MEDITERRANEAN ACTION PLAN

Plan Bleu/ 1st meeting of the correspondence group on ESA

Sophia-Antipolis (France), 11-12 April 2013

WORKING DOCUMENT

APPROACHES FOR UNDERTAKING ESA IN THE MEDITERRANEAN REGION
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1 Introduction

This working document has been prepared by Plan Bleu/ RAC to facilitate, clarify and make more efficient the discussions of the first meeting of the correspondence group on economic and social analysis (ESA) to be undertaken in the framework of the MAP initiative on the implementation of the Ecosystem Approach.

This document first introduces the background, the previous works done in this field by Plan Bleu, the rationale and the objectives of this action. The two operational objectives are then developed in terms of scope, issues, methods, timing and outputs. When pertinent, possible options are suggested.

This document is additional to the other reference documents prepared for this meeting and especially to the State of Play and the provisional ToR for the EcAP ESA Correspondence Group.

2 Presentation of the ESA action

2.1 Background

In 2008 the Contracting Parties to the Barcelona Convention recognized the need to better protect the ecosystems by progressively applying the Ecosystem Approach to the management of human activities that may affect the Mediterranean marine and coastal environments and adopted a roadmap for its implementation (Decision IG 17/6). The Ecosystem Approach (EcAp) is consistent with the EU Marine Strategy Framework Directive (MSFD) the main objective of which being to achieve or maintain the Good Environmental Status (GES) of Member State marine waters by 2020. It is also linked 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 (A/64/L.18).

Decisions IG 17/6 “Implementation of the ecosystem approach to the management of human activities that may affect the Mediterranean marine and coastal environment” and IG 20/4 “Implementing MAP ecosystem approach roadmap: Mediterranean Ecological and Operational Objectives, Indicators and Timetable for implementing the ecosystem approach roadmap adopted by the Contracting parties to the Barcelona Convention” respectively in COP 15 (2008) and COP17 (2012) articulate a systematic process for moving forward towards more effective ecosystems-based management in the Mediterranean.

The seven steps process identified for moving towards a more effective, ecosystem-based management is as follows:

Definition of an Ecological Vision for the Mediterranean.
Setting of common Mediterranean strategic goals.
Identification of important ecosystem properties and assessment of ecological status and pressures.
Development of a set of ecological objectives corresponding to the Vision and strategic goals.
Derivation of operational objectives with indicators and target levels.
Revision of existing monitoring programmes for on-going assessment and regular updating of targets.
Development and review of relevant action plans and programmes.

The first Meeting of Ecosystem Approach (EcAp) Coordination Group was held in Athens, Greece on 29-30 May 2012. The meeting was held in order to: (1) Agree on a road-map on the activities to be undertaken by MAP under the EcAp process during the 2012-2013 biennium so as to meet the expectation of the Contracting Parties for the 18th Meeting of the COP; (2) Discuss a Governance structure to support EcAp Coordination Group in guiding the EcAp activities in this biennium; (3) Provide substantive inputs upon which a common methodology for defining Good Environmental Status and targets for the 11 Ecological Objectives in the Mediterranean can be based; and, (4) Discuss the activities and coordination needed towards the development of the monitoring program and social and economic analysis. The meeting agreed on a governance structure formed of three correspondence groups in the process of application of EcAp in the Mediterranean and to support EcAp Coordination Group; the Correspondence Group on GES and Targets, the Correspondence Group on Monitoring and the Correspondence Group on Economic and Social Analysis (COR ESA).

The Meeting discussed and agreed on the structure as well as guidelines for the Correspondence Groups. The COR-ESA will be composed of national experts designated by the Contracting Parties and invited experts, and
coordinated by PB/RAC. The overall objective of this Group is to elaborate a common understanding and to foster a broad appropriation by Mediterranean riparian countries of the social and economic dimensions involved in the EcAp implementation.

2.2 Previous ESA works

To be in coherence with the DPSIR model underlying the implementation of EcAp, Step 3, Assessment of pressures exerted on marine and coastal Mediterranean ecosystems, should include considerations on the socioeconomic aspects related to these pressures.

Plan Bleu/RAC has contributed to the Initial Integrated Assessment of the Mediterranean Sea, output of step 3, by a section entitled “The economic value of sustainable benefits rendered by the Mediterranean marine ecosystems”.

This exploratory study proposes a first initial value of sustainable services rendered by the Mediterranean marine and coastal ecosystems for human well-being, while clarifying the exercise limitations.

This approach has been generally regarded as relevant and realistic, as it enabled to deliver on time with the available resources both:

- Methodological bases according to the state of the art on these innovative issues.
- A structured analysis of sustainable services rendered by the Mediterranean marine and coastal ecosystems.
- A first appraisal of the main marine and coastal economic activities (fishing, tourism, recreation, protection of the marine and coastal).
- A review of available data and associated constraints.
- A first estimate of the sustainable monetary benefits.

2.3 Rationale and objectives of the action

However, it appeared necessary to continue this preliminary study by a thorough action on the socioeconomic aspects to be taken into account for the implementation of the EcAp within the Mediterranean Sea.

The goal of this action is to provide the socioeconomic context essential to elaborate grounded program of measures aiming to achieve the ECAP strategic objectives. It will contribute among others to the development of reasonable targets at regional, sub-regional and national levels. The establishment of pressure targets emanating from human activities will allow the design of coherent management measures. This activity will enable the contracting parties to establish a common understanding and standards with regard to analysis to be undertaken in link with the following steps of the EcAp road map, e.g. consideration of socioeconomic effects of chosen targets; cost effectiveness analysis of measures economic incentives to support GES and exception where costs are disproportionate.

The overall objective of this action is to share knowledge and information in order to elaborate a common understanding and to foster acquaintance by Mediterranean riparian countries of the social and economic dimensions involved in the EcAp implementation.

This appropriation is especially important as a majority of Mediterranean riparian countries are not EU Member State (M5) and thus are not subjected to enforcement of supranational EU directives aiming at achievement or maintenance of the GES. For these countries, part of the programs of measures should be then decided at their national level, requiring convincing the national policy makers about the potential socioeconomic impacts and benefits of these measures, expressed in terms of socioeconomic assessment of the uses of the coastal and marine ecosystems and cost of degradation at regional and national scale.

In this context, the operational objectives of the action are to:

- Prepare an economic and social analysis at regional and sub-regional scale of the human activities (mainly fisheries, aquaculture, maritime transport, recreational activities, oil industry and offshore) using the Mediterranean Sea and its coastal zone, including the costs of degradation for human wealth in the absence of the implementation of the relevant actions plans and programmes of measures aiming to achieve or maintain GES (step 7 EcAp road map).
- Develop Guidelines for future national ESA adapted to non EU Mediterranean countries.
Besides these operational objectives, this action also includes coordination and facilitation of the work of the COR ESA Group. The modalities of the work of this group are discussed in the provisional Terms of Reference of the ESA COR Group.

3 ESA at regional level

3.1 Objectives
From a general perspective, economic and social analysis aims to estimate the impacts on social welfare or human well-being. Impacts may be positive – where welfare is increased (i.e. benefits) – or negative – where leading to a loss of welfare (i.e. costs). Impacts can be financial (e.g. monetary such as loss of income etc.), environmental (e.g. welfare loss due to environmental damage) and social (e.g. health or employment impacts).

The objective of ESA at the regional level is the preparation of an economic and social analysis of human activities using marine and coastal waters, including the costs of degradation for human wealth in the absence of the implementation of the relevant actions plans and programmes of measures aiming to achieve or maintain GES.

3.2 Scope
The geographical scope for the regional Economic and Social report is the zone of the Mediterranean Sea, covered by the MAP\(^1\), including maritime waters but also coastal areas. However, the assessment might be broken down by Mediterranean sub-basins wherever the COR ESA Group considers it as appropriate: Western Mediterranean, Ionian and Central Mediterranean, Adriatic Sea, and Aegean-Levantine. Although such breakdown might entrain uncertainty regarding the availability and accessibility of data, the consideration of smaller geographic areas allows a better evaluation of human activities and the distribution of impacts. It also might help the integration of economic and social aspects.

Fig. 1 MAP and MFSD sub-regions

\(^1\) Today MAP involves 21 countries bordering the Mediterranean as well as the European Community.
The project should help and enable the coordinate analysis by sub-regions as well as facilitate efficient use of resources. In addition, COR ESA Group should bear in mind that parties that are EU members have produced an ESA for their national waters, in compliance with MSFD. Experiences from EU members might be taken into consideration for undertaking ESA within the Mediterranean region.

EC -WG ESA (2010) described the different steps to fulfil the requirements of MSFD ESA:

1. Identification and description of the different uses of the marine environment in terms of their economic and social importance and pressures, considering:
   - Identification and description of the different uses and pressures on the marine environment.
   - Assessing direct and, if possible, the indirect benefits of the different uses of the marine environment.
   - Description in qualitative and, if possible, quantitative terms of the pressures caused by the different uses of the marine environment.

2. Description in qualitative terms and, if possible, in quantitative terms of the cost of degradation of the marine environment.

3.3 Issues

Undertaking ESA within the Mediterranean region presents challenges and major issues that need to be addressed:

- Be transparent as to the methods, processes and assumptions used.
- Use of available data: an examination of the data sources and data availability/ accessibility should be done, as well as identification of data gaps. Members of COR ESA Group might be solicited for data identification and collection.
- The uncertainties related to data as well as to methods will be clearly stated.
- Results will be presented at sub-regional level (see Fig. 1). When results come from aggregation of national data, these data should be listed in annex in order to be easily reused for further national assessment.
- Human activities and pressures are linked, as well as the impacts these pressures have on human well-being. This implies contact and exchanges between different COR Groups (GES and Targets, and ESA) under supervision of MAP.

3.4 Methods

3.4.1 Assessment of economic activities

Economic methods enable to analyse impacts on human welfare for the purposes of supporting decision-making or comparing different environmental states. Therefore, the project might select the appropriate approach to undertake the analysis of human uses of marine and coastal water approach to present information in a clear manner to decision makers.

Several approaches have been examined to analyse economic sectors using the marine waters (see Doc. “State of Play”): the Ecosystem Services approach and the Marine Water Accounts Approach, which differ in their starting point and ambition level, as well as in the associated data requirements. For the Mediterranean Sea region, the Marine Water Accounts approach might be adopted to better assess human uses of the marine ecosystem and socioeconomic benefits of marine ecosystems. This proposal can be justified by the fact that currently available Initial Assessments submitted by EU MS show that the Mediterranean countries opted for the Marine Water Accounts approach. Moreover, the study on the benefits provided by Mediterranean ecosystems (Mangos et al., 2010) carried out by PB/ RAC has shown the strong data constraints to develop this kind of approach at the Mediterranean level.

This Marine Water Accounts approach takes the starting point in economic sectors using marine waters directly or indirectly and has a firm base in the System of National Accounts (see Doc. “State of Play”). This international system enables to present data that are internationally comparable. In addition, for undertaking ESA in the Mediterranean Sea, it might be possible to benefit from available regional and global useful databases on economic sectors.
The following steps illustrate the Marine Water Accounts Approach:

1. Identify and describe the region of interest (Mediterranean Sea basin, Mediterranean sub-regions).
2. Identify and describe the economic sectors using or having an impact on marine waters. The present ESA aims to be illustrative rather than exhaustive and will be limited to main economic activities that depend directly on the marine environment:
   - Fisheries
   - Aquaculture
   - Maritime Transport
   - Offshore oil and gas extraction
   - Tourism
3. Identify and, if possible, quantify social and economic benefits derived from the use of marine waters by each economic sector, in terms of production value, intermediate consumption (goods bought from and sold to other businesses), value added (profits), number of employees (employment) and compensation of employees (salaries etc.).
4. Identify and, if possible, quantify impacts generated by these sectors.
   The economic accounts can be addressed using the following indicators:
   - Production
   - Gross value added
   - Employers’ wages
   - Labour force
5. Identifying pressures that affect the state of the marine waters
   In the Marine Water Accounts approach, pressures are identified as the effect on marine waters by the economic sectors as identified in the previous stages. Pressures that originate from the different uses on the marine environmental status are quantified if possible. This step may require communication/cooperation with natural scientists (EcAp’s COR GEST Group).

3.4.2 Cost of degradation

Several approaches might enable addressing the cost of degradation within the Mediterranean region (see Doc. “State of Play”):

Possible options:

1. **Ecosystem Service approach**: it requires the identification of the ecosystem and associate benefits which are potentially lost if the environment is negatively affected. It involves building up at least two hypothetical scenarios (i.e. the BAU scenario and the reference GES scenario, resulting from the achieving GES).
2. **Thematic approach**: assesses the current cost of degradation (costs, expenses and loss of benefits supported by society related to the anthropogenic degradation of marine environment) in comparison to a reference GES scenario.
3. **Cost-based approach**: provides an estimate of the current costs of degradation using only existing quantitative data on costs of measures currently implemented to prevent degradation of the marine environment. The cost based approach does not include a reference condition.

The Ecosystem Service Approach requires building up a BAU scenario and other evolving scenarios. This fact involves uncertainty, since it includes forecast of future uses of marine waters and identification of possible future pressures to address changes in marine environment.

Among the different approaches that have been examined, the **Thematic approach** appears as the most realistic and feasible to assess the cost of degradation within the Mediterranean region. Available Initial Assessments submitted by EU MS show that the Mediterranean countries have used different approaches among the three proposed, or a mix of them.
The work of COR Group on GES & Targets, establishing indicators and thresholds for each Ecological Objective, might be used when building up the GES – reference scenario.

The following pressures to coastal and marine environments might be considered to address the cost of degradation within the Mediterranean region:

- Contamination by hazardous substances: both synthetic (pesticides, pharmaceuticals or antifoulants), as well as non-synthetic compounds (hydrocarbons or trace metals), including chronic contamination and oil spills.
- Nutrient and organic matter enrichment, leading to eutrophication: inputs of nitrogen and phosphorous-rich substances (such as fertilisers) and organic matter.
- Introduction of microbial pathogens
- Introduction of invasive species
- Degradation of natural resources due to selective extraction of species (fishing).

3.5 Timing

Timetable to be considered (see Annex).

4 Guidelines for national ESA adapted to non EU Mediterranean countries

The achievement or the maintenance of GES will require inter alia the development of relevant action plans and programmes at regional and national levels. As already stated, a majority of Mediterranean riparian countries are non EU Member State and thus are not subjected to enforcement of supranational EU directives aiming at achievement or maintenance of the GES. For these countries, most of the measures to be enforced in order to achieve or maintain GES in their national waters should be then decided at their national level, requiring convincing the national policy makers about the potential socioeconomic impacts and benefits of these measures, expressed in terms of socioeconomic assessment of the uses of the coastal and marine ecosystems and cost of degradation at regional and national scale. Beyond the regional ESA carried out within this action, it is important to encourage non EU MS to perform their national ESA, in order to contribute at their national level to the implementation of the EcAp overarching goal. It should be noted that EU MS should have carried out their ESA as requested in the MSFD implementation (Art. 8c) and reported the results to the Commission before the 15th of July 2012.

Within this action, two specific outputs will contribute to this objective:

- These guidelines for national ESA adapted to non EU Mediterranean countries
- National ESA in three Pilot Cases (Lebanon, Tunisia and Morocco) carried out in the framework of the ReGoKo project.

This section presents the specifications of the Guideline, with a focus on the possible options.

4.1 Scope

The geographical scope of the guideline corresponds to the Mediterranean waters under the national jurisdiction of the country. This implies to break down the analysis for nations having marine façades non belonging to the Mediterranean Sea, such as Morocco, Egypt, Israel and Turkey.

Possible option: recommend to the concerned countries to break down the results according to the Mediterranean sub regions. Concerned non EU nations: Tunisia, Libya and Albania. Doing so will help breakdown of economic data to smaller geographic areas, allowing a better assessment of the distribution of impacts, and therefore assist in integrating the economic analysis with the social analysis.
4.2 Issues

Following EFTEC/ENVECO (2010), the Guideline will recommend to the future users:

- Be transparent as to the methods and processes used;
- Use the ‘input studies’ available;
- Accommodate results from the different economic and social analysis methods used in input studies;
- Be realistic about the data available to undertake analysis;
- Clearly present the information to decision-makers and stakeholders in the context of the EcAp; and
- Recognise the need for flexibility of approach to accommodate different methodologies.

Flexibility is critical, in order that the approach taken by the user should be able to accommodate different nation approaches, in terms of:

- Using analysis and data at both low resolution and high resolution, if available, in particular for the analysis of progress toward delivering GES by implementation of EcAp
- Enabling different levels of details on different environmental pressures. Level of detail should be ideally proportionate to the importance of the environmental pressure with respect to achieving GES.
- Being able to recognise non-linear trends/changes in impacts. Economic analysis is usually based on analyses of marginal changes, and the impacts caused in terms of costs and benefits. However, environmental changes are not always marginal; in particular potential changes driven by climate change. Therefore economic analysis of them needs to recognise this, even knowledge and data are often missing to address properly this issue.

Coordination between contracting parties regarding selection of economic and social data on economic activities is needed, in particular from those belonging to different sub-regional basins or affected by transboundary features and impacts. Coordination is also needed regarding the spatial and temporal scales.

4.3 Outline of the Guide

It is proposed to follow the outline of the EC – WG ESA (2010) Guidance document, developed in the frame of the Common Implementation Strategy of the MSFD for the following reasons:

- This Guidance has been drafted with the support of a large panel of experts, including representatives of the Regional seas Conventions.
- It is designed for national assessment, as for the ESA Guidelines.
- It provides a common basis with the ESA carried out by EU MS, which will facilitate connections between the works done by Mediterranean MS countries and the works to be done by non-MS Mediterranean countries.

Other outlines are conceivable, as the one developed for the Regular Process for global reporting and assessment of the state of the Marine environment (UN GA). However the Regular Process has not yet been subject of a Guidance document, since the Regular Process is dedicated to a global assessment and not to a national one. Moreover, it has been considered by experts during a regional workshop held in Brussels in 2012 in the frame of the Regular process implementation that national MFSD ESA is in coherence with the Regular Process.

Proposed outline of the Guide:

1. Introduction
2. Economic and social analyses in the EcAp implementation
3. Definition of main key concepts, including Economic and social analysis, Cost of degradation, Ecosystem services, Use value, Non-use Values, DPSIR framework…
4. Economic and social analysis of the use of marine waters
   - Different approaches for the analysis
     o Marine Water Accounts approach (focus on what can be obtained from national accounts)
     o Ecosystem Services approach (start from those obtained from marine waters)
     o Difference between the approaches, recommendations
   - Capturing the use of marine waters

2 http://regularprocess.iode.org/
4.4 Methods

It is proposed that the Guide presents the different possible methods for the Economic and social analysis of the use of marine waters and the assessment of the cost of degradation.

Recommendations will be issued depending on experiences in Mediterranean countries, mainly:

- Experiences gained by the Mediterranean MS countries in the implementation of the MSFD.
- Returns from the ReGoKo Pilot cases (Morocco, Tunisia and Lebanon).

4.5 Reporting of the results

A minimum level of harmonization is required to facilitate comparisons of results and methods between ESA carried out in different countries. It is proposed the Guide presents the reporting sheets elaborated to report the MFSD initial assessments carried out by the EU MS.

5 References


Appendixes
## 1. Timing of the action

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*End*
2. Definitions and key concepts

- **Human use of marine waters**
  The use of marine waters is defined as any human activity using or influencing the marine space and/or ecosystem goods and services provided by marine waters.

- **Ecosystem services**
  Ecosystem services are defined as goods and services – benefits – that the ecosystem provides to human well beings. MEA, 2005 has defined four categories of ecosystem services: provisioning, regulating, supporting and cultural, which are generally accepted. However, the assessment of ecosystem services raises several theoretical and methodological questions and has generated several approaches for the definition and the categorization of ecosystem goods and services (see table 1).

Table 1 Different classification for ecosystem services (Ojea et al., 2012).

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<tbody>
<tr>
<td>Ecosystem Services (ES)</td>
<td>The conditions and processes through which natural ecosystems, and the species that make them up, sustain and fulfill human life</td>
<td>Benefits people obtain from ecosystems</td>
<td>Components of nature directly enjoyed, consumed, or used to yield human well-being</td>
<td>Benefits people obtain from ecosystems</td>
<td>Aspects of ecosystems utilized (actively or passively) to produce human well-being</td>
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<td>Cultural, Provisioning, Regulating, Supporting</td>
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<td>Abiotic inputs, Intermediate services, Final Services</td>
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<td>Ecological functions</td>
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- **Intermediate services**
  Intermediate services are ecosystem services that come from factors other than the ecosystem itself and constitute ecosystem processes. Examples of these could be primary production or climate mitigation.

- **Final services**
  Final services are those that result from ecosystem processes and constitute ecosystem functions. Examples of these are regulation of water flow and quality, creation of beaches or carbon sequestration. They directly provide benefits for humans, such as amenity and recreation, or carbon storage, among others.

- **Degradation**
  Degradation is the reduction in the provision of ecosystem services compared to another (reference) state.

- **Cost of degradation**
  The cost of degradation is the welfare foregone, reflecting the reduction in the value of the ecosystem services provided compared to another state.

- **Baseline scenario/business as usual**
  A baseline, or a Business As Usual (BAU) scenario, describes the anticipated evolution in the environmental, social, economic and legislative situation in a marine environment over a certain time.
horizon in the absence of the policy under consideration (i.e. if the MSFD or MAP’s EcAp initiative is not implemented).

Table 2 Values provided by coastal and marine ecosystems (Barbier 2012)

<table>
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<tr>
<th>Use values</th>
<th>Indirect values</th>
<th>Non-use values</th>
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<tr>
<td>Direct values</td>
<td>Indirect values</td>
<td>Existence and bequest values</td>
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<tr>
<td>Fishing</td>
<td>Nutrient retention and cycling</td>
<td>Cultural heritage</td>
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<td>Aquaculture</td>
<td>Flood control</td>
<td>Resources for future generations</td>
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<td>Transport</td>
<td>Storm protection</td>
<td>Existence of charismatic species</td>
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<td>Wild resources</td>
<td>Habitat for species</td>
<td>Existence of wild places</td>
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<td>Water supply</td>
<td>Shoreline stabilization</td>
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<td>Recreation</td>
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<td>Genetic material</td>
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<td>Scientific and educational opportunities</td>
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- **Use value**
  The use value (both direct and indirect) captures the link between ecosystem services and human welfare.
  - **Direct use value**
    Includes the profits of fishers, recreational sea angling operators and the oil and gas industry etc. ("economic" value) and wider benefits that are more difficult to measure, since they are not captured by market interactions, for example recreational activities such as swimming, fishing, scuba diving etc., as well as the importance to local coastal communities of maintaining their marine heritage ("social" value).
  - **Indirect use value**
    Includes the benefits we derive from the environment’s provision of ecosystem services such as waste decomposition or carbon sequestration.

- **Non-use value**
  The non-use value describes, for example, the importance people attach to knowing that a healthy sea surrounds them and that this resource may be passed on to future generations.

- **“Non-market” goods and services** are goods and services that are not traded in markets and that are consequently “un-priced” (eg. ecosystem goods and services).

- **Socio-economic impacts** are the impacts on the economy and society of an action (e.g. policy, programme or project) and include market effects such as value generated by and jobs created in each affected sector and multiplier effects in the wider economy. For example, the financial benefits associated with a proposed new aggregates extraction area and the costs of exclusion to local fishermen.

- **Monetary Valuation** is a method for capturing people’s valuation of ecosystem services, via people’s willingness to pay for the benefits, and depend on individuals’ preferences and, as a consequence, on how (much) individuals are informed.
3. Identifying Data Sources and Data Gaps

**Data:**
- Analysis and data at both high resolutions (economic impacts resulting from changes of the marine environment) and low resolution (large scale aggregation data) might be combined. Flexibility is needed.
- When assessing pressures derived from economic uses, the level of detail should be proportional to the relevance of the pressure regarding the achievement of GES.

**Possible option to facilitate work: provide detail on data sources:**

- **National Statistic Authorities:** national accounting figures
- **EU level:**
  - DG Mare
  - DG Environment
  - EEA
  - EUROSTAT: Detailed statistics on the EU and candidate Members.
- **MAP – Barcelona Covention**
- **UN IMO**
- **GFCM**
- **ICCAT**
- **Regional Projects:**
  - ReGoKo
- **EU- Projects focusing or acting on the Mediterranean region:**
  - Perseus
  - Pegaso
  - Knowseas
  - ODEMM
  - SeaDataNet
  - Hermione
  - Medina
  - Vectors
  - Other