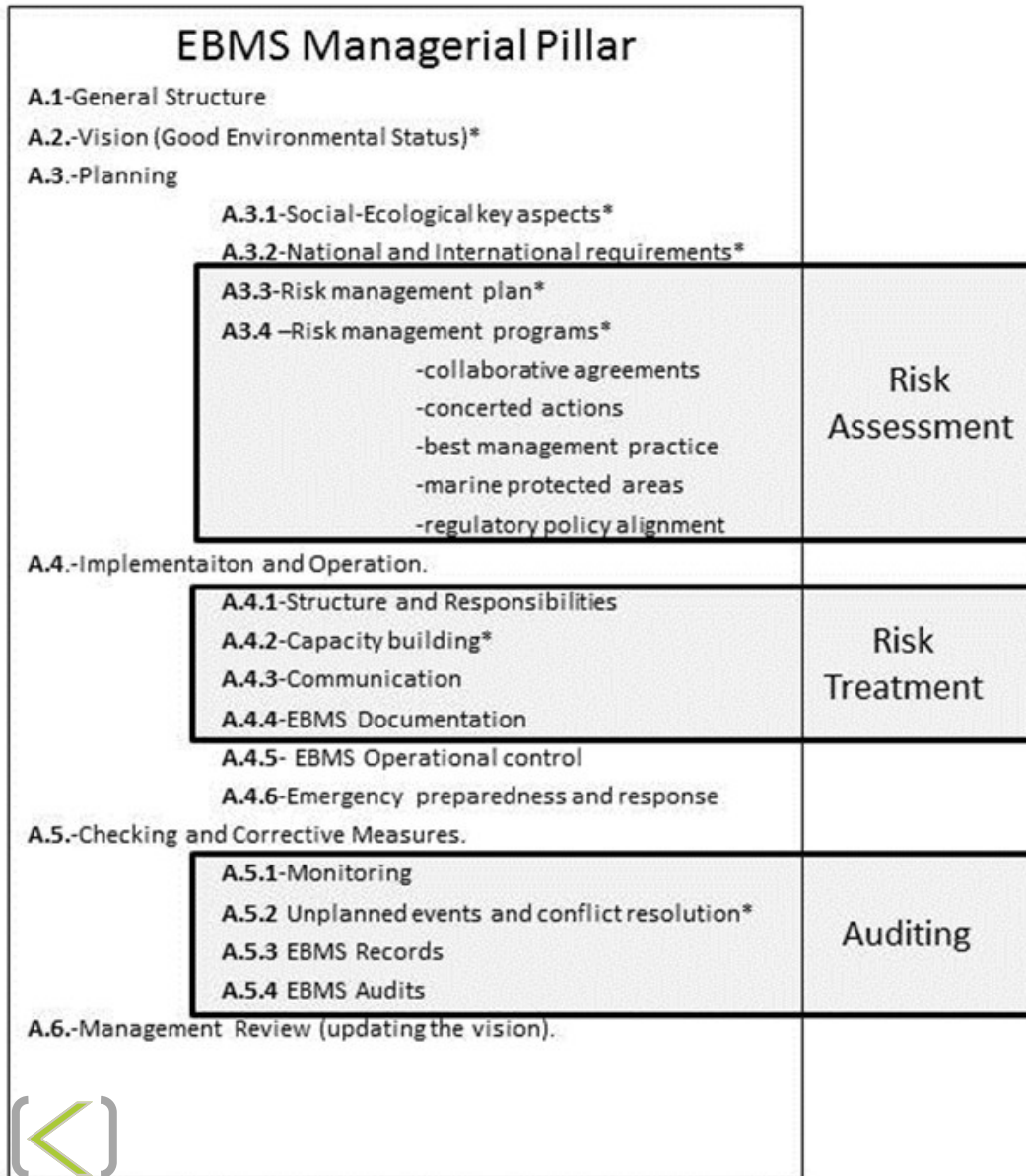
INITIAL ASSESSMENT REPORT

The first step in the EBMS is the Initial Assessment describing the baseline conditions for a specific social and ecological system operating in a particular area or region. This report should include information on current status and trends, pressures, and recommendations for management. The IA provides the basis for identification of objectives, initial planning and decision-making for the entire system



MANAGERIAL PILLAR

Steps to follow for implementing the EBMS
The steps marked with an asterisk differ from the existing.



A.1 General structure

A.2 Defining your vision

The next step is to generate a vision for the Social-Ecological System. Under the Marine Strategy Framework Directive (MSFD), the vision is Good Environmental Status (GEnS) for a particular site. The vision establishes the goals for environmental performance (under MSFD, based on the 11) against which the effectiveness of the management system will be judged. The goals of the vision should be clear and verifiable.

A.3 Planning phase

Planning should address the significant risks that could impede achievement of attaining GEnS. These risks fall into two main groups:

- 1) those derived from external pressures and/or events that can separate future and/or present environmental states from the desired ones (Exogenous pressures).
- 2) those related to an evaluation of the capacity of the region to provide ecosystem services, based on the GEnS indicators (Endogenous properties).

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A.3.1.- Social-Ecological key aspects.- The Effective Governance Structure (EGS) in charge shall establish and maintain a procedure to identify aspects (events, hazards, human activities, ...) that may have an influence on achievement of Good Environmental Status (GEnS) for the site under management. In order to determine the aspects of the system which have or could have significant impacts on the different indicators of each descriptor. The EGS shall ensure that the aspects related to those significant impacts that can impede the achievement and/or the maintenance of our main goals are considered in the analysis.

A.3.2.- National and International requirements.- The EGS shall establish and maintain a procedure to identify all National and International requirements under which the area/region under management has obligations. The Initial Assessment (IA) is the starting point for this activity and should be updated when any relevant legislative or regulatory change are made.

A.3.3.- Risk Management Plan.- The EGS shall establish and maintain the documented Plan, with its objectives and targets, for the indicators addressed by each relevant descriptor. The Plan is the latest document based on the disk assessment procedure in **A3.1.** once significant aspects have been identified, assessed, and prioritized in the list. The Plan sets the intermediate goals for a particular time in our roadmap toward GEnS. Objectives and targets shall be consistent with the desired vision. When setting these objectives and targets, the EGS should consider the establishment of measurable environmental performance indicators than can be used as the basis for an environmental performance evaluation system which will provide information to management about the functioning of the system. The risk management plan should also contain a plan for communication of risk to appropriate stakeholders. Objectives and targets should be realistic, and easily understood to all members of the EGS and related stakeholders.

A.3.4.- Risk Management Programs.- The EGS shall establish and maintain a series of risk management programmes and procedures intended for each management period upon which audits and reviews will be carried out. Each program develops specific, temporal prioritized actions established against environmentally significant aspects, in order to reach specific objectives and targets.

Under the MSFD Annex VI (EU, 2008) a wide range of programs can be established including collaborative agreements, concerted actions, best management practices, input-output projects.



A.4. The implementation and operation phase

A.4.1.- Structure and responsibilities.- Roles, responsibilities and authorities shall be defined, documented and communicated in order to facilitate effective management. Management shall provide resources essential to the implementation and control of the EBMS. Resources shall include human resources and specialized skills, technology and financial resources. In consideration of the key social ecological aspects defined in **A3.1.**, a specific management representative will be appointed who, irrespective of other responsibilities shall have defined roles, responsibilities and authority. The structure needs to be developed with the help of other stakeholders identifying risk owners and giving them the authority to manage risks, be accountable for them and ready to report on them.

A.4.2.- Capacity building.- The EGS shall identify training needs. It shall ensure that all stakeholders and managers, whose work may create significant impact on the environment, have knowledge that a particular site is managed under EBMS and provide specific training on the EMBS for managers. A defined training period will be specified. The purpose of the training will be to explain the relevance of the EMBS to staff, and to explain their responsibilities for EMBS operations. In order for responsibilities to be effectively understood, adequate knowledge is essential for stakeholders to ensure that they understand the EBMS and its goals, know their responsibilities and have the knowledge to carry out those responsibilities.

A.4.3.- Communication.- The risk management communication plan should be implemented developed in **A3.3** . Internal risk management communication and reporting processes as well as external communication plans must be established. The external plan should describe how you intend to communicate with your external stakeholders. At this level, the use of a consultative team approach or a delegated authority to communicate and consult with your organization's stakeholders is important. The team or the individual person also should have the authority to oversee the implementation of the risk management strategies and report on its implementation in collaboration with other authorities and stakeholders, as well as to react and respond to whatever implementation problems may arise. Stakeholder involvement bodies should be developed including but not limited to an advisory board and communications group established by the EGS and containing expertise in natural and social sciences as well as representatives of public and economic agents.

A.4.4.- EBMS Documentation.- The EGS should maintain the programmes needed to achieve its objectives and targets. Each program should develop specific actions in order of priority reflecting the desired overall vision for the system. The actions must be included in the documentation of the program so that crucial operational practices and responsibilities are reviewed, revised, and redeployed regularly.

A.4.5.- EBMS Operational Control.- The EGS shall identify those operations and activities associated with the identified Social-Ecological key aspects in line with its policy, objectives and targets. Implementation of the EMS begins with the establishment of Operational Controls to verify that the vision, targets, and objectives are achieved. Training, procedures and instructions are all-inclusive components of this Operational Control.



A.4.6.- Emergency preparedness and response.- The EGS shall establish and maintain procedures to identify potential for and respond to accidents and emergencies, as well as for preventing and mitigating the environmental impacts that may be associated with them. The philosophy behind emergency preparations is to pre-plan emergency actions to mitigate, reduce, and/or eliminate the environmental health and safety impacts and their environmental implications

A.5 The checking and corrective measures phase

The checking and corrective action stage is based on the development of compliance monitoring programs, including monitoring of program activities, compliance verification and audits. At this stage, the management system should be able to assess the level of conformity with successful outputs of associated programs and the effectiveness of these programs in achieving the vision proposed for the management system. The audit should determine the level of conformity in the way the objectives have been reached as well as the effectiveness of actions in protecting the marine environment under management.

A.5.1.- Monitoring.- The EGS shall establish and maintain documented procedures to monitor and measure on a regular basis, the key social-ecological aspects that have a significant impact on the environment. This shall include the recording of information to track distance to GEnS, relevant controls and conformance with the organization's environmental objectives and targets for the different cycles. Documenting all this information is fundamental to the performance evaluation of the management.

A.5.2.- Unplanned events and Conflict resolution capacity.- The EGS shall establish an alert system to detect inappropriate functioning in the system and/or unexpected environmental hazards/activities. The system should initiate corrective action to mitigate any impacts caused by such unplanned and unexpected events as well as the internal and external conflicts derived from those situations. At this level, the system can make use of the techniques implemented in the conflict resolution tools (described below).

A.5.3.- EBMS Records.- The EGS shall establish and maintain procedures for the identification, maintenance and disposition of social-ecological key records used in the system as well as the evaluation of the indicators selected for the descriptors of GEnS. These records shall include indicators, training records and the results of audits and reviews. All records obtained shall be legible, identifiable and traceable to the program involved. Environmental records shall be stored and maintained in such a way that they are readily retrievable and secured. This information serves a very valuable function not just for the management of a particular site but also for educational purposes in the use of the system elsewhere. The retention times for documents shall be established and recorded.

A.5.4.- EBMS Audits.- The EGS shall establish and maintain a program and procedures for periodic system audits to be carried out, in order to: a) determine whether or not the EBMS conforms to planned arrangements for the social-ecological system management including the requirements of this standard system, and b) whether or not the EBMS has been properly implemented and maintained; and provide information on the results of audits to management. The difference with other Environmental system in which system certification is involved, these audits for internal use only .



A.6 Management and review

The management Review is an essential part of the continual improvement of the management system. The improvement process does not end with the establishment of an initial vision, realization of initial objectives, and audit. This is just one of the cycles that will help us to move toward the desired vision (GENS in this case). The management Review is the essential to improvement of the system. The vision for the system is re-analysed as part of this review and the distance from the objective (GENS) is assessed at this time based on program performance during the previous cycle. As review is connected with the planning phase of the next cycle, following Risk management, our revision need to establish the external and internal context in which the next identification and prioritization of programs should be conducted. The suitability, adequacy and effectiveness of the entire process is also evaluated at this time. The management review process shall ensure that the necessary information is collected to allow management to carry out this evaluation.

¹*The entire EBMS is considered a quality assurance tool but the audit clause can be considered the internal quality assurance of the system.*

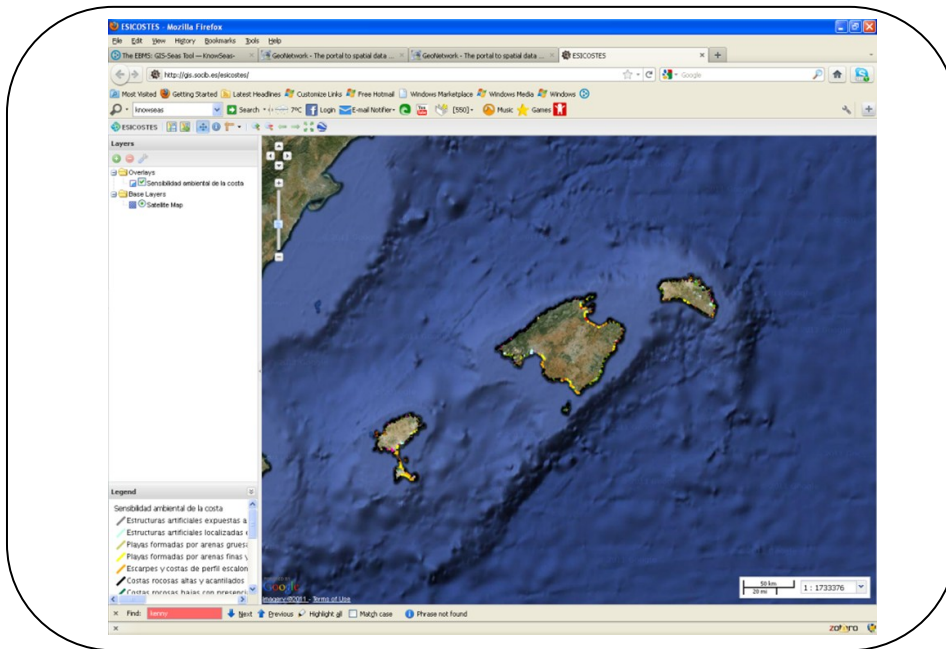


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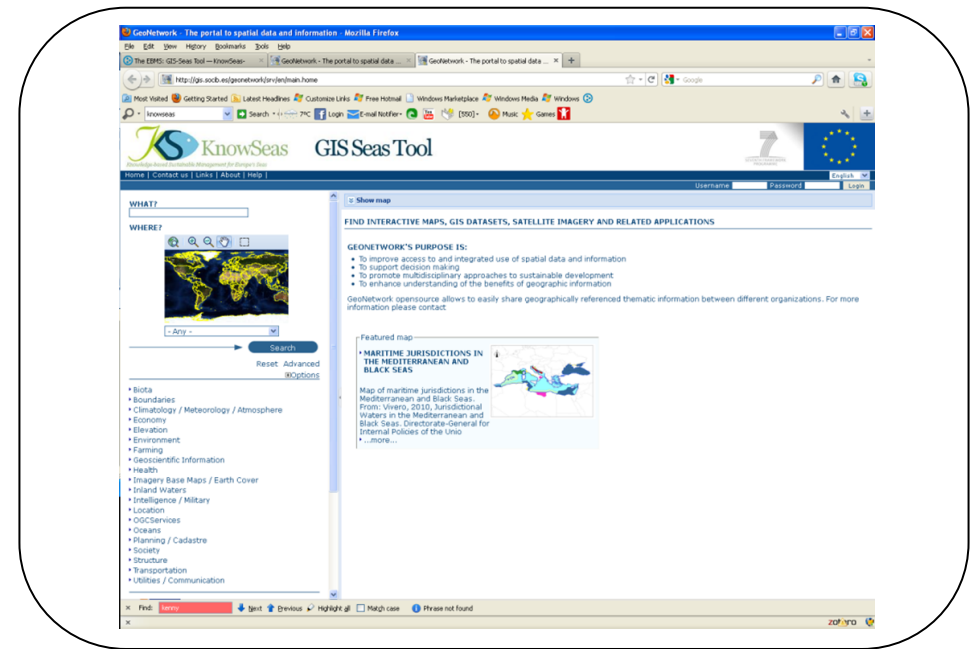
The technology is described in more detail in [Cinnirella et al. \(2012\)](#).

Click on the images below to go to an information pillar



Map service

<http://knowseas.socib.es/geoserver/wms>



Data Catalogue

<http://knowseas.socib.es/geonetwork>



PARTICIPATORY PILLAR

Participation requires active involvement of the people affected by measures in the decision making process which generates these measures. For the EA to be truly effective it must have the support of all levels of society, sectors and stakeholders. In addition, participation needs to be adequately linked with accurate and relevant information on the social ecological system and the capacity to understand and to judge the issues under management. The Ecosystem-Based Management System (EBMS) is intended to enhance communication with stakeholders and to service needs for capacity building. Good Environmental Status (GEnS) is ultimately determined by the needs of society. It is unlikely that goals based on a return to pristine conditions could be achievable so the process has to be forward looking and relies on a dialogue with stakeholders about what is feasible in the future and how this relates to the maintenance of ecosystem services. It is also necessary to reach a societal consensus of the vision desired for the future, a vision which should be directed towards GEnS. The EBMS can only be effective if it is easily understood by regulated parties and the public, so it becomes necessary to delineate, through effective communication, a comprehensive framework that clearly defines the appropriate roles for different levels of government, the private sector and citizens promoting effective partnerships for managing the marine ecosystem services, and strategic tools for policy implementation and conflict resolution. Participation can be at different levels depending on the extent to which the power structures are going to be affected. The lowest level - conventional participation - will not seek to transform power structures. The second level - consultative participation - is where there is the desire to change the power structures but the actors are not that courageous, and it is outsiders (donors?) who set the agenda; as is the case with the previous level. The third level - partnership participation - involves negotiation between the parties, as regards the power structures. Lastly is the transformational participation in which the power structures are openly challenged and the agenda is set by the challengers. The Effective Governance Structure (EGS) required to manage the EBMS should consider decisions involving stakeholder's participation and its capacity building processes.

The participatory pillar of the EBMS addresses two main issues:

Facilitating Stakeholder identification and participation.- Following one of the principles of the Ecosystem Approach (Malawi principles, 1998) presented at the UNEP/CBD/COP/4/Inf.9 in Bratislava "The Ecosystem approach should involve all relevant sectors of society and scientific disciplines". Prior to set up the Management framework, all relevant stakeholders should be identified and should have the opportunity to participate in the process. In the European context, initiatives to generate informed networks of stakeholders are beginning to emerge both at the institutional level through the International Council for the Exploration of the Seas Regional Advisory Councils, which contain members from different marine sectors, as well as through grassroots movements to encourage wider public participation (eg. PISCES, 2012).



At present levels of public understanding about the marine environment in Europe are very low (Rose et al., 2008; Potts et al., 2011). To this end we have developed a web portal with purpose of enhancing stakeholder capacity, the site (www.msfd.eu) contains materials, including videos, guidelines and policy briefs, (as well as a section explain the EBMS) designed to explain the ecosystem approach and its relevance to the general public, policy makers and managers at EU, national, and local levels and the legal obligations for European member states under the MSFD.

Differing, objectives, views and values are inevitable when stakeholders participate in the management of environmental resources. In the European marine context this is particularly true given the current drive toward the large scale production of offshore sustainable energy. Integrating these differing objectives into management requires specific tools. Multi Criteria Analysis (MCA) is one tool which has been successfully applied in the terrestrial context, and innovative spatial forms of MCA in the marine environment are currently emerging (e.g. [Alexander et al., 2012](#)).

For more information also see the CORE Guideline—www.msfd.eu/what.html

