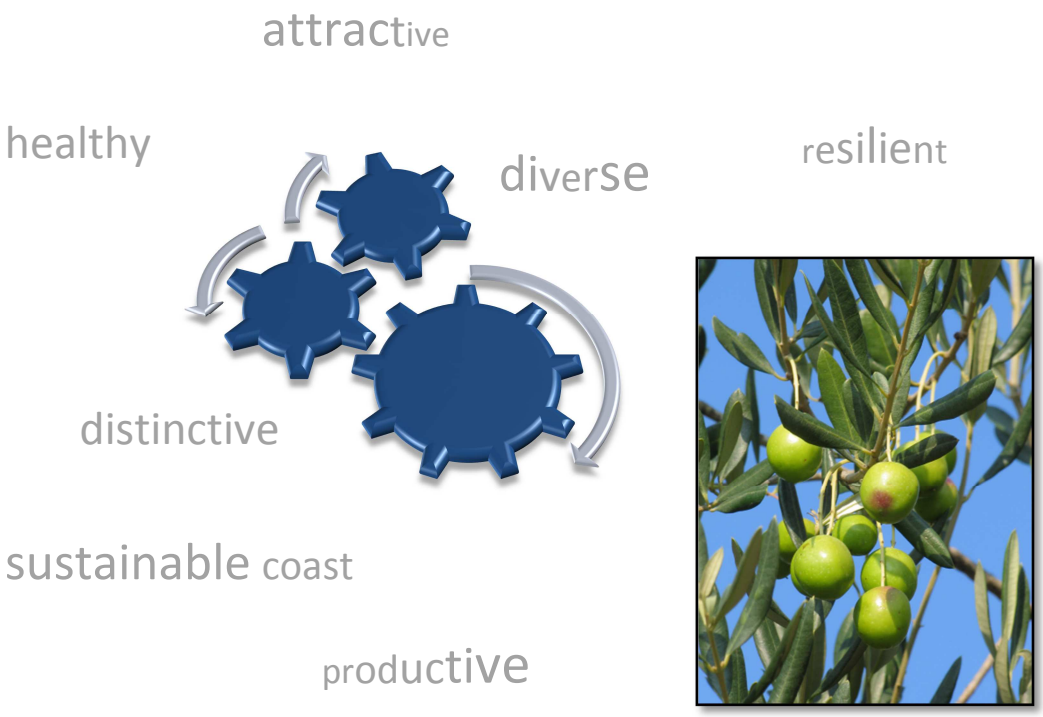
THE ICZM PROCESS

A Roadmap towards Coastal Sustainability



Split, 2012

TABLE OF CONTENTS

1. INTRODUCTION

1.1. Welcome to the ICZM Process

The primary target participants in the Integrated Coastal Zone Management (ICZM) Process are the practitioners and partnerships tasked with the implementation of the Process, and in particular those involved in the preparation of ICZM plans, strategies and/or programmes for coastal areas in the Mediterranean and Black Sea. It is also intended that the implementation of the ICZM Process[1] will contribute to a wider discussion on the sustainable development of coastal zones.

A unique and groundbreaking international legal instrument – the Protocol[2] to the Barcelona Convention on Integrated Coastal Zone Management, now drives ICZM in the Mediterranean.

The „ICZM Protocol" was developed to provide a common legal framework for the Contracting Parties – the 21 Mediterranean states and the EU – to promote and implement ICZM in the Mediterranean. The Protocol entered into force in March 2011.

The entry into force of the Protocol in 2011, including its ratification by EU, means that the Protocol has now become part of the EU law and has binding effects.

[1] Also available at : http://www.pegasoproject.eu/wiki/ICZM Process

[2] Link for download: http://www.pap-thecoastcentre.org/pdfs/Protocol_publikacija_May09.pdf

The design of the ICZM Process to assist the implementation of the ICZM Protocol is being coordinated by the **Priority Actions Programme/Regional Activity Centre (PAP/RAC)**[3] in Split, Croatia, and is based on over 30 years of practical ICZM experience in the Mediterranean. PAP/RAC is a component organisation of the **Mediterranean Action Plan (MAP)**, part of the **United Nations Environment Programme (UNEP)**. Twenty-one Mediterranean countries and the European Union are Contracting Parties to the Barcelona Convention, which is being implemented by the MAP. PAP/RAC has built a global reputation for its expertise in ICZM.

In designing the Process, PAP/RAC has created synergy between two major ICZM-related projects in the Mediterranean: the EU FP7 **PEGASO** project, within which the Process is being developed, and the GEF-funded Strategic Partnership for the Mediterranean Large Marine Ecosystem (MedPartnership). Within this latter, PAP/RAC is working closely with the **Global Water Partnership (GWP)** and **UNESCO-IHP** to ensure effective integration with river catchment and water basin management, and coastal ground water management.

1.2. Structure of the ICZM Process

This ICZM Process is intended to guide, i.e. it is the *„how"* of ICZM, but it should be adapted, however, to individual local circumstances which will dictate changes to this Process within the overall framework. The ICZM Process is structured into 5 key stages represented in the diagram on the next page. The 5 stages are further structured into Key Tasks for each stage.

1.3. Why ICZM?

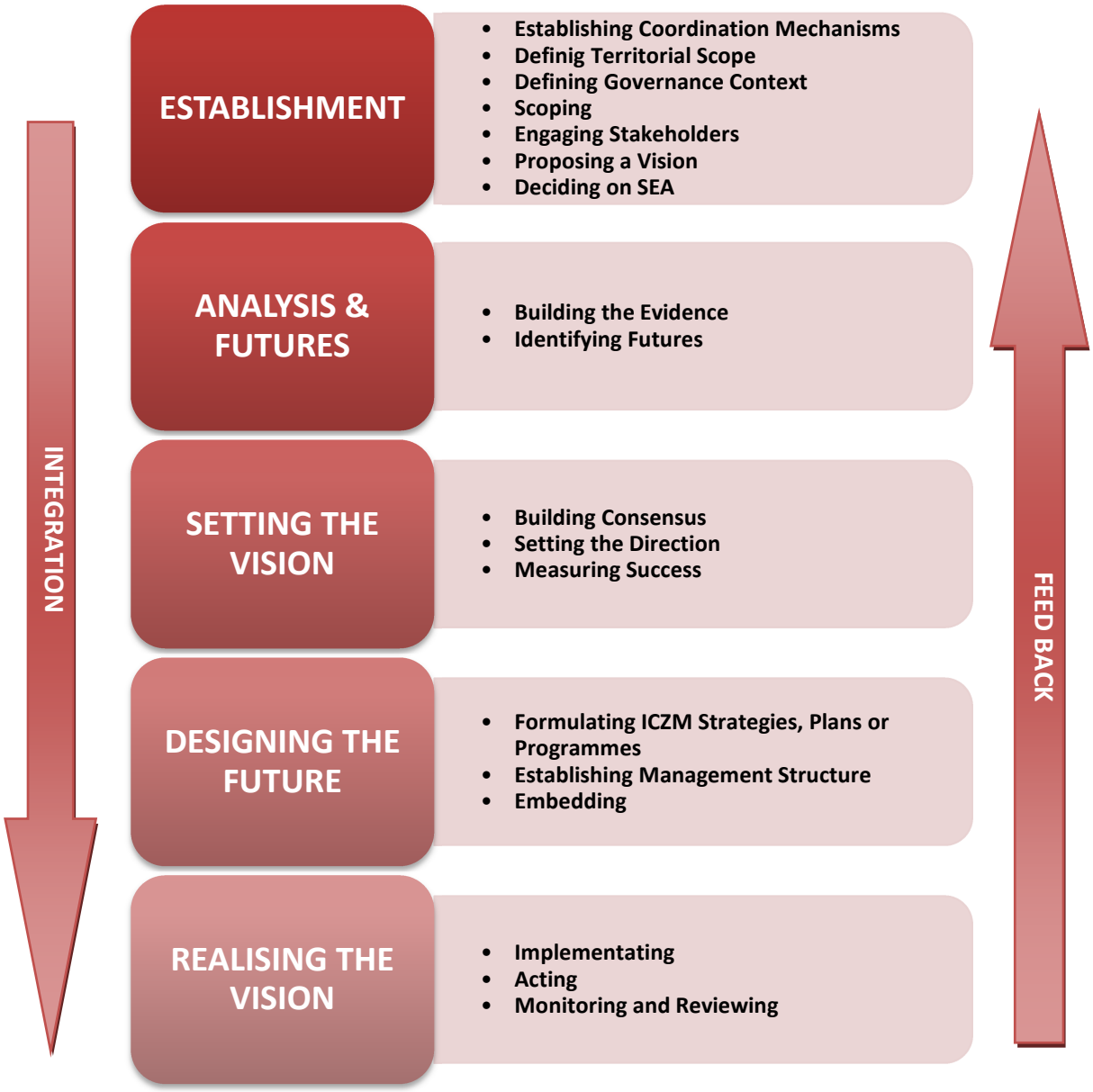
„Sustainable" is a much used, but rarely defined term. In the case of the Mediterranean, a **sustainable coast** is one that is:

- **Resilient** – resilient to future uncertainties of climate change, including rising sea levels, warming and drought; resilient to climate variability such as extreme storms, floods, waves, etc; resilient to earthquakes and erosion; resilient to negative impacts of human processes, including the pressure of tourism and urban development on the coast.
- **Productive** – productive financially in traditional, modern and future economic sectors; supporting the economic aspirations of the coastal community; providing a competitive asset to the local economy, high in natural and economic values – increasing GDP and alleviating poverty.
- **Diverse** – ecologically diverse: a rich mosaic of marine and terrestrial ecosystems; diverse rural and urban landscapes, old and new; a diverse economy – providing a diverse, but distinctly Mediterranean experience; a diverse society – providing conditions for a rich mixture of social groups, open to the outside world, etc.
- **Distinctive** – retaining the cultural distinctiveness of coastal areas, including their architecture, customs and landscapes, recognising the Mediterranean as the „cradle of civilisation" – providing a distinctive marketing image on which to attract investment.
- **Attractive** – retaining the attractiveness of the coast, not only to visitors but also to investors and local people to promote a self-sustaining cycle of sustainable growth.
- **Healthy** – free from pollution from land and marine-based sources, with clean fresh and marine waters and the air – providing a healthy environment for people, natural resources such as fisheries, and wildlife.

[3] Visit: http://www.pap-thecoastcentre.org/

The above should be used as a checklist to help set up an ICZM plan, strategy or programme. These criteria should be addressed in a balanced way, in a way that maximises mutual benefits and minimises the risk of detrimental consequences.

It is important to note that ICZM encompasses a wide range of issues, each one of them being important in its own merit. Throughout the Process, every sectoral issue that is important in the specific coastal area should be considered. However, in these guidelines not all the issues could be equally treated because it would go well beyond the scope of this endeavour. In order to show how a certain issue should be considered and/or integrated in the ICZM Process we have prepared a draft document which describes how that could be done in the case of climate change *(Annex 1. Integrating climate change into the ICZM planning process)*, certainly one of the most critical issues many coastal areas are facing today. The findings of that document may be consulted whenever a reader feels compelled to do so.



1.4. Expert View – „...keep it simple“

„Coastal issues are complex, but your strategy, your plan or your programme should not be. Just remember that ICZM is as much a social as it is a technical process, and coastal resources will always be limited. So here are a few practical tips to smooth your way:

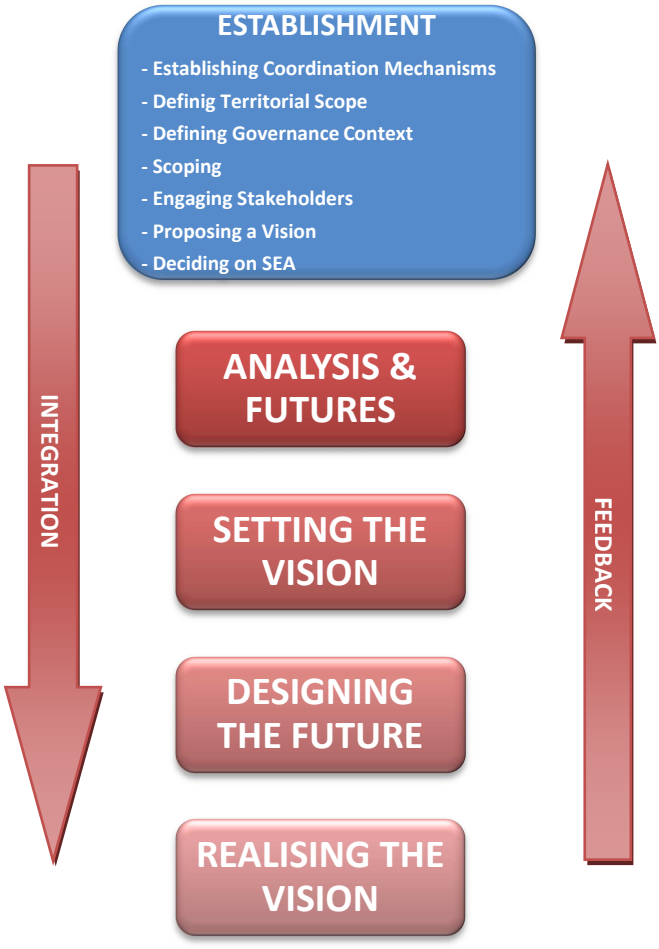
- *Keep it simple and fit for purpose – don't over complicate;*
- *Where possible, work with what you have, commission new work/research and data collection only where absolutely required;*
- *The Process should be adaptive to local circumstances and resources;*
- *Communication is the key – enabling stakeholders to visualise the problems, potential futures, and to find solutions;*
- *No ICZM Process should be strictly linear; all stages are iterative and will overlap depending on individual work plans;*
- *There is no substitute for full stakeholder participation.*

And finally – to paraphrase our colleagues in the Global Water Partnership (GWP) *– the ICZM Process is designed not just to produce a plan or a strategy for a coastal area. In the end, success or failure of ICZM depends on its ability to catalyse change. This is what matters – not the specific process, nor the form of a strategy or plan document, but whether or not it results in positive action.*

Zeljka Skaricic, PAP/RAC Director

2. ESTABLISHMENT

The overall aim of this stage of the ICZM Process is to establish an operational foundation for the subsequent implementation of the ICZM Process, including the preparation of the ICZM plan, strategy or programme; to begin the process of understanding the challenges facing the area and the differing perceptions of those challenges; and to begin building a constituency of support for the ICZM Process.



It is not the intention and purpose of this stage to carry out a detailed scientific analysis of the state of the area or to fully uncover the complex interrelationships between issues. Rather, the purpose is to map the likely range of human and natural forces, the existing sectoral policies, and their potential interrelationships to be used as a trigger for the process and a focus for discussion, full analysis and identification of priorities in subsequent stages.

At this early stage effort should be directed to maximising the value of the Process as a tool for engaging stakeholders through good design, non-technical language and appropriate visualised media.

2.1. Key Tasks

The following list details the main tasks to this stage:

1. Establishing practical **mechanisms for the ICZM Process**, including coordination and cross-sectoral involvement of stakeholders, technical support to the Process, and communication among partners.
2. Defining the **territorial scope**, by identifying the boundaries of the specific coastal zone and its ecosystems.
3. Defining the **governance context**.
4. Scoping the **problems and issues, pressures and drivers**, and **risks**.
5. Engaging **stakeholders** and preparing **communication strategy**.
6. Proposing a **potential vision** for the coastal area.
7. Deciding on **Strategic Environmental Assessment (SEA)**.

The key tasks are not necessarily performed in the order as outlined above. They can be run in parallel. The Work Plan defines timing for each task.

2.2. Potential Outputs

Depending on the type of initiative and its scale and magnitude, an Inception Report, including the Work Plan, and a Scoping Report may be needed. These may be combined into a single document.

2.2.1. Inception Report

The Inception Report should be agreed among the core partners in the ICZM Process to include:

- Background and purpose of the project including the „trigger" factors for the process (the trigger may be a political decision, a strategic priority or a response to a specific local problem or issue).
- The shared vision of working together.
- The larger macro, or high-level, elements of policy abstracted from the individual partners and the cross-cutting themes.
- The operational policy means of delivery, funding and consolidated actions.
- The geographical boundaries of the coastal area including both the terrestrial and marine boundaries.
- International and/or national context, including the relevant legal and strategic context and parameters of the process.
- The governing partnership and the proposed ICZM Coordination Structure, in the form of the ICZM Steering Group or Committee, including its objectives, tasks, mode of operation etc.

The **Work Plan** is a constituent part of the Inception Report. It should clearly detail the tasks and milestones of the Process, the allocation of responsibilities among partners, along with the logistical structure for technical and administrative support. The objective of the Work Plan is to help ensure the smooth running of the project and a common understanding of the time constraints, and to allocate resources efficiently over the planning period. Typically, the Work Plan should include:

- A detailed description of activities, with a wide range of practical, political and financial considerations presented.

- A basic time-line that should reflects elements of the ICZM Process.
- A simple GANTT chart that depicts graphically the order in which various stages of the ICZM Process should be completed to facilitate communication with partners and stakeholders. This should set out the duration of each phase, outputs and the key milestones. The GANTT chart should set out the following:
  - ICZM Process stages;
  - Major outputs;
  - Key event dates;
  - Critical milestones centred on key events;
  - Key financial requirements;
  - The schedule of implementation.

2.2.2. Scoping Report

The Scoping Report will contain the following:

- A **preliminary assessment** of the problems, issues, drivers, pressures and risks along with their relative importance, policy context and inter-relationships.
- **Coastal governance baseline** defining institutional, legal and policy context, as well as detailed analysis of the key stakeholders to identify their real competencies/roles, their capacity and importance/relevance for the Process. The ICZM Protocol specifies the range of stakeholders to be included in the Process: *„...the territorial communities and public entities concerned; economic operators; non-governmental organizations; social actors; the public concerned*."
- A **communication strategy**.
- A **potential vision** for the area.
- **Strategic Environmental Assessment (SEA)**, if so decided, which would be useful if an ICZM plan, strategy or programme is being prepared. The environmental authorities of the relevant state should therefore be consulted on the requirement for an SEA and its terms of reference.

2.3. Establishing the Coordination Mechanism

Governance could be defined as *„...the formal and informal arrangements, institutions, and mores that structure: how resources or an environment are utilized, how problems and opportunities are evaluated and analyzed, what behavior is deemed acceptable or forbidden, and what rules and sanctions are applied to affect the pattern of use*." (Mahon, R. *et al*. A governance perspective on the large marine ecosystem. *Marine Policy.* 2008)

The **objective** of this task is to ensure that the ICZM Process is representative and based on the governance principles, well informed and transparent, and ensures the strategy, plan or programme's legitimacy and long-term sustainability.

There are three important, and very distinct, functions that should be clearly separated within any ICZM coordination mechanism.

The three functions can be seen on the Vital, Essential and Desirable (VED) scale:

1. **Vital:** political legitimacy and accountability, financial management;
2. **Essential:** technical/operational guidance and support;
3. **Desirable:** local representation and consultation.

There are various coordination architectures, and each situation will require a locally tailored approach. The following model illustrates the above VED scale.

A. Steering Group or Committee

- **Composition**: representatives of the core political and financial stakeholders in the ICZM Process. Representatives of the funding bodies, national government, higher-level competent local administration(s).
- **Function**: to ensure the smooth running of the Process; to support and facilitate implementation; to ensure political legitimacy, and provide financial accountability.

B. Technical Group

- **Composition**: technical staff or representatives of organisations and institutions with knowledge, information and data resources for the strategy or plan area and its key issues, along with logistical and IT support.
- **Function**: to provide the best available technical and logistical support to the ICZM Process.

C. Consultative Group

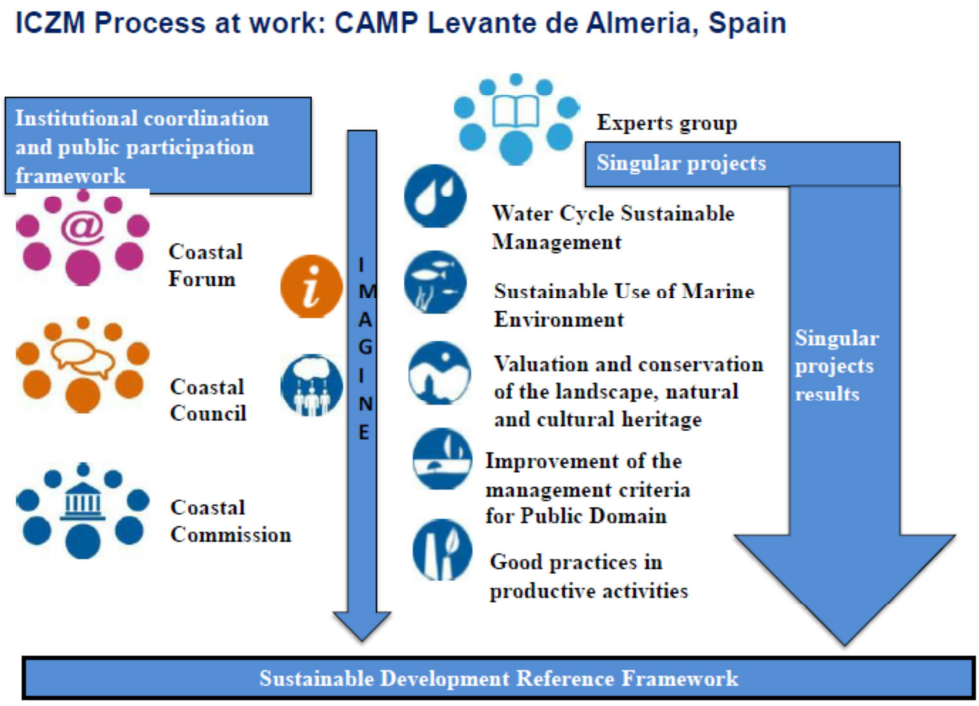
- **Composition**: representatives of stakeholder organisations, administrations, important sectors, opinion formers, and key individuals in the process not included elsewhere. The final composition of the group is defined after the stakeholder analysis.
- **Function**: to reflect the opinions and expertise of the community, and to act as a consultative body at all stages of the Process.

The Steering Group or Committee (1) requires timetabled meetings, while the Technical and Consultative Groups (2 and 3) can be more flexible and may be served through mailing lists, virtual media, etc. Each group will require its own Terms of Reference (ToR) to specify remit, membership, frequency of meeting, meeting procedures, etc.

When the ICZM plan, strategy or programme are agreed as an output of the ICZM Process, the Steering Group should specify the route and appropriate national or regional body or bodies to formally adopt the document. The strategy, plan or programme may be adopted by one or more Ministries or by local authorities. It may also receive joint endorsement from a vertical combination of both. Sponsoring organisations may also be asked to issue a formal endorsement. **It is important to note that the coordination structure required for the preparation of a plan, strategy or programme may differ from those required for long-term implementation.**

As an example of coordination mechanism, the CAMP Almeria can be presented (the illustration on the next page is prepared by Ms Ana Correa Peña, national CAMP Project coordinator).

Possible ToR for the establishment and functioning of coordination mechanisms can be consulted in Annex 2 and Annex 3. It is to be noted that the scale and complexity of the governance structure should be consistent with the staff and logistical resources available to support it.



2.4. Defining the Territorial Scope

The ICZM as a discipline is profoundly spatially defined as it is related to the activities, including spatial planning, which ensure the best use of resources. All of these activities involve cyclical processes of plan preparation, implementation, monitoring and review. Of critical importance is to define spatial area where these activities will be implemented.

The ICZM Protocol for the Mediterranean uniquely defines the „coastal zone“ in spatial terms, emphasizing the importance of the ecosystem approach and the interdependence of the land and coastal waters. Consequently, Article 3 of the ICZM Protocol defines the geographical boundary of the coastal zone as follows:

a) *„the seaward limit of the coastal zone, which shall be the external limit of the territorial sea";*

b) *„the landward limit of the coastal zone, which shall be the limit of the competent coastal units*".

Exceptions to this are defined where:

a) *„ the seaward limit is less than the external limit of the territorial sea";*

b) *„the landward limit is different, either more or less, from the limits of the territory of coastal units as defined above, in order to apply, inter alia, the ecosystem approach and economic and social criteria and to consider the specific needs of islands related to geomorphologic characteristics and to take into account the negative effects of climate change.“*

The maximum seaward limit is, therefore, relatively straightforward – the external limit of the territorial sea. There is unlikely to be a strong reason for reducing this maximum.

The landward limit is, however, less straightforward – the type and nature of „competent" coastal units varies greatly around the Mediterranean in terms of both their geographical scale (from small municipalities to extensive counties and regions), and in terms of their functions, competencies and

capacities. One common element identifying the „competent“ units is that all of them are bordering the sea. The ICZM strategy, plan or programme boundary should conform to, or fall within, the limits defined by the ICZM Protocol. The geographical scale of the area cannot be predefined in this guide, and one or more of the following should determine it:

- National guidance or the allocations of responsibilities to individual administrations, or to levels of administration such as coastal regions, counties or municipalities.
- Bottom-up initiatives from individual or groups of coastal administrations.
- The physical nature of the area and its landscape.
- Local and traditional perceptions of the coastal area or its issues.
- Functional areas that share common infrastructure, transport and access.
- The adjacent marine area should always be included.

Whatever the scale, an ICZM strategy, plan or programme itself should recognise the inter-dependence of the area and its ecosystem as detailed in the box below.

Techniques & Tools

In defining the ICZM strategy, plan or programme boundary, therefore, the „competent” coastal units should be reconciled with the ecosystem, economic, social and political criteria as above. The ecosystem will, in the majority of situations, extend so far as a significant maritime influence can be recognised in land-use, ecology, landscape or geology, and river catchments. The „significant maritime influence” applies also to economic and social criteria including coastal tourism, culture, agriculture and economic uses, as well as patterns of transport and accessibility and urbanisation.

The use of administrative boundaries should be retained where possible to maintain the integrity of stakeholder accountability and recognition, policy conformity and statistical information. A pragmatic compromise of ecosystem and administration may be required.

ICZM has traditionally dealt with the problem of issues which transcend management boundaries by accepting that, although the physical boundary remains fixed, policy and programme actions may be required „upstream” or „downstream” (in this case the marine territory may extend beyond the territorial sea limit). It will be the responsibility of individual parties to define these boundaries at the scoping stage. This in turn may feedback into the stakeholder analysis as there may be significant interested bodies or individuals who may be required to provide input.

The central message is that, whilst a map boundary may be fixed, the operational limits will almost inevitably „spill over” significantly into the adjoining areas, and possibly to areas which, though relatively physically remote from the ICZM strategy, plan or programme area, are fundamentally linked, within the boundaries of ecosystems, in terms of drivers, pressures, impacts and necessary responses. The ICZM strategy, plan or programme boundary may extend beyond national boundaries where relevant. Article 28 of the ICZM Protocol draws special attention to the need for transboundary cooperation: *„The Parties shall endeavour, directly or with the assistance of the Organization or the competent international organizations, bilaterally or multilaterally, to coordinate, where appropriate, their national coastal strategies, plans and programmes related to contiguous coastal zones. Relevant domestic administrative bodies shall be associated with such coordination.”*

2.5. Defining the Governance Context

2.5.1. Coastal governance baseline

The **objective** of this task is to define the coastal governance baseline by informing stakeholders on the development of the strategy, plan or programme; by providing feedback into complementary plans and programmes; and by identifying policy and institutional gaps.

As Olsen *et al.* noted, „...governance (...) addresses the values, policies, laws and institutions by which a set of issues are addressed. It probes the fundamental goals and the institutional processes and structures that are the basis for planning and decision making." (Olsen, S.B., G.G. Page and E. Ochoa, 2009. *The Analysis of Governance Responses to Ecosystem Change: A Handbook for Assembling a Baseline.* LOICZ reports & Studies No. 34. GKSS Research Centre. Geesthacht.) The „mapping" of the many relevant institutions, along with their policies and functions, is an essential first step in defining the operating context of the ICZM Process. A thorough understanding of key institutional, legal and policy drivers at international, national and local scales is key to ensuring the relevance and effectiveness of a strategy, plan or programme.

Having the above in mind, a stakeholder analysis should be performed in order to identify and assess the importance of key people, groups of people, or institutions that may have significant influence on the success of the ICZM Process. It is an act of identifying the individuals or groups that are likely to affect or be affected by the actions proposed in the ICZM Process, and sorting them according to their impact on the action and the impact the action will have on them. It is also used to anticipate the kind of influence, positive or negative, these groups will have in the process. It is important to identify their real competencies/roles and capacities they have related to the management of the coastal zone. It should also identify the relationships (e.g. cross-cutting responsibilities, missing and overlapping responsibilities, rights, levels of conflict) within and among different stakeholders.

2.5.2. Coastal institutions

Relevant **institutions** at the national scale are the relevant government ministries or agencies. Coastal zone management has generally been led from the ministry responsible for environment. However, the influence of other sectoral ministries or agencies – for example spatial planning, agriculture, water, fisheries, tourism, infrastructure, economic development, maritime affairs, etc. – on the future of a coastal zone will be of equal or even greater significance.

The spatial boundaries of administrations and their relevant functions should also be mapped. An understanding of relevant private, scientific and non-governmental organisations will also be essential. The potential role of such organisations as a service provider through, for example mapping, data or meeting space, as a client for the strategy, plan or programme outputs, as a potential facilitator or intermediary with key groups, or even as potential partners should be well understood.

2.5.3. Policy and legal context

Similarly, the **policy** context will be equally broad, ranging from spatial plans to economic development strategies and sectoral plans and policies for water, energy, transport, waste,

agriculture, etc. The key relevant plans, programmes and policies, along with the organisations responsible for them, must be identified.

As important as the existence and importance of institutions, policies and programmes is an understanding of their effectiveness, their influence, or in some cases, their absence. Mapping should therefore encompass any weaknesses and gaps.

Finally, the **legal** context for ICZM interventions should be defined. In principle, it is at the national level where major legal acts affecting coastal development are being adopted. All ICZM relevant laws and regulations should be identified and their impacts on the respective coastal area briefly assessed. In addition, there may exist regulation adopted at lower, regional or municipal, administrative level. It should be identified and analysed in the same manner as described above.

Techniques & Tools

Stakeholder analysis will be carried out in the Establishment stage, but its results will be fully utilised in the subsequent stages of the ICZM Process. The Process should allow for the iterative evolution of the analysis as more stakeholders become involved.

Identification of legislation, policies and programmes: desk-based documentary analysis supplemented by interviews early in the Process.

Institutional and functional analysis: various tools are available, such as mapping and clustering. However, there is no straightforward technique for identifying the „political" sensitivity by those managing the Process. Institutions should be considered according to their:

- Remit, both functionally and spatially;
- Relevance to both the coastal zone and its problems and issues;
- Resources and skills, including technical resources, personnel, data and information;
- Influence, including both legal and political;
- Role in relation to the ICZM Process as service provider, client, facilitator or potential partner.

2.6. Scoping the Problems, Issues, Drivers, Pressures and Risks

The **objective** of this task is to describe the generally understood conditions of the coastal zone at the start of the ICZM Process, whether or not they are verified or verifiable at this stage. It is better to include all perceived problems and issues at this stage, leaving them to be „distilled" into a manageable and refined set of „core" issues later in the Process.

2.6.1. Scoping Problems and Issues

The first analysis of key **Problems and Issues** should be relatively cursory – primarily to guide future discussions, to assist in the identification of stakeholders, and to identify work priorities, recognising that the list will change and be refined over the whole cycle once a wider range of stakeholders are brought into the ICZM Process.

Techniques & Tools

The selection of issues must encompass the full spectrum of the 3 pillars of sustainability – environment, society and economy (avoiding „observer bias" in the identification and selection of issues resulting from the professional background of the persons conducting the analysis).

The nature and quality of governance is also a key theme that will be developed through the objectives, definition of indicator and the policy process, and should therefore be included in the problems and issues analysis. Therefore, the institutional issues related to governance performance need to be taken into consideration in order to identify what the institutionally perceived outside (environmental/social) and inside (for functioning of their institution) problems are, and how they respond to those problems. The problems and issues should therefore be described under governance, environmental and socio-economic headings.

2.6.2. Scoping Pressures and Drivers

The initial identification of **Drivers and Pressures** is next, and it could be carried as an independent task, or, if conditions allow it, as the first two stages of the DPSIR (Drivers – Pressures – State –Impacts – Response) framework that provides the converging framework for assessment, planning and indicators.

Drivers are the high-level forces that „drive" the society to impose or decrease pressure on the environment of the coastal zone and watershed. As with the Problems and Issues analysis, the identification of drivers must encompass the full spectrum of the 3 pillars of sustainability.

The objectives of this analysis are to describe how these natural and societal drivers lead to pressures on the coastal zone ecosystem, and to provide a vital communication tool to engage stakeholders. These could include:

- Demography and urbanisation;
- Use of resources;
- Economics (e.g. globalisation, market, commerce, GDP and poverty);
- Climate change;
- Use and adaptation to technology;
- Social and political change;
- Scientific and technological changes;
- Cultural drivers (consumer choice & perception);
- Land- and marine-use management and changes.

Additionally, the analysis of drivers should also include relevant existing or potential economic, social and environmental policies and programmes of governments at all levels that will drive change in an area. Examples include sub-regional economic policies, agricultural subsidy regimes, fisheries quotas, and waste and water quality directives. These will include both national and local policies and legal instruments, as well as relevant global, regional and European legislation and conventions. Conversely, the lack of a comprehensive or adequate policy and legislative framework may also be considered a driver.

Techniques & Tools

The identification of Drivers & Pressures at the **Establishment** stage will primarily be a desktop exercise supported by participative techniques such as brainstorming (for example, the Blue Plan's „Imagine" (for more information visit: www.planbleu.org) systemic and sustainability analysis method), the results being clustered according to a list similar to that above – the Drivers will therefore be indicative rather than definitive at this stage.

Pressures will require a higher level of quantification in many areas. However, spatial disaggregation of relevant data (such as GDP levels), trends or information to the local, coastal level may not always be possible. Approximations in the form of simple categorisations (such as moderate, severe, very severe, low, medium, high), or simple numerical scales (such as 1-5) may be appropriate. Such simplification may have benefits in saving time and aiding communication with non-technical stakeholders. Even the use of emoticon symbols has been used to good effect in some areas.

2.6.3. Scoping Risks

The objective of the **Risk Identification** is to identify key areas of uncertainty, to identify vulnerability, and to help identify measures to increase the resilience of the coastal zone. This task seeks to identify the natural and man-made risks to the coastal area of a magnitude that exceeds normal „trend" expectations of other pressures. Examples include severe flooding, acute pollution from watershed or marine sources, or enhanced disaster risk as a result of topography, sensitivity or proximity to a major natural or man-made risk source, or even to social or economic instability.

Climate change adds a new and challenging dimension to risk analysis in coastal areas, not only because of the uncertainty of its scale and impacts, but also because of its long-term nature compared to, for example, the risk of pollution from a shipping disaster. Nevertheless, climate change is probably the most important, far-reaching and difficult to predict risk in terms of the scale and nature of its impacts on the coastal zone.

Techniques & Tools

The risk analysis is primarily a desk exercise in conjunction with the key stakeholders and technical experts from relevant sectors. Risk vulnerability is conventionally categorised according to the:

1. Nature of the risk and its consequences
2. Magnitude of the possible adverse consequences from each risk
3. Probability of occurrence of each risk

Quantification may be possible in many risks (e.g. area of land subject to flooding according to likely scenarios). However, in many risk cases, approximations in the form of simple categorizations (such as moderate, severe, very severe, low, medium, high), or simple numerical scales (such as 1-5) may be appropriate. Such simplification may have benefits in saving time and aiding communication with non-technical stakeholders.

For instance, climate change risk analysis will be based on high, medium and low impact scenarios derived from IPCC projections.

2.7. Engaging Stakeholders and preparing Communication Strategy

The **objective** of this task is to ensure full engagement of stakeholders and the public in the ICZM Process and its implementation.

Time and resources must be allowed for the process of consultation either formally or informally to ensure that stakeholders and the wider public in the coastal area are not just aware of the plan, strategy or programme and its importance, but are also engaged in the process of its preparation. Ultimately the success of the implementation will rely on the key audiences being inspired by the process and its objectives.

Based on the stakeholder analysis, a Communication Strategy, defining stakeholder engagement, will be drafted at this stage. Communication Strategy should contain the following:

- **Communication objective**: Communications should support the Vision and Objectives of the ICZM strategy, plan or programme.
- **Key message** and the „identity" of the strategy, plan or programme: ICZM and other acronyms are not recognised or relevant to the non-technical audience, the technical nature of the Process can be a barrier to effective communication. The Key Message should be positive, simple and widely accepted.
- A professional **branding and identity** specification will ensure consistency of presentation across media and the web, throughout the Process and strengthen the wider recognition of the strategy, plan or programme.
- **Identification of key audiences**: This should follow from the stakeholder analysis, but should include a brief description of what each group should know about the strategy, plan or programme; the reaction or „result" from each group (e.g. raise awareness, become involved, change entrenched attitudes, give political support etc.); and the appropriate media. Key individuals may also be identified who may become „ambassadors" for the strategy, plan or programme. The audiences will also be divided between external (i.e. local communities, government agencies, NGOs, business, media, opinion formers, etc.), and internal (partners, technical staff, external consultants, etc.).
- **Communication and promotion mix**: how the message is conveyed. To the external audience this will include: press and TV, online, print, events and conferences. Internally this will include meetings, printed media and electronic media. Training in communication may be required. Innovative methods of communication and visualisation should be considered.
- **Measurable targets** should be set where possible (e.g. number and frequency of press releases, printed material, number and type of meetings, etc.) along with measures of effectiveness (e.g. hits on web-site, attendance at meetings, etc).
- **Budget**: Define what funds are required within the programme and what external support can be offered by partners (for example web hosting and meeting venues).

2.8. Proposing Potential Vision

The scoping process should help identify the key points and agree on the initial priorities around which the vision could be formulated, and where there are potential conflicting sectoral visions depending on the point of view of the sector in question.

For example, spatial plans may propose large urban and tourism development in areas that are highly vulnerable to climate change (due to e.g. sea level rise and coastal inundation). Similarly, proposed measures for protection from flooding or coastal erosion could cause significant biodiversity losses

and undermine the natural equilibrium. Economic growth is often the most dynamic and highest in coastal areas, leading to further environmental stress. The need for sustainable development is also a highly accepted determinant of the vision for the future; however, there are often substantial differences in understanding of what is actually sustainable.

The scoping report should at least pose the question ***„What do we want to see in the area in a 15 – 20 years time?"*** and propose at least a tentative vision shared amongst the key stakeholders to present to a wider audience in order to trigger the next stage – Analysis and Futures.

2.9. Deciding on Strategic Environmental Assessment (SEA)

Strategic Environmental Assessment (SEA) is not compulsory but it could be initiated early in the ICZM Process, more specifically when the Potential Vision is being prepared. SEA is a forward-looking tool and is being implemented in parallel with the planning, programming or policy definition process.

„Strategic Environmental Assessment (SEA) is a systematic process for evaluating the environmental consequences of proposed policy, plan or programme initiatives in order to ensure that they are fully included and appropriately addressed at the earliest stage of decision-making, on a par with economic and social considerations." (Evaluating Socio Economic Development, SOURCEBOOK 2: Methods & Techniques. Strategic environmental impact assessment. EU Regional Policy, INFOREGIO, 2009)

SEA operates at a strategic level, and stresses process rather than a detailed technical analysis. The nature of the tool, and the practical steps involved, vary from context to context. Importantly, SEA does not, in general, demand sophisticated and expensive data gathering and modelling capacity. The process that delivers the final product is important, with institutional cooperation and public participation being key determinants of success. The key message for an SEA applied to the process is: keep it simple, clear and transparent.

2.9.1. When is it required?

The legal requirement for an SEA for strategies, plans or programmes for coastal areas will vary from country to country and between local areas.

At the Establishment stage, therefore, an assessment should be made as to:

1. The potential mandatory requirement for an SEA;
2. The desirability and potential added-value of an SEA.

Article 19 of the ICZM Protocol calls for the application of Strategic Environmental Assessment to plans and programmes affecting the coastal zone. Arguably this may be applied to strategies for coastal areas as well.

1. *„Taking into account the fragility of coastal zones, the Parties shall ensure that the process and related studies of environmental impact assessment for public and private projects likely to have significant environmental effects on the coastal zones, and in particular on their ecosystems, take into consideration the specific sensitivity of the environment and the inter-relationships between the marine and terrestrial parts of the coastal zone.*
2. *In accordance with the same criteria, the Parties shall formulate, as appropriate, a strategic environmental assessment of plans and programmes affecting the coastal zone.*
3. *The environmental assessments should take into consideration the cumulative impacts on the coastal zones, paying due attention, inter alia, to their carrying capacities."*

Within the EU Member and Accession States the SEA Directive (2001/42/EC) requires that systematic environmental assessment be considered for plans and programmes prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use and other activities, which set the framework for future development consent of projects listed in Annex I and II to the EIA Directive (85/337/EEC) or which, in view of the likely effect of sites, require an assessment under Article 6 or 7 of the Habitats Directive (92/43/EEC).

Other (non-EU) states are likely to have, or are developing, SEA legislation. The environmental authorities of the relevant state should therefore be consulted on the requirement for an SEA and its terms of reference.

2.9.2. Potential benefits of using SEA

Applying SEA may benefit both the plan-making process and the implementation outcomes. It provides the environmental evidence to support more informed decision-making, and to identify new opportunities through a systematic and thorough examination of development options. SEA can also assist in building stakeholder engagement for improved governance, facilitate trans-boundary co-operation around shared environmental resources, and potentially contribute to conflict resolution over the use of shared resources.

Within ICZM, SEA may prove to be a useful tool to assess the conformity of short-term implementation proposals with longer-term issues and policies; particularly those relating to climate change where short-term actions may compromise or conflict with long-term adaptation.

2.9.3. Management of the SEA process

The EU SEA Directive stipulates that an SEA has to be carried out during the preparation of the strategy, plan or programme and must be completed before its adoption. SEA is therefore an integral and parallel part of the planning process. The report may be part of the Plan, but in any case it must be clearly distinguishable.

SEA should be carried out independently but in close collaboration with the planning team, and may proceed in the same manner as the planning process. It should be an interactive process producing judgements and recommendations by SEA experts.

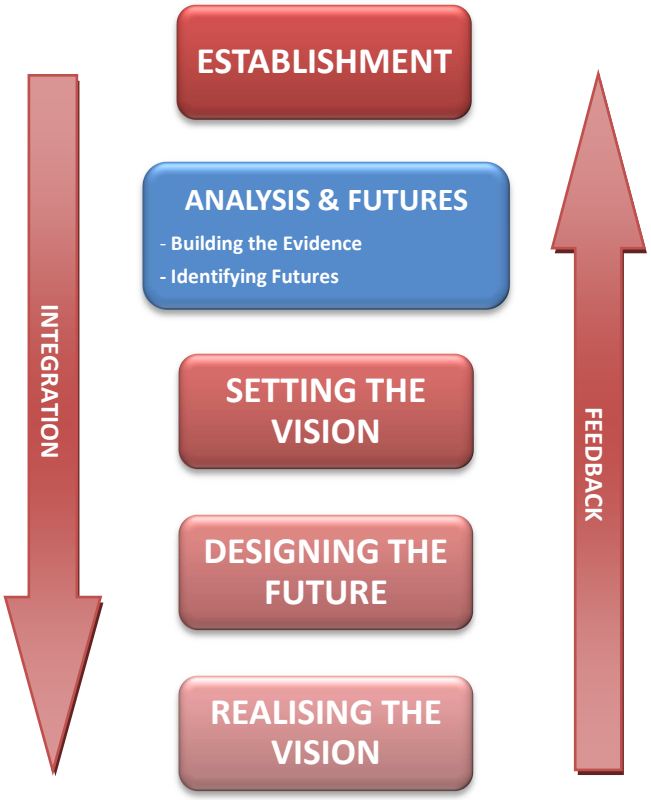
Environmental issues and concerns that should be considered under the EU SEA Directive:

- biodiversity, fauna and flora;
- population and human health;
- soil;
- water;
- air and climatic factors;
- material assets;
- cultural heritage, including architectural and archaeological heritage;
- landscape;
- energy efficiency;
- use of renewable and non-renewable resources;
- adaptation to climate change;
- transport demands, accessibility and mobility, etc.

Of special concern is the inclusion in the SEA of the marine zone and up-stream impacts on areas beyond the coast.

3. ANALYSIS AND FUTURES

The overall aim of the second stage, **Analysis and Futures**, is to add substance to the issues and aspirations initially identified in the preceding **establishment** stage – making the invisible visible and engaging stakeholders in the search for outcomes.



3.1. Key tasks

Two main tasks have to be undertaken in this stage:

1. **Building the Evidence**: carrying out more detailed analyses of key issues where needed.
2. **Identifying Futures**: building alternative scenarios and testing them through pilot actions, if needed, and identifying potential future funding sources.

The objectives of the Analysis and Futures stage are therefore:

- to substantiate the issues and problems through more rigorous analysis and review – to describe the present „State" and likely future trends;
- to generate and test alternative views of the future through the use of tools such as scenarios;
- to lay the foundations of future cooperation and implementation through pilot actions and the identification of future funding sources.

3.2. Potential Outputs

A **Diagnostic Report** will be produced on the state and future trends. Therefore, it is recommended to complete the DPSIR framework.

Also, **Alternative scenarios**, including the preliminary schedule of **future funding sources** for implementation, and the first **pilot actions** will be prepared where appropriate.

3.3. Building the Evidence: Diagnostic Report

Within the parameters of the objectives and indicators, the task is to better understand both the present context and the future flows of processes in the area. This is achieved by:

- Analyzing in greater detail the key problems and issues and, then, summarizing the existing conditions of the area and root causes, focusing on the agreed priorities (governance, environmental and socio-economic).
- Projecting the conditions forward on the basis of possible or likely trends for periods compatible with the lifespan of the ICZM strategy, plan or programme.
- Examining factors such as the goods and services provided by the ecosystem, along with wider area's issues such as erosion, land husbandry, deforestation and pollution (both point sources and diffuse).

The objectives, here, are two-fold: first, to ensure a solid basis for discussion, and second, to provide a basis for the visualisation, testing, development and discussion of alternative futures, in other words, „to make the invisible visible“.

The value of local, or ethnic knowledge should also be recognised and sourced. It should be recognized that the affected citizens and employees in a coastal community may have a profound knowledge of the coastal system, and should be actively involved in the analysis in order to improve the quality of the analysis itself.

Techniques & Tools

Whilst technical data, measurable objectives and indicators are easily visible and underpin ICZM, it is the „intangibles“ – the assumptions, interests, beliefs, agendas and real power structures – that must be engaged in order to allow any real progress. The challenge is how to create the preconditions for these intangibles to play their legitimate role in the process.

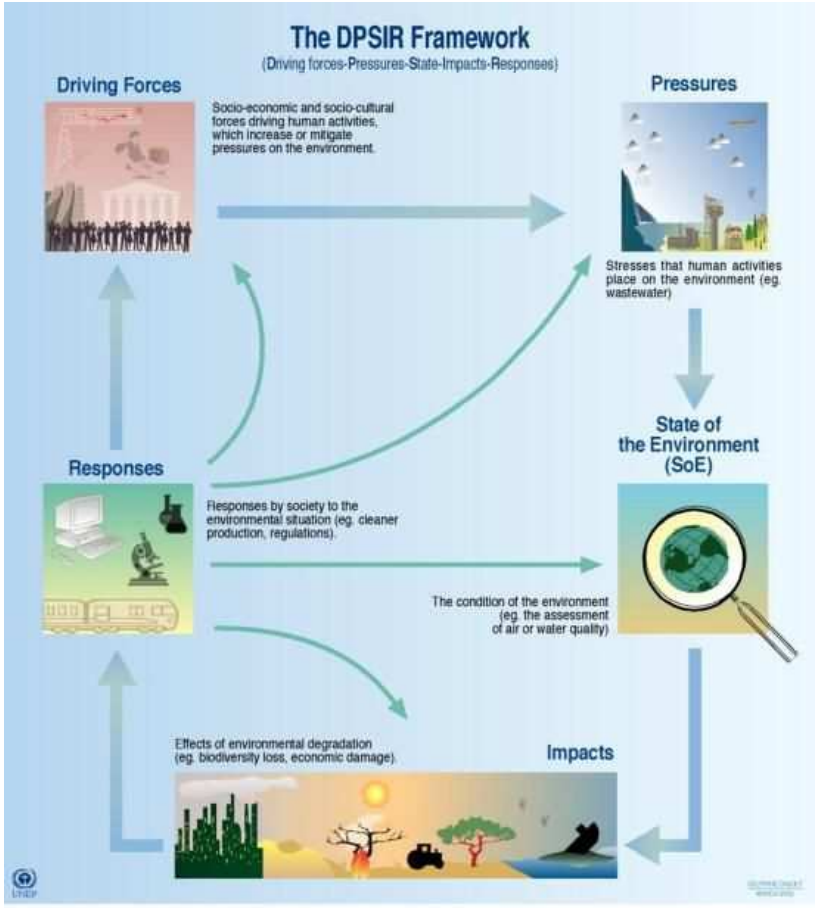
Much data and information will already be available, so the first task is to source, assess and re-present this. **New research should only be required to fill the gaps or update the existing data and information.** Importantly, the data and information collected should be **“fit for purpose“** for its intended use i.e. these should be appropriate and of a necessary quality, without being excessively complex or more expensive to obtain than required.

One of the important ways of utilising the data at this stage is to perform the full **Driver-Pressure-State-Impacts-Responses (DPSIR) framework**. It is a tool that aims to develop appropriate management responses to certain environmental problems. It is a descriptive, simple and flexible cause-consequence loop which illustrates the links between human activities and environmental processes. It has been widely used in environmental research, as it helps stakeholders to understand the importance of natural systems in the decision-making, as well as the repercussions of economic activities.

Techniques & Tools (afterpart)

The main elements of the DPSIR framework are:

- **Drivers** (or driving force of certain environmental problem) – they are a result of human needs to satisfy their primary (shelter, food, water, energy) and secondary requirements (mobility, culture, entertainment). They include social, economic and demographic changes in societies, which are reflected in changes in production and consumption levels, and people's lifestyles in general.
- Drivers lead to **pressures** on the environment. They are results of production and consumption processes and, usually, they are reflected in increased emissions of harmful substances in the air, water and soil; changes in land use; excessive usage of certain goods; alterations of sediment and water cycle etc.
- Pressures result in altered **state** of the environment. The state of the environment represents the level of environmental quality, which is reflected in environment's biological, physical and chemical conditions.
- Altered state of the environment exerts environmental and economic **impacts** on ecosystems (such as altered biodiversity, social and economic impacts, repercussions on human health etc.)
- **Responses** are prioritisations with the aim to reduce negative impacts on environment, economy and society in general. Responses can affect any part of the chain between drivers and impacts. In case of ICZM Plan Process, the Responses should be discussed in form of proposals of how to deal with environmental issues.



Source : Global International Water Assessment (GIWA), 2001; European Environment Agency (EEA), Copenhagen.

Schematic presentation of the DPSIR Framework proposed by Global International Water Assessment (GIWA), 2001; European Environment Agency (EEA).

3.4. Future Trends

Future Trends will inevitably be speculative, based on retrospective data, or on accepted forecasts; most importantly they should be „**likely**“ rather than „**desirable**“ trends at this stage. This is, in essence, the conclusion of the diagnostic phase, which should describe what would happen if the present trends continued.

3.5. Identifying Futures: Scenarios, Pilot Actions, and Funding

3.5.1. Scenarios

Scenarios – alternative, „what if?“ visions of the future – and the process of generating them can be used as a key part of the ICZM Process. Scenarios can be used to:

- Provoke debate about common futures;
- Expand the range of options;
- Expose contradictions and conflicts;
- Clarify and communicate the technical analysis;
- Expose uncertainties for future developments:
- Evaluate policies in the face of an uncertain future.

Scenarios and the process of scenario development should engage the imagination of both the planners and the stakeholders. Their value should be in widening the participants' perception of possible future events and possibilities, and encourage *„thinking the unthinkable“*.

Scenarios can be generated from a combination of factors, such as demographics or economic growth, with plausible alternative political, social, technical, legal and environmental trends as key driving forces. Climate change scenarios will add an additional „control“ dimension to the process.

Asking what actions are required to mitigate the negative or reinforce the positive aspects of the likely scenarios can then influence the formulation of ICZM plans, strategies or programmes.

There are many variations of the scenario process, but these can be placed between two extremes:

1. A limited number of „top-down” scenarios generated formally by the planning team and subject to a formal consultation – often consisting of „high“ and „low“ scenarios centred on a „do nothing“, „business as usual“ or median options.
2. A fully participative „bottom-up” process involving facilitated workshops, etc. at which few constraints are placed on the number or range of alternative scenarios generated.

The option 1 requires an effort to do a research and quantification, but is self-limiting in the quality or innovation of options. It is also largely self-fulfilling in terms of stakeholder response and the resulting plan, strategy or programme. The option 2, following the fully participative process, offers a more creative way forward in terms of the selected outcomes and, more importantly, taps in to local knowledge and encourages the „ownership“ of the outcomes but is less endowed with quantified outcomes and indicators. The best option would be to combine the two: scenarios based on research, analysis and quantification, and scenarios based on participative process where decision making could be simulated (option 2) and impacts of these decisions assessed (option 1). It is important to note that scenario making is not, *per se*, a decision making process. It may simulates decisions, but actual decision-making could take place only in the planning process.

The indicators can be used to help „measure“ the impacts of the alternative scenarios in terms of costs and benefits, but recognising and accepting that in many cases these will be speculative. The

degree of sophistication applied to the technical evaluation of alternatives through, for example, cost-benefit analysis, will be dependent on the resources and expertise available.

3.5.2. Techniques & Tools

The literature contains many scenario tools for sustainability. No one technique is prescribed here for the coast. Rather, the precise techniques used will vary with local cultures, social and administrative complexity, local capacity and other contextual factors. In all cases, however, the added value of participation should be maximised.

3.5.3. Pilot Actions

One of the most powerful tools for securing stakeholder and public „buy-in" to the ICZM Process is through pilot actions. The executions of pilot actions – especially eye-catching, showcase projects – can be one of the most important tools to demonstrate the benefits of collaborative action to the stakeholders. Pilot actions and small-scale demonstration projects are designed to:

1. Give real, practical and visible substance to the planning process;
2. Build trust and capacity by engaging a wide variety of stakeholders in collaborative activities;
3. Test and enhance the local potential for future interventions.

Community-based pilot actions can take many forms: from small-scale concrete actions, to awareness-raising events, data collection and local knowledge sharing. Pilot actions are primarily demonstrations of the relevance and potential of ICZM. In particular, the actions should test the benefits of an integrated approach. They can be linked to wider events such as the annual Mediterranean Coast Day[4].

The criteria for selecting the right project as a pilot can include:

- Relevance;
- Integrative nature;
- Duration;
- Manageability;
- Cost.

There is no one accepted technique for pilot actions. Such actions should be closely adapted to the local cultural context plus the local capacity for such projects.

3.5.4. Future Funding Sources

This is a preliminary identification of key potential funding sources for the subsequent implementation. Although the action plan will not yet have been elaborated, **the identification of potential major funding sources will help create the favourable preconditions for the delivery of the strategy, plan or programme by** linking them with the results of the scenario development. If a specific scenario has the feasibility of its implementation tested through identification of potential funding sources it could be considered, then, as more realistic because:

1. Ensuring that the proposed actions are realistic and deliverable.
2. Reducing the time gap between plan and actions – thereby maintaining momentum, stakeholder confidence and support.

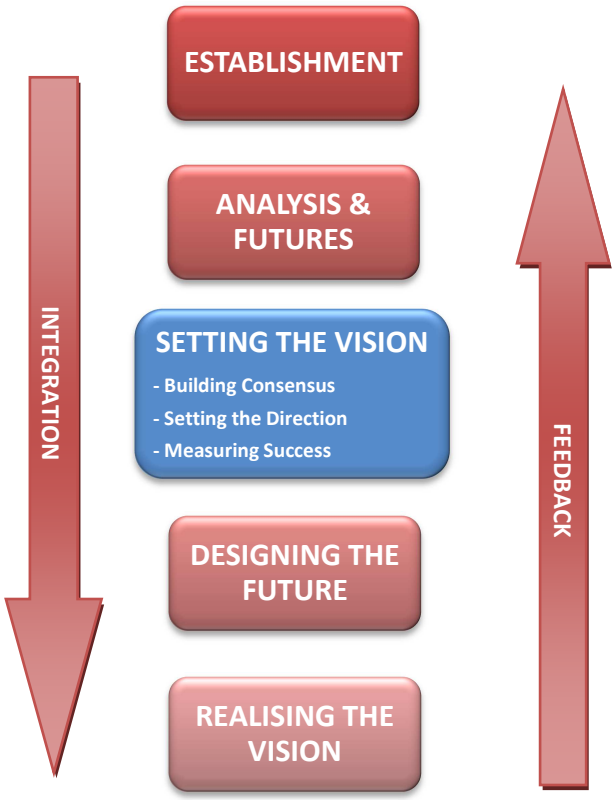
[4] *Visit: http://www.coastday.org/*

4. SETTING THE VISION

4.1. Key tasks

In the third stage, the main tasks can be summarised as follows:

1. **Consensus Building** – agreement among stakeholders and the wider community on the key problems, issues and priorities for the area.
2. **Setting the Direction** – agree on the vision for the area, the priorities and the consistency of the objectives of the strategy, plan or programme.
3. **Measuring Success** – selecting the indicators to measure the success of both the ICZM Process and its outcomes.



4.2. Potential Outputs

A single **Vision Statement** including priorities and objectives, along with supporting interpretive material and reports of the participation process, as well as the Indicator Matrix (to be „populated" throughout the following stages of the ICZM Process and its implementation).

A **vision** should be both rational and inventive:

„Prospective is above all an attitude of mind … and a way of behaving…. If it has no future direction the present is empty of meaning…. The rational and the inventive trends of strategic planning are complementary, only prima facie they seem opposite." (*Godet, M. 1987. Scenarios and Strategic Management, Butterworth: London)*

4.3. Building Consensus

The stakeholders identified in the Stakeholders Analysis performed in the Establishment stage should now be fully active in order to filter, validate and amend the issues arising from the Scoping Report, which were confirmed and further developed during the Analysis and Futures stage with the aim to identify priorities.

The **objectives** of the consensus building exercise are to:

- Validate and amend the Scoping Report based on stakeholder reaction;
- Identify the inter-linkages between the Drivers and Pressures, and the Problems and Issues in a DPSIR (Drivers, Pressures, State, Impact, Response) framework, and to agree on the risks confronted;
- Refine a shared set of priorities.

4.3.1. Bottom-up vs. Top-down Priorities

Additionally, the ICZM Process will need to reconcile the community-based priorities with those originating at a higher governmental or sectoral level. Ideally, these should be mutually supportive where, for example, community concerns relating to local seawater quality are reflected in a statutory requirement to meet national or international standards. Equally, however, priorities may conflict in, for example, the adaptation to climate change requiring localised development restrictions.

A further refinement or consolidation into a shorter number of „**headline**“ issues will aid objectives and indicator selection in later stages.

4.4. Expert View

„Consensus building is one of the crucial missions of the technical group, but also of the steering group and of all involved in the ICZM process. This mission starts with the process initiation and continues throughout the process. Owing to their numerous factors of attraction, the coastal zones have become the most complex and interconnected social and natural environments. Within such complexity there are a number of different interests, rarely complementary. In order to find efficient solutions for sustainable development all stakeholders should feel involved, listened to and respected. This does not happen spontaneously; quite the contrary it requires a lot of time, energy, patience, skills and resources.

Consensus building is an important, even crucial factor for developing the ownership and participation, and eventually for achieving a wide stakeholder engagement. It helps the stakeholders in developing mutual understanding, indispensable for reaching quality solutions for all. It is unrealistic to expect that all stakeholders will be equally satisfied with the results, but along the process of consensus building the views of some stakeholders may change and become better adjusted to sustainability. Consensus built during the ICZM Process is the main guarantee that the outputs of the ICZM Process will eventually result in a real change towards the sustainability of the coastal zone."

Daria Povh-Skugor, PAP/RAC Programme Officer

4.5. Setting the Direction

Setting the Direction, or preparing the Vision Statement, will define the desired or intended future state of the coastal area in terms of its fundamental strategic direction. The vision describes in simple terms the condition of the coastal area in the future, in a time-span of 10 to 30 years and even beyond, if the strategy, plan or programme is implemented successfully. Ideally the vision should be:

- Clear and compelling;
- Aligned with the partners' and the community's aspirations and existing policies;
- Ambitious and memorable;
- A vivid picture of a desired future.

The Vision Statement and the objectives are derived from the agreed priorities. PAP/RAC has defined a „model" vision for the Mediterranean coast, which encompasses 6 principles of sustainable development. It envisions coast that is:

- **Resilient** – resilient to future uncertainties of climate change, including rising sea levels, warming and drought; resilient to climate variability such as extreme storms, floods, waves, etc; resilient to earthquakes and erosion; resilient to negative impacts of human processes, including the pressure of tourism and urban development on the coast.
- **Productive** – productive financially in traditional, modern and future economic sectors; supporting the economic aspirations of the coastal community; providing a competitive asset to the local economy, high in natural and economic values – increasing GDP and alleviating poverty.
- **Diverse** – ecologically diverse: a rich mosaic of marine and terrestrial ecosystems; diverse rural and urban landscapes, old and new; a diverse economy – providing a diverse, but distinctly Mediterranean experience; a diverse society – providing conditions for a rich mixture of social groups, open to the outside world, etc.
- **Distinctive** – retaining the cultural distinctiveness of coastal areas, including their architecture, customs and landscapes, recognising the Mediterranean as the „cradle of civilisation" – providing a distinctive marketing image on which to attract investment.
- **Attractive** – retaining the attractiveness of the coast, not only to visitors but also to investors and local people to promote a self-sustaining cycle of sustainable growth.
- **Healthy** – free from pollution from land and marine-based sources, with clean fresh and marine waters and the air – providing a healthy environment for people, natural resources such as fisheries, and wildlife.

Objectives of the Vision will describe how the implementation of the Vision can be measured and achieved, and will reflect the governance, environmental and socio-economic priorities. Objectives describe, in measurable terms, the desired end state and are the measure of the ICZM Process performance.

The objectives should be measurable, attainable, realistic and time-targeted. Beyond this simple description, however, the objectives can become more complex, distinguishing between: High Level Objectives (or Goals) and clusters of Sub-Objectives.

Many objectives will be predetermined in the existing international, national and sub-national policies. Examples include, above all, the Barcelona Convention, but also the instruments such as Horizon 2020, the Water Framework Directive, the Marine Strategy Framework Directive, the Maritime Policy and other. In many cases these adequate benchmarks will be provided, but they should be reviewed to identify the potential to exceed them as a minimum aspiration.

4.6. Measuring Success: ICZM Indicators

4.6.1. What are indicators?

„Indicators are quantitative/qualitative statements or measured/observed parameters that can be used to describe existing situations and measure changes or trends over time. Their three main functions are simplification, quantification and communication...Indicators generally simplify in order to quantify complex phenomena so that communication of information to policy-makers and other interested parties, including the general public, is enabled or enhanced…They are powerful tools in the feed- back loop to an action plan, as an early warning signal about an emerging issue, or in providing a concise message for engagement, education and awareness." (A handbook for measuring the progress and outcomes of integrated coastal and ocean management. Manuals and Guides, 46; ICAM Dossier 2, IOC, UNESCO, 2006)

The indicators should therefore be:

1. Clearly aligned with the objectives;
2. Clearly linked to the output/outcome being monitored;
3. Developed with stakeholders;
4. Part of the management process and not an end in themselves.

4.6.2. Why indicators?

Effective monitoring and evaluation is an indispensable tool in the planning and implementation process. Indicators serve both as a corrective function during the ICZM Process cycle, enabling adjustments, as a guide to structuring implementation effectively, and as a communication tool.

In preparing a strategy, plan or programme for a coastal area, a set of governance, environmental and socio-economic indicators that align with the objectives should be prepared to determine whether the interventions are successful.

The setting of indicators flows from the prior stages of the ICZM Process.

4.6.3. Relationship to objectives

The Matrix of Indicators will become a core of the strategy, plan or programme, quantifying the objectives and ultimately measuring implementation. Indicators will also play an important role in:

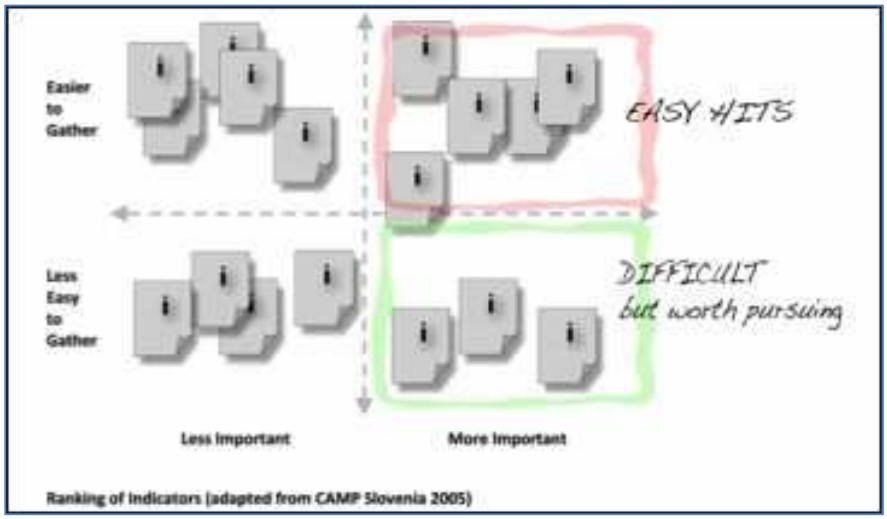
- Evaluating options – providing a checklist to measure outcomes both positive and negative.
- Measuring the implementation of the strategy, plan or programme.
- Reconciling the long- and short-time horizons – measuring short-term outputs against long-term outcomes.

There should be three types of indicators:

1. **Sustainability Indicators**: measures to show that the strategy, plan or programme purpose is realised – long-term outcomes.
2. **Impact Indicators**: measures to show that the strategy, plan or programme outputs are achieved – medium-term outcomes.
3. **Performance Indicators**: measures to show that activities are undertaken – short-term outcomes.

The identification and collecting of data for indicators can appear daunting. However, a simple, preliminary ranking of relative importance along with their relative ease of gathering will assist the allocation of resources to this task.

The diagram below from the CAMP Slovenia illustrates a simple matrix for ranking indicators according to both their importance and the practicality of gathering them.



Ranking of Indicators (adapted from CAMP Slovenia 2005)

4.6.4. Indicator Hierarchy – headline and specific indicators

Too many indicators will aggravate rather than help the process. A limited suite of indicators is required: headline indicators and specific indicators. The detailed specific indicators may be appropriate for a technical audience or for core and funding partners; but for a wider audience specific indicators may be meaningless and obfuscating.

A further refinement, therefore, will be to select a limited number of „Headline Indicators“ to effectively report trends to a non-technical audience on Sustainability, Impact and Performance. These in turn should be presented in a way that quickly conveys a picture of progress. In many cases the indicator data are condensed into simple graphic forms such as emoticons (smiley faces), traffic lights or other images, ordinal ranking scores (1 = worst, 5 = best).

The prime function of Headline Indicators is communication – so, which are the best-understood indicators to convey the overall progress of the strategy, plan or programme? Which indicators will have an emotional resonance with the target audience?

4.6.5. Techniques & Tools

The example shown below is based on hypothetical socio-economic objectives. However, it should be kept in mind that the indicator description does not, at this stage, include the quantification measure (e.g. number of hectares, number of jobs, etc.) that would be required for each indicator as part of the final strategy, plan or programme.

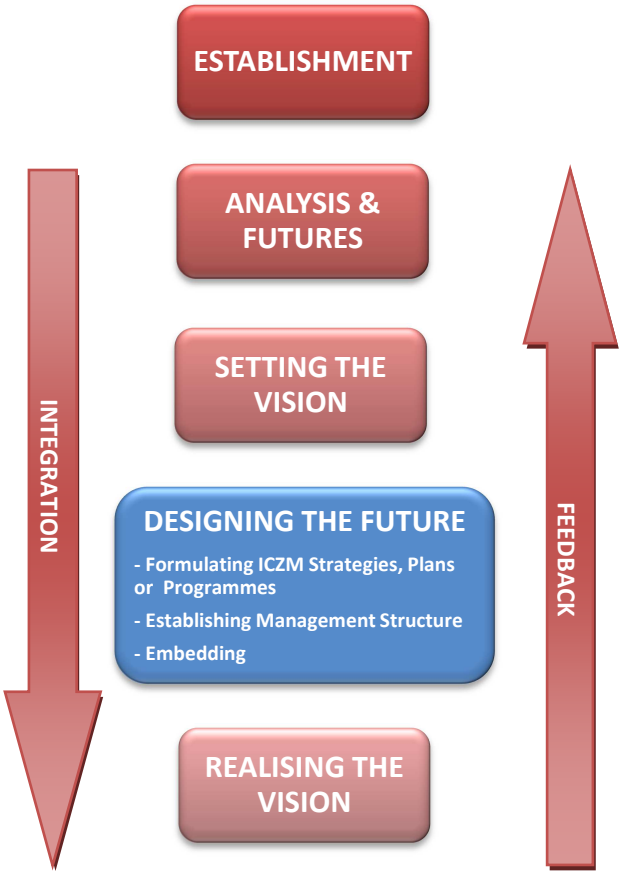
The complexity and number of indicators will vary according to the nature of the area and the resources available. They should, however, include governance, environmental and socio-economic indicators that align with the objectives.

	INDICATOR TYPE	HUMAN PRESSURE				POLLUTION				
EXAMPLE OF OBJECTIVE / INDICATOR MATRIX	INDICATOR DESCRIPTION (not including measures)	Land use & composition	Population & tourist capacity	Extent of land surface	Unlicensed fishing & hunting	Population served by waste water treatment	Volume, number & type of point –source discharges	Non-point source nutrient loading	Discharged sediments & nutrients	Litter & waste
HIGH-LEVEL OBJECTIVES	Sub-Objectives	S1	S2	S3	S4	S5	S6	S7	S8	S9
A healthy & productive economy	Maximising economic development	X								
	Increase employment	X	X							
	Foster economic diversification	X								
A healthy & productive environment	Minimize habitat destruction and alteration	X		X	X					
	Reduce volume of all types of pollutants			X		X	X	X	X	X
Public health & safety	Protect human life and private property									X
Social cohesion	Maintain equitable population dynamics	X	X							

Adapted from "A handbook for measuring progress and Outcomes of Integrated Coastal and Ocean Management. IOC Manuals and Guides, 40 ICAM Dossiers, 2. Paris, UNESCO IOCB.

5. DESIGNING THE FUTURE

The ultimate aim of this stage – and indeed of the whole Process – is to lay the foundations for a self-sustaining process of sustainable coastal development. It will be based on a combination of instruments including concrete actions materialised through an investment portfolio, awareness-raising, institutional adjustments, and policy changes – ultimately transforming the governance culture and the community's understanding and care for the coastal zone. It is at the end of this stage that the Process shifts from analysing, consulting, planning, etc. to catalysing change, i.e. making things happen.



5.1. Key tasks

1. **Formulating the ICZM strategy, plan or programme**, and the actions – evaluating the options, plan and programme formulation.
2. **Establishing management structure** – setting up the inter-sectoral management, facilitation and consultation structures for the long-term, post-plan period, ultimately having impact on the coastal governance performance.
3. **Embedding** – obtaining formal approvals, funding support and legal adoption.

5.2. Potential Outputs

At this stage the **ICZM strategy, plan or programme** should be drafted, as well as the **process for public consultation and their formal adoption**. Draft ICZM strategy, plan or programme include, *inter alia*:

- The terrestrial and marine areas as defined in previous stages, **complementing and not replacing** the existing spatial and other plans or programmes for the area.
- Proposed long-term implementation structure. This structure will not necessarily be the same as that responsible for the preparation of the strategy, plan or programme. Critically, it should include all key national and local agencies that can enable or facilitate the delivery of the plan and its actions.
- Implementation Programme – the action plan including short (3-6 years), medium (5-10 years) and long-term actions, responsibilities for delivery, how costs will be shared, and lines of accountability. The ICZM strategy, plan or programme will contain a mix of infrastructure, „concrete" actions and "soft" tasks such as changes to laws and procedures, regulations, pricing, institutional development, training, awareness and other „soft" interventions.

The ICZM Steering Group or Committee should approve the final **Coastal Strategy, Plan or Programme.** The documents have to be adopted by one or more Ministries or by local authorities at the appropriate level. They may also receive joint endorsement from a vertical combination of both. Sponsoring organisations may also be asked for or require a formal endorsement.

5.3. ICZM Strategies, Plans or Programmes

5.3.1. What is an ICZM strategy, plan or programme?

The ICZM strategy, plan or programme should be a logical output of the preceding stages of the ICZM Process. More specifically, the ICZM strategy, plan or programme is identifying the preferred „trajectory" of change in the coastal area based on the approved objectives, securing its materialisation through concrete actions following an action plan for its implementation, and measuring its success by using a set of indicators. Behind this technical description, **the ICZM strategy, plan or programme is simply an integrated set of desired and integrated outcomes – the „what", along with an action plan to realise them – the „how".** ICZM complements and fills gaps in spatial planning and other sectoral plans or strategies in coastal area. Most importantly, it provides an action plan and a governance structure for delivery.

The Mediterranean ICZM Protocol is very clear on what an ICZM strategy, plan or programme should be. In its Article 18, the strategy should „... *based on an analysis of the existing situation, ... set objectives, determine priorities with an indication of the reasons, identify coastal ecosystems needing management, as well as all relevant actors and processes, enumerate the measures to be taken and their cost as well as the institutional instruments and legal and financial means available, and set an implementation schedule.*" Regarding plans and programmes, the Protocol states that „...*coastal plans and programmes, which may be self-standing or integrated in other plans and programmes, shall specify the orientations of the national strategy and implement it at an appropriate territorial level, determining, inter alia and where appropriate, the carrying capacities and conditions for the allocation and use of the respective marine and land parts of coastal zones.*"

5.3.2. Scope

Beyond the generalities of governance, environment and socio-economics, there is no predetermined set of parameters for the specific issues that an ICZM strategy, plan or programme should (or should not) encompass. This will be determined according to the local political and socio-economic context, and the scope and contents of the existing sectoral plans.

The ICZM strategy, plan or programme should be produced with a clear awareness of the local political and financial opportunities and constraints for implementation.

The proposals should encompass the four levels of outcome, namely:

- The proposals creating an **enabling framework** – the preconditions required to successfully implement the plan of action.
- The **changes in behaviour**: changes in the behaviour of target user groups, changes in the behaviour of key institutions, and changes in how and where financial investments are made.
- The **practical results and benefits** including financial investments and motivations for stakeholders and institutions to make the changes in their behaviour that sustained success requires.
- The **appropriate balance between environment and human society**, in other words, the sustainable development. These are likely to be more long-term, high-level in nature, embedding the outputs as outcomes and fully embedding integration.

Importantly, the ICZM strategy, plan or programme should be holistic and avoid being single-sector led (for example: coastal erosion, water, nature conservation, spatial planning, etc.).

5.3.3. Action Plan

The ICZM strategy, plan or programme will contain an Action Plan which will set out the management actions for a specific period, usually between three and six years. The Action Plan will specify responsibilities for action, how costs will be shared, lines of accountability and channels for exchanging and distributing information. The ICZM strategy, plan or programme will most likely contain a mix of infrastructure, maintenance and non-structural tasks, such as changes to laws and procedures, regulations, pricing, institutional development, training and other „soft“ interventions – ***it should not be a wish list of projects***.

5.3.4. Contents

The practical scope of the ICZM strategy, plan or programme and the issues covered should be locally determined. The ICZM strategy, plan or programme should, however, include the following:

- The **Endorsement** – the statement of adoption by the appropriate levels of government;
- The **Context** – derived from the Analysis and the Scoping Report;
- The **Strategic Vision and Objectives** – elaborated through the preferred long-term scenario for the area and its ecosystem context;
- **Long-term Policies** – based on the Objectives;
- **Governance Structure** – to achieve integration and effective delivery;
- **Institutional framework** for implementation;

- **Action Plan and Investment Portfolio**, probably on a 3-6 year basis;
- **Indicators** – the pre-selected indicators quantified to enable measurement and monitoring of both the process and outcomes of the ICZM strategy, plan or programme.

5.3.5. National Strategies

Specific guidance drafted for the preparation of National ICZM Strategies consistent with the requirements of the ICZM Protocol for the Mediterranean has been prepared[5]. This is still a draft version that has been used within the „MedPartnership" project in Algeria and Montenegro. The experience of these two countries in preparing their national ICZM strategies will be used to finalise the document.

5.4. Expert View – some important elements of the ICZM strategy, plan or programme

„Both ICZM instruments – ICZM strategy and plan, should avoid duplicating the already existing contents of other sectoral or spatial planning documents. Therefore, a thorough analysis in the Establishment stage of the existing documents and their contents should be done, followed by a comparison with the ICZM objectives for the instrument in question. This gap analysis would inform the ICZM Process what is missing, what does not work, and alike. This would also reduce a sort of negative stand of some stakeholders that should be involved in the ICZM Process but may understand the ICZM strategy or plan as something competing with their own instruments.

On the contrary, the ICZM Process should focus on integrative issues, better coordination among institutions and stakeholders; it should create conditions for discussion and consensus building. This should always take the marine and terrestrial parts of the coastal zone into account.

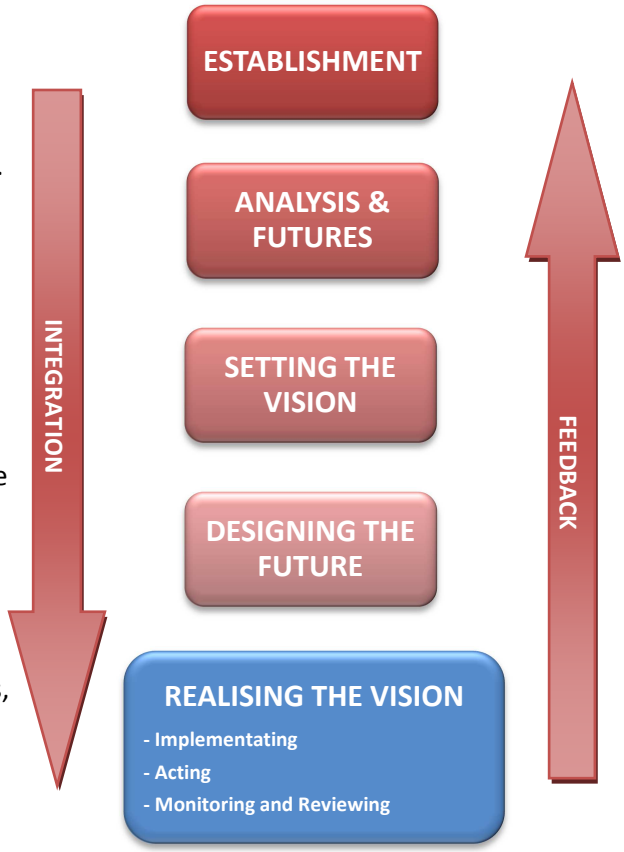
The integrity of coastal landscapes and ecosystems is a crucial objective of the ICZM Protocol and should be materialised through the preparation of ICZM strategies and plans. First, by the definition of the spatial scope and second, by the definition of the planning units that can be ecosystem based, problem or issue related, could have functionality principle as the basis, socio-economic grounds, statistics or any other communality relevant for the objectives of the strategy or plan. Here, interdependencies between the uses and activities on the land and marine parts of the coastal zone should be underlined."

Marko Prem, PAP/RAC Deputy Director

[5] http://www.coastalwiki.org/w/images/d/d4/National_iczm_strategy_guidelines_0712.pdf

6. REALISING THE VISION

This is the critical stage in the Process where policy design shifts to the facilitation of change. ICZM strategies, plans or programmes for coastal areas will deploy a combination of policy instruments, management processes and actions. The strength of ICZM is its flexibility, adaptability to local circumstances, and operability across a range of sectors and issues, and with a representative governance structure.



6.1. Key tasks

Three main tasks will lead to the realization of the vision:

1. **Implementation** – implementing legal, economic and spatial instruments and management process.
2. **Actions** – awareness raising, partnerships, financing and investment.
3. **Monitoring and Review** – constant feedback into the review of the strategy, plan or programme and its action plan.

The implementation programme should have a clear work plan, be embedded into supporting funding programmes, achieving maximum „gearing" through multiple sponsors.

The ICZM Steering Group and implementation team, or those bodies charged with delivery, should be in place and functional.

Outputs and their subsequent outcomes should now be visible and, where possible, monitored as part of the monitoring and review process. Raising and maintaining public awareness will be an ongoing activity.

6.2. Potential Outputs

In order to ensure the long term continuation of the project commitments, potential outputs can be defined:

- A **review** on an agreed timescale. This may include proposal for a feedback to the process in the form of a revision, if deemed necessary.
- The cross-sectoral **management or steering group** with Terms of Reference and clear lines of responsibility and reporting.
- **Outputs** as defined in the programme of implementation or its review.

7. Annexes

Annex 1 – Integrating climate change into the ICZM planning process

Annex 2 – Buja/Bojana ToR, Steering Committee

Annex 3 – CAMP Levante de Almeria, Rules of Procedure

PRIORITY ACTIONS PROGRAMME

Strategic Partnership for the Mediterranean Large Marine Ecosystem

MedPartnership

Together for the Mediterranean Sea

GEF UNEP

Integrating climate change into the ICZM planning process

Contribution to the Integrative Methodological Framework for coastal, river basin, aquifer and groundwater management

MedPartnership/2012/IMF.CC
MAP/Priority Actions Programme
Split, May 2012

The author:

Anil Markandya, *professor at the University of Bath in the UK and the Executive Director of the Basque Centre for Climate Change in Spain.*

Professor Markandya is a resource economist who has worked in this field for over thirty years and is acknowledged as one of the leading authorities. He graduated from the London School of Economics with a Master of Science in Econometrics in 1968 and was awarded his Ph.D. on the Economics of the Environment in 1975. Since then he has divided his time between academic and advisory work.

On the academic side he has published widely in the areas of climate change, environmental valuation, environmental policy, energy and environment, green accounting, macroeconomics and trade. Some of his best-known works include, 'Blueprint for a Green Economy', 'Green Accounting in Europe', 'Reconciling Trade and Development' and 'Cleaning the Ganges'.

Professor Markandya has worked extensively on climate change, energy and environmental issues and has received a number of awards. He was a lead author for Chapters of the 3rd and 4th IPCC Assessment Reports on Climate Change. He was one of the core team that drafted the IPCC 4th Assessment that was awarded the Nobel Peace Prize in 2007. He was also the author of a paper on climate regulation that was awarded 2nd Prize at the World Energy Council in Rome in November 2007.

He has held academic positions at the universities of Princeton, Berkeley and Harvard in the US and at University College London and Bath University in the UK.

In 2008 he was nominated by Cambridge University as one of the 50 most influential thinkers on sustainability in the world.

Professor Markandya has also been an advisor to many national and international organizations, including all the international development banks, UNDP, the EU and the governments of India and the UK. At the World Bank he was a Lead Advisor and worked closely on energy and environmental issues with many governments in Asia, Central Europe and the Former Soviet Union. He has been collaborating with PAP/RAC since 2001 on different projects related to ICZM, economic instruments for environmental protection and the climate change.

Table of Contents

Introduction

This document provides some guidance on the steps to be taken in including climate change related issues into the ICZM process. It is based on the view that climate adaptation measures should be an integral part of the process and not an add-on or a separate component. The structure adopted is that used by the Integrative Methodological Framework for coastal, river basin and aquifer management and by the Guidelines for the preparation of National ICZM strategies [1] (henceforth referred to as the IMF document), which identify the following key steps:

I. ESTABLISHMENT: Aim & Objectives
- Establishing coordination mechanisms
- Defining territorial scope
- Defining governance context
- Scoping
- Engaging Stakeholders
- Proposing the vision
- Decision on Strategic Environmental Assessment

II. ANALYSIS & FUTURES: Aim and Objectives
- Building the evidence
- Identifying futures

III. SETTING THE VISION: Aim & Objectives
- Building consensus
- Setting the direction
- Measuring success

IV. DESIGNING THE FUTURE: Aim & Objectives
- Formulating ICZM Strategies, Plans or Programmes
- Establishing Management structure
- Embedding

V. REALISING THE VISION: Aims and Objectives
- Implementing
- Investment and Infrastructure
- Acting
- Monitoring and Review

The IMF document notes that actions related to climate change need to be integrated in the respective frameworks. The present report goes through each of the stages listed above and indicates how the climate change dimension should be addressed, both at the strategy stage as well as in the preparation of the coastal plans at both the national and local levels. In both cases the context is the Mediterranean.

[1] The ICZM process has been presented in the three related documents prepared by the Priority Actions Programme: "Towards Converging Management Approaches for Mediterranean Coastal Zones: An Integrated Methodological Framework for coastal, river basin and aquifer management", April, 2012; "Guidelines for the preparation of National ICZM Strategies required by the Integrated Coastal Zone Management (ICZM) Protocol for the Mediterranean", June, 2011; and "ICZM Process" (PEGASO Platform).

Five stages of the ICZM process

1. Establishment

This is an important stage of the ICZM process. The aim is to set out an operational foundation for the subsequent preparation of the strategy or plan and its implementation, to begin the process of understanding the challenges facing the area and the differing perceptions of those challenges, and to begin building a constituency of support for the strategy or plan.

Establishment starts with the initiation, which sets out the ICZM strategy and plans within the context of the Protocol on Integrated Coastal Zone Management in the Mediterranean. The assumption is that both the strategy and the plans should be, inter alia, **comprehensive** - covering all issues crucial for coastal environment and its protection in the 21st century – and i**ntegrated** - ensuring institutional co-ordination, co-ordination of national, regional and local authorities, involvement of non-governmental organisations and other competent organisations, as well as the integrity of sea and land areas. All partners should agree on the final status of the Plan at this Initiation stage, particularly where this Plan is being used to meet the statutory purposes of one or more sectors.

As far a climate change is concerned, the main concern is to ensure that there is institutional coordination with bodies responsible for climate adaptation and mitigation strategies and plans. All countries have an obligation to produce a communication to the United National Framework Convention on Climate Change, detailing greenhouse gas emissions (GHGs), as well as vulnerability assessments and some actions to adapt to climatic changes[2]. Thus from the outset any actions on climate change under the ICZM should be coordinated with the National Communication Office of the country. In addition, local authorities in many coastal zones are already planning to introduce measures to respond to some of the expected impacts of climate change. It is essential that these authorities and their plans and procedures be brought into the ICZM process at this initiation stage.

These climate issues should be noted in the strategy and the national plan for ICZM should ensure that they conditions are met. This plan should identify the key partners that each local plan needs to coordinate its actions with.

The scoping report, which is the output of this stage when preparing the plan, should cover the following areas: coordination mechanisms, boundary definition, governance context, drivers and pressures, key problems and issues, risk identification, stakeholder analysis, vision proposal, decision on Strategic Environmental Assessment and the work plan.

As for the work plan, A GANTT chart is a key tool, which provides: the plan process stages expressed as work packages, the major outputs in the form of reports and plans, key meeting, event dates, critical milestones centred on key meetings or events, key financial reporting requirements and the subsequent schedule of implementation.

In the next chapters individual steps within the Establishment Stage are considered in turn from the viewpoint of climate change.

[2] For details see: http://unfccc.int/national_reports/items/1408.php. Annex One countries (i.e. those that have a target reduction of GHGs under the Kyoto Protocol) also have to provide information on polices and measures that have been introduced.

1.1.Establishing coordination mechanisms

The IMF document identified three groups that constitute the governance structure for the ICZM: the steering group, the technical group and the consultative group. As far as climate change is concerned, its mainstreaming requires the following:

a. At least one representative from national government or the higher-level competent local administration(s) should have familiarity with climate issues, possibly because s/he is involved in one of the other bodies dealing with this topic.
b. The technical group needs at least one person with working knowledge of adaptation to climate change
c. The consultative group should include someone from the National Communication Office as well as representative from all sectors where climate issues have been assessed as being important at stage 1.4 Scoping

The governance structure is decided during the preparation of the national ICZM strategy and implemented in drawing up the national and local plans.

1.2.Defining territorial scope

Climatic changes will have impacts on areas that do not respect the boundaries of a coastal zone as defined in the ICZM. Sea level rise, for example may well affect areas outside the defined zone, and extreme events could impact on areas that extend beyond the defined boundaries, yet are part of an integrated area that includes the coastal zones.

As the IMF document states, it is necessary to be practical in defining the territorial scope of the areas to be covered under the plan. The 'competent' coastal units should be reconciled with the ecosystem, economic, social and political criteria as appropriate. This also applies to maritime zones, where the economic and social criteria should be applied, including coastal tourism, culture, agriculture and economic uses, but also includes patterns of transport and accessibility and urbanisation. In general it makes sense to retain the use of administrative boundaries where possible to maintain the integrity of stakeholder accountability and recognition, policy conformity and statistical information. A pragmatic compromise of ecosystem and administration is required.

The issue of boundary definitions is something to be brought up during the preparation of the national ICZM strategy, with, in our opinion, a pragmatic view as outlined above being the recommended approach. When the national plan is being prepared more details should be provided on how to deal with conflicts between administrative definitions and ecological, economic, social and political zones. Some resolution of these conflicts should be proposed in the National Plan. The local plans should then work with the agreed boundary definitions.

1.3.Defining governance context

As noted at the outset, the institutional context for climate change planning is already well established. In addition to the National Communication Office, and local and regional governments that are considering actions to adapt to climate change, several line ministries and departments have some involvement. These include:

- Ministry of Agriculture, for possible impacts in terms of crop yields

- Ministry of Environment, especially the Department dealing with water management and ecosystem health
- Ministry of Health, dealing with consequences of heat waves, vector and water borne diseases and increased risks of food contamination with higher temperatures
- Departments responsible for land classification (local and central).
- Ministry of Tourism

In addition one must not forget that the private sector is actively engaged in the coastal areas. Individuals and enterprises with significant investments will be well aware of the increased climate risks and will be planning to take some measures. These measures, however, will depend very much on what policies the government is putting in place and there is a strong inter-linkage between actions by the two sets of actors. It is critical that the ICZM be aware of the private sector's plans and provide it with the right framework and incentives so it can make a cost effective contribution to adapting to climate change.

The actions needed to address climate change will involve all these and many of them they will be giving some thought to developing policies to address the problems that are likely to arise. The ICZM needs to liaise with all of them to understand their positions and, ideally, play the role of coordinating their efforts for the effective management of the coastal zones. This can only be done if the ICZM has buy in at the highest level and recognition for its capacity to play this coordinating role.

The identification of the key institutional aspects of the ICZM should be done in the national ICZM strategy, including those relating to addressing climate change. In the national and local plans these linkages should be implemented, ensuring that all the important stakeholders are included in the process of preparing the plan.

1.4.Scoping

The *main problems* arising from climate change have been broadly identified under the following headings: damage to infrastructure from sea level rise and flooding, declines in agricultural yields, health risks from heat waves, risks to human life from extreme weather events, possible declines in tourism in the high season and possible increases in the shoulder seasons due to changes in climate, shortages of water due to changes in precipitation and possible saline contamination of groundwater, damages to ecosystems from changes in temperature and water availability.
These are the general set of problems that should be noted in the ICZM strategy but not all will apply in all coastal zones. It is at the stage of preparing the ICZM local coastal plans that the ones most relevant to the respective areas need to be identified.

The main drivers and pressures from climate change include the following: sea level rise, changes in precipitation (causing declines in water availability in some areas and during some seasons and causing floods in other areas and other seasons), increased frequency of extreme events (hurricanes, floods etc., heat waves) and possible increases in risks of vector and water borne diseases. At this stage an identification of these pressures, and an idea of where and when they are likely to be most serious, is required. As noted in the IMF document, the pressures will depend, among other things, on future plans for land use, which is a key determinant of the impacts that result from the climate-related factors just identified. The climate drivers will also depend on policies for water and land management that are in place or likely to be introduced.

The national ICZM strategy should note the important climatic drivers and pressures. It is at the national plan stage that national level data will be collected and at the local plan stage that further relevant data will be assembles. There are data sources that provide information at some degree of spatial disaggregation (see the websites listed at the end of this report). For further information on the likely pressures, a downscaling exercise may be needed, but this can be undertaken, if required, at a later stage in the process.

The scoping stage, including also *risk identification*, is primarily a desk exercise in conjunction with key stakeholders and technical experts from relevant sectors. As noted in the IMF document risk vulnerability is conventionally categorised according to the:

- **Nature** of the risk and its consequence
- **Magnitude** of the possible adverse consequences from each risk
- **Probability** of occurrence of each risk

In the case of climate change, objective probabilities cannot be defined in most cases. However, broad probability categories based on modelling and expert judgment are available for some pressures and impacts. These define, for example, when an event such as an increase in temperature is 'likely' if the probability of it being exceeded is less than 50%; or unlikely if the probability of it being exceeded is less 10%. At this stage the exercise should see which of the key impacts identified in the previous stage have some probabilistic information. This is likely to be available for extreme events, sea level rise, temperature increase and possibly change in precipitation. Together with the data on key problems such information will help at the later stage when the analysis of options is carried out.

The nature of the risk identification and its relevance for the ICZM should be noted during the preparation of the national ICZM strategy. The collection of probabilistic data at the national level should be collected for the national ICZM plan and at the local level for the local plans. The last of these, however, may require some downscaling of the models that predict the impacts.

1.5.Engaging the stakeholders

Stakeholder participation at several stages of the strategy and plan preparation is essential. As far as climate change is concerned key groups need to be informed about the major climate changes in the area of interest, the likely consequences of these changes and the increased risks they represent. This can be done without providing too much technical detail. The groups who need to be involved will include local communities, government agencies, NGOs, business, media and opinion formers etc., providers of tourism services, private developers, and those engaged in agriculture and fisheries. Based on these consultations options for action will be drawn up.

The same groups need to be consulted once these options have been evaluated technically to get their feedback. The final plan will be based on a consensus that includes opinions from these key stakeholders.

As the IMF document recommends, a simple communication strategy should be produced during or shortly after the establishment stage outlining how these different participatory activities will be carried out and what other, wider, communications will be undertaken.

The national ICZM strategy will include the preparation of the broad communication strategy and identification of key stakeholders. The details of the communication strategy and groups or individuals to be invited will be spelt out in the national and local plans.

1.6.Proposing the vision

The vision is prepared at this stage with the objective of ensure the smooth running of the project and a common understanding of the time constraints, and to allocate resources efficiently over the plan period. There is not much special to add here about integrating climate change into the vision. It will give rise to specific actions and activities, which form part of the whole structure. Some of the analytical measures identified in may give rise to outsourcing studies that provide technical material which has to be integrated into the main planning framework. This may also be the case with some other components of the ICZM. All such subcontracts have to be seen as part of the overall input into the preparation of the plan and there has to be enough capacity within the core team to be able to understand the results of these studies and to use them in drawing up the main integrated coastal zone management plan.

1.7.Decision on Strategic Environmental Assessment

As defined in the IMF document, a strategic environmental assessment is: *" a systematic process for evaluating the environmental consequences of proposed policy, plan or programme initiatives in order to ensure that they are fully included and appropriately addressed at the earliest stage of decision-making, on a par with economic and social considerations."*[3]
A number of countries have a statutory requirement to carry out an SEA when a major project or policy change is being considered. The tool can be useful when there are actions being proposed across a number of sectors, or where actions in one sector are likely to have impacts across several sectors. It can also be useful when the time frames for different actions are different – for example some land use measures in the short term may conflict with climate adaptation objectives in the long term.

If a decision is taken to carry out an SEA for the whole ICZM, then this will include of course any policies and measures for the climate component. At the outset it has to be noted that the exercise is a complicated one: to examine a combination of policies across a range of sectors for their impacts on the environmental resources. It can only really be done at of the ICZM and will require considerable resources and time. At the end of the day it is a decision that the steering group has to take in the light of national policies concerning SEAs.

In any event, if a SEA is not done, some assessment of the cross effects of the different policies will be needed. Development programmes that expand land use in coastal areas have to be undertaken with the consequences for future climate costs in mind. Expansion of tourism that does not take account of the impacts of climate change on visitors or of changes in water availability on the water balance could result in failure. Hence such cross effects should be accounted for at the analytical stage, whether it is through a SEA or through other more *ad hoc* methods, which may prove easier to carry out.

The decision on an SEA has to be taken at the strategy stage. Its application will be within the national plan (it is unlikely that the local plans will have the resource to prepare an SEA).

3 Evaluating Socio Economic Development, SOURCEBOOK 2: Methods & Techniques. Strategic environmental impact assessment. EU Regional Policy, INFOREGIO, December 2009

2. Analysis and futures

2.1.Building the evidence

The aim of this stage is to establish an operational foundation for the subsequent preparation of the plan and its implementation. From a climate viewpoint the key tasks are to:

(a) Identify the main elements of climate variability and change in the short- (10-20 years), mid- (30-40 years), and long-term (60+ years) periods.
(b) The impacts of this variability on key sectors and the risks associated with them.

The work described below is part of the preparation of the plan, although the strategy should describes the broad structure of the climatic data that needs to be collected and analysed and the tools to be used for this purpose.

Table 1: Possible climate related Indicators that complement other indicators for the ICZM

		Climate related indicators for selected years					
		Popn. at flood risk	Popn. at heatwave risk	Property at risk	Water balance	Ecosystems under stress	Tourist Visitor Nos.
Broad Indicator	Sub Objectives						
A Health and Productive Economy	Maximising economic development	X		X	X		X
	Increase employment						X
	Foster diversification						X
A Healthy and Productive Environment	Minimize habitat destruction					X	X
	Reduce volume of all pollutants					X	X
Public Health and Safety	Protect human life and public and private property	X	X	X			
Social Cohesion	Maintain a sense of equity and social justice						

Note: Each indicator will need further clarification refinement before it can be estimated.

Elements of Climate Variability and Change
Increases in average annual temperature at a Mediterranean Basin scale are likely to be slightly higher than at a world level (Hallegatte et al., 2007; Van Grunderbeeck and Tourre, 2008). This increase is estimated at approximately between 2°C and 6.5°C by the end of the century (compared with a global mean increase between 1.1°C and 6.4°C). The probability of temperatures rising by between 3 and 4°C is estimated at 50%.

These and other broad estimates of climate impacts in the region are a strong indication of the magnitude of the impacts that need to be taken into account in any future ICZM plans. In doing, however, it is important to avoid duplication of effort and to draw on existing work that has been undertaken at the national, regional and global levels. The best point of departure is the National Communication by the country the UNFCC, which should provide at least national level estimates of the main impacts in terms of temperature increase, sea level rise,

precipitation and extreme events. By the very nature of the problem[4], such data cannot consist of point estimates, but must be provided in the form of ranges. Thus they will take a form that makes it appropriate to adopt a risk based assessment at future stages of the process. Box 1 provides a description of the kind of data available for a mature economy such as the United Kingdom. Tables 2 and 3 describe the data that is typically provided. Other countries may not have quite the same level of geographical detail; if the impacts are likely to be significant it may be worth asking a specialised agency such as the UK Met Office or the Danish Climate centre to customise projections for specific coastal regions. This is likely to involve some outlays, which may be recoverable from international institutions supporting the preparation of the programme.

Box1: Impacts data Available for Coastal Zones in the UK

Data are available for a range of future socio-economic scenarios and allowing for different probabilities of climatic outcomes. For example, in the UK the following kinds of data are available for 25x25km grids on a probabilistic basis. The 20 variables for which date are given are listed in Table 1. Projections are averaged for each of seven future overlapping 30 year time periods: 2010-2039; 2020-2049; 2030-2059; 2040-2069: 2050-2079; 2060-2089; 2070-2099. All changes are expressed relative to a modeled 30-yr baseline period of 1961-1990.

Some information is also available in probabilistic terms, which provides a **central estimate** (e.g. 50% probability of not being more than a given increase in temperature), and **very unlikely events** (e.g. a 10% probability of being less than a given increase in mean temperature value or more than a given increase in mean temperature). These are based on 3 emissions scenarios plus other uncertain parameters.
For marine areas the information available includes, as noted in Table 1, the sea level rise (with the probabilistic information as indicated above for mean temperature rise). In addition the marine projections include information on projected storm surges. The last gives the projected elevation of the projected high tide under different return levels (e.g. 50 year return levels). Figures are available with different confidence intervals.
A third piece of climate information that is projected is changes in offshore waves. This gives changes in winter mean wave height but uncertainties in this variable cannot be expressed in probabilistic terms.

Impacts of Climate Variability and Change
The data on climate variability and change is used to assess the impacts in the key sectors of interest and to assess the risks involved. In coastal zones the key sectors are likely to be the following:

- Impacts on agriculture
- Coastal infrastructure (housing, public buildings, roads etc.)
- Impacts of extreme events (heat waves, floods etc.)
- Sea level rise
- Availability of freshwater
- Impacts on tourism
- Loss of ecosystem services through low river flows, flooding etc.
- Supply and demand for energy

[4] One important reason is that future emissions and concentrations of greenhouse gases are not known and depend on what policies are adopted to control them. But other sources of uncertainty also exist.

Table 2: Data Provided on a Downscaled Basis for Making a Risk Assessment

Variables Over Land Areas	**Units**	**Temporal Averaging**
Mean Temperature	ºC	Month, season, year
Mean daily maximum temperature	ºC	Month, season, year
Mean daily minimum temperature	ºC	Month, season, year
Warmest day of the season	ºC	Season
Coolest day of the season	ºC	Season
Warmest night of the season	ºC	Season
Coldest night of the season	ºC	Season
Precipitation rate	mm/day	Month, season, year
Wettest day of the season	mm/day	Season
Specific humidity	g/kg	Month, season, year
Relative humidity	%	Month, season, year
Total cloud	Fraction	Month, season, year
Net surface long wave flux[1]	W/m^{-2}	Month, season, year
Net surface short wave flux[2]	W/m^{-2}	Month, season, year
Total downward short wave flux[3]	W/m^{-2}	Month, season, year
Mean sea level pressure	hPa	Month, season, year
Variables Over Marine Areas		
Mean air temperature	ºC	Month, season, year
Precipitation Rate	Mm/day	Month, season, year
Total cloud	Fraction	Month, season, year
Mean sea level pressure	hPa	Month, season, year

Source: UK Climate Projections Briefing Report, 2009.

Note:

1. **Net surface long wave flux is a measure of the total amount of long wave radiation that flows through a unit area per unit time at the Earth's surface.**
2. **Net surface short wave flux is a measure of the total amount of shortwave radiation that flows through a unit area per unit time at the Earth's surface.**
3. **Total downward surface shortwave flux is a measure of the amount of shortwave radiation received by a unit area per unit time at the Earth's surface.**

Table 3: Typical Data Reported from the Climate Models
Projections for SW England in the 2050s

Climate Variable	Very likely to be *more than*	Central estimate	Very unlikely to be *more than*
Mean annual temperature	+1.7ºC	+2.7ºC	+4.0ºC
Mean summer temperature	+1.4ºC	+3.1ºC	+5.1ºC
Mean annual precipitation	-6%	0%	+6%
Mean summer precipitation	+8%	-20%	-45%
Mean winter precipitation	+3%	+18%	+41%
Relative sea level	+13cm	+27cm	+41cm

Note: Comparisons are relative to the 1960-1990 climate average
Source: UK Climate Projections Briefing Report, 2009.

The main sources of data linking climate variability and change to impacts by sector and the main assessed impacts for the Mediterranean region are summarised in Table 4.

Table 4: Main Impacts of Climate Variability and Change and Sources of Data

Impact	Estimate of Impact	Sources of Data
Agriculture	The average percentage change in crop yield for the Mediterranean North region in the PESETA study for the A2 2011-2040 scenario is -2% with a standard deviation of 13%. Some estimates also for individual countries but rarely for coastal zones.	The PESETA project (Ciscar, 2010) looked at the impacts of climate change on agricultural productivity of crops in different regions of Europe (Iglesias et al., 2009). Other key studies are Cline (2007, 2008), Mendelsohn and Schlesinger, 1999 which also look further forward. Issues of water availability need to be accounted for and carbon fertilization effect is uncertain. Some detailed studies also exist for individual countries, taking account on more factors.
Health	The potential health impacts of climate change include temperature related changes in mortality and morbidity, higher frequency of food-, water- and vector-borne diseases due to temperature increases as well as an increase in the incidence of other diseases such as tick-borne diseases.	The cCASHh project provides functions relating climate variability to health impacts. These can be applied with local variability data. See (Menne and Ebi, 2006), Kovats et al. (2006), (Ciscar, 2009). Dessai (2003). The PESETA study quantifies health impacts for all of the EU-27 countries for two climate change scenarios namely A2 2011-2040 and 2071-2100 (A2 and B2). (Ciscar, 2010).
Extreme Events	The PESETA study estimates the physical impacts of river floods in terms of the additional expected population affected to be about 49,000 people per year for Southern Europe for the A2, 3.9˚C temperature increase during 2071-2100 scenario from the baseline period (1961-1990). ABI (2005) note that a 20 percent increase in the frequency of top 5% of storms wind speed increases average annual total financial losses by 35% for Europe.	Estimates can be obtained from IPCC, 2007; Pollner et al., 2008; the Peseta study (Ciscar et al., 2010); Leckebusch and Ulbrich (2004) on wind speed changes.
Sea Level Rise SLR	Estimates are available from National Communications in most countries. Specific projections are complicated by local subsidence, especially in deltas and coastal cities.	IPCC, 2007; Hallegatte et al. 2007. The PESETA study (Ciscar, 2009) estimates of the number of people who are expected to be affected by coastal floods due to sea level rise are presented for different regions in Europe for different climate change scenarios.
Freshwater	The North Western tip of South East Europe will see an increase of rainfall by 5 percent in 2071-2100 relative to 1961-1990 (Pollner et al. 2008) However, the rest of the Adriatic coastline and Western Balkans region annual mean precipitation is expected to decrease by 10-20 percent over the same period (European Commission, 2007). Lehner et al. (2006) project a significant increase in drought in S and SE Europe and by the 2070s the drought that currently occurs 1:100 years could have a return period of less than 10 years.	Pollner et al. 2008; European Commission, 2007; Lehner et al. 2006;Lopez- Francos (ed.), 2010 provides a number of papers that look at climate change and drought in an economic context. IPCC, 2007, forecasts reductions by 2030 for different coasts. Specific impacts for different river basins are needed to make more accurate projections. These may be available from the National Communications to the UNFCCC or from other country specific research.
Tourism	Changes in temperature and precipitation will affect attractiveness of coastal areas for tourism. For a survey see Fisher, 2007.	Ciscar, 2010. Detailed estimates of changes in demand for visits are available for different regions.
Ecosystems	Low river flows will change supply of ecosystem services and some species will be at risk. Impacts are very location specific.	Country specific studies are needed to identify where ecosystems are at risk. See outputs from the CIRCE project and National Communications to the UNFCCC.

The main lessons to be learnt from this are the following:

(a) Many of the predictions are for a wider area than just a coastal zone, and certainly wider than the part of a coastal zone likely to be of interest to the drawing up of an ICZM strategy. Thus more downscaled estimates may well be needed, which will necessitate (a) downscaled climate projections and (b) response functions that link impacts to climate variability and change;

(c) The projections that are available have a high level of uncertainty. This is not fully reflected in the Table but the studies either give ranges of estimates or put in a lot of qualifications indicating why we have to be aware of the level of uncertainty. This makes taking a risk assessment approach important; the timing of the impacts is important. Several are long term (over 60 years) and therefore less relevant to the current plans for many but not all activities. Areas where such impacts are a matter of concern include investments in infrastructure, roads, land use planning and some energy supply systems. On the other hand long term agricultural and health projections are not so important for current plans. Cases where shorter term impacts are important include water, flood protection, tourism and agriculture.

(d) The table refers to impacts at the sector level but what matters for policy purposes is often the number of people affected, or the damage to property, crops or other economic activities. This will require some further work on the part of the team drawing up the ICZM, but even in this case local studies on the 'downstream' consequences of the impacts may be available. A thorough literature research is recommended.

Risk Assessment

The data collected on the impacts should be presented in a form that can be fed into the drawing up of the policies and priorities in the ICZM. Given the high level of uncertainty the recommended approach is to provide a 'central' estimate of impacts, qualified with a 'low risk' figure and a 'high risk' figure. These estimates can take two forms: a monetary value of the damages or benefits and physical estimates. The former will require some further work, in which some of the physical losses shown in Table 4 can be converted into money values.

Again there is research on this; see for example, Ciscar, 2010 and more widely the results of the PESETA project and the more recent Climate Costs project[5]. The estimates can be presented as shown in Table 5.

Table 5: Risk and Damage Representation

Risk	Low Risk	Central Estimate	High Risk
Damages Monetary	€	€€	€€€
Damages Not Included in Monetary Total	P	PP	PPP

Monetary damage estimates can be made for coastal and other infrastructure, health, some ecosystem services, changes in availability of freshwater, changes in tourism and changes in agriculture. Both monetary and physical impacts data will be relevant to the next stage of the ICZM.

[5] For Climate costs see: http://www.climatecost.cc/reportsandpublications.html. For the PESETA project see http://peseta.jrc.ec.europa.eu/results.html. In some cases it may be possible to give probabilities for the different outcomes. Where it can be provided it should, but this is not usually possible.

2.2.Identifying futures

Policies and priorities for action will be taken based on all three pillars of sustainable development: economic, environmental and social. The climate change factors to be discussed are of varying importance, depending on which sector or area of policy is under consideration. In this section we present those policy areas where the climatic factors have an important role. The range of policies and options will be identified in the strategy, along with possible pilot actions action sources of funding. The selection of the actual policies options will be done when drawing up the national and local plans (depending on whether the policies and options are local or national). At this stage the elaboration of the pilot actions and sources of funding will be elaborated.

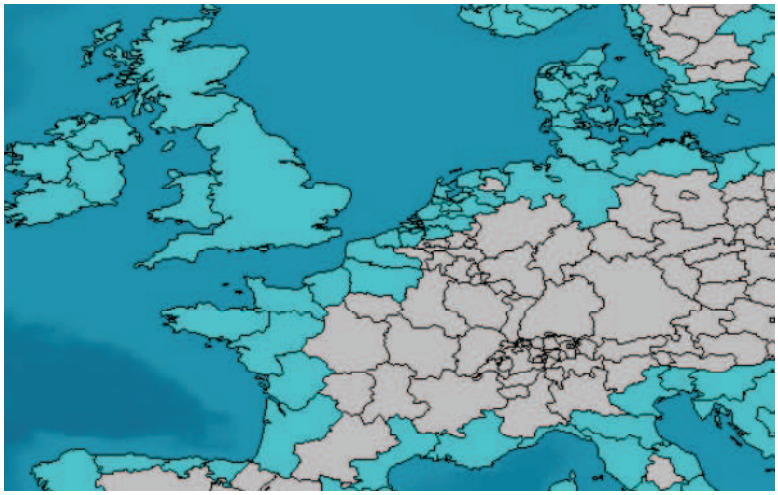
Agriculture

The impacts on agriculture are likely to be of wider interest and relevance than just to the coastal community. Adaptation measures undertaken will include research and development on crop varieties better suited to the new climate, improved irrigation where appropriate and extension and other support to farmers to assist them to adapt to climatic changes. In coastal zones where water is already at a premium appropriate adaptation plants may different from other areas and it is probably best that those responsible for the ICZM participate actively in national agricultural adaptation programmes as well as in the planning for water allocation and management.

Infrastructure

Sea level rise and changes in extreme events have a direct bearing on coastal infrastructure. Fortunately this is an area that is most developed in terms of tools for the assessment of appropriate responses. In particular the DIVA model has been used to estimate the required investment in coastal protection for different parts of the European coastline (Richards and Nicholls, 2009). The model looks at the direct impacts on erosion, (ii) increased flood risk and inundation, (iii) coastal wetland loss and change, and (iv) salinisation. It estimates the best responses on the basis of their costs and benefits. The responses considered include flood defences and beach nourishment but not all the softer options such as insurance. The model has been applied to most of the European coastline, including the Mediterranean, but not to the Mediterranean countries of North Africa, the Middle East and parts of the Balkans. Figure 1 gives the coasts that have been assessed.

Figure 1: Coasts Covered under the DIVA Model



Probably the most effective action would be to run the DIVA model for the other regions of the Mediterranean. This could be done singly by country or as part of an internationally supported study for all countries. In the absence of that, a single country could undertake an assessment itself, based on the same data that is used in DIVA, namely: projections of SLR based on different scenarios, ranges of impacts derived from the scenarios and costs of different interventions for different stretches of the coastline.

A factor not considered by the DIVA model is changes land use planning, as it assumes current practices will be maintained in the future. Yet an important tool of adaptation is precisely to limit land use in areas likely to be inundated. This aspect can be built into the adaptation strategy by providing the DIVA model with data on populations in different locations in the future. Funding for the application of DIVA may be available from global funds.

Health

As with agriculture, this is a wider issue than just for coastal zones, although the latter could be specially impacted if there is an increase in vector borne diseases. Impacts of climate on health through contaminated food and water will require stricter controls on vendors of products to the public. The ICZM needs to review its regulations and look at ways of improving health safety where required.

Water

Adaptation to changes in water supply will take the form of reductions in demand (measures that promote more efficient use, increases in water charges) as well as increases in storage and available supply. The latter could involve building of reservoirs, increasing capacity to manage runoff, plans for water allocation in periods of drought and even the transfer of water from surplus to deficit areas. There is also the option of building desalinisation facilities to meet water deficits. In coastal areas all of these could be relevant and need to be considered in the context of the ICZM, including the demands for water created by any plans to increase activities such as tourism.

Extreme Events

Increased risks of flooding and damages from heavy rains, winds etc., should have been identified in the stage 2.1 Building the evidence. Appropriate actions will include land use changes, improved flood and hurricane protection, as well as better insurance to provide coverage against damages. Many of these actions will also be considered at the national level, so plans should be drawn up in collaboration with the national authorities. Current thinking on this issue for coastal zones in developing countries is summarized in the Box 2 below. (Yves Henocque, 2011). It is worth nothing that as a response to the Cairo overarching principle, the coastal setback zones stipulated under Article 8-2 of the Mediterranean ICZM Protocol is part of the “broader goal of preventing natural risks and adapting to climate change, and is a major tool to achieve this goal”.

Box: Extreme Events and Climate Change in Coastal Zones

In the aftermath of the 2004 tsunami in the Indian Ocean, UNEP/GPA (Global Programme of Action for the Protection of the Marine Environment from Land-based Activities) convened a meeting in February 2005 in Cairo (Egypt) to discuss post-tsunami reconstruction and coastal zone rehabilitation and management in affected countries. The meeting adopted 12 guiding principles which were initially drafted by integrated coastal management practitioners and, to a large extent, encapsulate the approaches that seek to reduce coastal areas vulnerability to both man-made and natural hazards. In the end, these principles were endorsed by senior government officials from tsunami-affected countries, representatives from UNEP Regional Seas Programmes, and other UN agencies including FAO and IOC-UNESCO, as well as by international institutions such as IUCN, the World Bank and the WWF.

The 12 principles are:

1. Overarching principle: Reduce the vulnerability of coastal communities to natural hazards by establishing a regional early warning system, applying construction setbacks, greenbelts and other no-build areas in each nation, founded on a scientifically mapped “reference line”.
2. Promote early resettlement with provision for safe housing; debris clearance; potable water; sanitation and drainage services; and access to sustainable livelihood options.
3. Enhance the ability of the natural system to act as a “bioshield” to protect people and their livelihoods by conserving, managing and restoring wetlands, mangroves, spawning areas, seagrass beds and coral reefs; and by seeking alternative sustainable sources of building materials, with the aim of keeping coastal sand, coral, mangroves and rock in place.
4. Promote design that is cost-effective, appropriate and consistent with best practice and placement of infrastructure away from hazard and resource areas, favouring innovative and soft engineering solutions to coastal erosion control.
5. Respect traditional public access and uses of the shoreline, and protect religious and cultural sites.
6. Adopt ecosystem-based management measures; promote sustainable fisheries management in over-fished areas, and encourage low-impact aquaculture.
7. Promote sustainable tourism that respects setback lines and carrying capacity, benefits local communities and applies adequate management practices.
8. Secure commitments from governments and international organizations to abide to these *Principles* and build on and strengthen existing institutional arrangements where possible.
9. Ensure public participation through capacity building and the effective utilization of all means of communication to achieve outcomes that meet the needs and realities of each situation.
10. Make full use of tools such as strategic environmental assessment, spatial planning and environmental impact assessment, to identify tradeoffs and options for a sustainable future.
11. Develop mechanisms and tools to monitor and periodically communicate the outcomes of the reconstruction through indicators that reflect socio-economic change and ecosystem health.
12. Widely disseminate good practices and lessons learnt as they emerge

Tourism

For most coastal zones tourism is a key sector and the impacts of climate change on visitor numbers is critical information in the planning and management of the areas. Studies have now been conducted on this topic; for a useful survey of the literature see Fischer, 2007. The studies provide estimates of changes in numbers under different scenarios. For the Mediterranean the summary appears to be that the region will be too hot during summer, but the climatic conditions will improve during spring and autumn. Considering the improving summer temperatures in northern Europe, it is likely that the Mediterranean and its related tourism industry will encounter a decrease (dramatic decrease in Spain) in international tourist arrivals in summer and an increase during the shoulder periods (spring and autumn), especially in Spain, Greece and Turkey, and the winter season will become more attractive in North Africa. More detailed figures are available in the references cited in this survey article.

In terms of planning the data will determine the nature of the facilities offered as well as the volumes of visitors that can be expected. It will be a direct input into strategies for the kind of developments that are appropriate for each coastal zone.

Ecosystems

As noted, the impacts on ecosystems are very location specific. Studies under the CIRCE project identify low flows in rivers as an important impact, but there are also expected consequences on marine systems and fisheries. This is an area where those responsible for the ICZM should undertake a local assessment, drawing of course on the existing literature. Information collected at the analysis stage will influence the measures that need to be introduced. Some downscaling of impact assessment using models will probably be required ad funding for this may be available from global funds[6]. For rivers, low flow alleviation may be required to avoid loss of recreation services as well as risks of species. For marine areas, protection of new areas may be advisable and some measures may be needed to protect fisheries.

[6] For the choice of downscaling methods for this and other impacts see Sunyer et al. 2011.

3. Setting the vision

The aim of this stage is to engage the stakeholders in setting the priorities and agreeing on the key policies and measures that should be considered in the analysis stage.

3.1. Building consensus

The point of departure for this stage is the scoping report, which was prepared at the establishment stage and which identified the drivers and pressures and risks associated with the different areas of concern. This report is discussed with stakeholders and amended in the light of their reactions. In addition the stakeholder consultations are used to determine the priorities.
In the area of climate change priorities will have to drawn from a range of possible actions. These can be classified as follows:

Low regret or No-regrets measures: These are measures that can be introduced now to adapt to climate change, incurring no or little cost and generating a range of benefits. Examples include improvement in efficiency of water use, development of early warning systems that inform affected parties of extreme weather events, improved monitoring of climate data to better predict impacts under higher temperatures and changes in rainfall patterns. Also included in this category are measures to address the "adaptation deficit"[7]. An adaptation deficit arises when the current infrastructure is inadequate to cope with the present climatic variations (e.g. present flood defences are inadequate to cope with present flooding). Action to correct this situation can possibly be justified even without reference to future climate change (although it may still not be the top priority).

Action Vs Postponement: The literature on adaptation notes the benefits in some cases of postponing decisions on, for example, the height of a sea defence, until more information is available on the likely risks. This can be done through an analytical method known as Real Options Analysis[8].

Hard vs Soft Options: Too often adaptation to climate change is thought of in terms of engineering solutions. Yet these may not be the most effective and certainly not the least costly. Examples are restoration of wetlands which can be less costly and as effective in protecting some coastal areas and sea walls; or demand management measures for water which can be less costly then building additional reservoirs. These soft measures are often ignored because they involve policy changes requiring administrative coordination across different departments.

Long term vs Short term: many climate impacts are relatively long term, involving actions now to protect coastal areas and their inhabitants ten or more years down the line. These impacts, however, can be exacerbated by short to medium term measures introduced for other reasons (e.g. economic expansion and growth). For example, allowing settlement in an area that may be more prone to flooding may yield benefits now but will impose heavy costs later.

The different options should be laid out for each of the areas where some action is required and the pros and cons of each discussed with stakeholders. The aim at this stage is not to

[7] For further discussion on the adaptation deficit see Parry et al. (2009).
[8] For an example of Real Options analysis see the assessment for the Thames defences, summarised in Ranger et al. (2010).

make a final selection but to indicate broad priorities from which sets of options can be drawn and evaluated in Stage 4. Designing the future.

The national ICZM strategy should describe how the key problems will be analysed and how priorities will be set. For climate change it should note some of the choices that are open to the policy makers (as outlined above). It will be at the stage of preparing the national and local plans that the options will be elaborated further and priorities among them determined.

3.2.Setting the direction

The vision statement, which is the aim of this sub-section, is a general statement that defines the broad priorities. As the Main Guideline report notes, the objectives that arise from the vision statement can be complex, consisting of High Level Objectives (or Goals) and clusters of Sub-Objectives. Additionally some objectives will be predetermined in existing international, national and sub-national policies, such as 'Horizon 20-20', the Water Framework Directive and other water quality standards.

On the climate front a clear statement is needed of the importance given to adaptation to climate change as a high level objective. This can be followed by a list of the areas where action is seen as required, and the cross sectoral priorities (e.g. adaptation to climate versus short term development imperatives).

The vision statement has to be made at the strategy stage and carried over to the Plans (both national and local).

3.3.Measuring success

The IMF document sets out a fairly detailed description of the indicators that will track whether the Plan's interventions are achieving their intended objectives. Consequently they need to be aligned with these objectives and, more precisely, they have to be linked to the output or outcome being measured.

The structure that is offered in these Guidelines proposes three kinds of indicators: S**ustainability Indicators** that seek to show how the Plan's purpose is realised; **Impact Indicators that seek to** measure how well the Plan's outputs are being achieved; and **Performance Indicators that** measure how well the project activities are being implemented. In addition a distinction is made between Headline Indicators that provide information to the general public and specific indicators that are designed to assist in the technical monitoring of the Plan. An indicator matrix is offered, which provides a link between the broad objectives (see Section 2.1) and possible indicators that inform us of progress regarding these objectives.

From the climate change perspective the broad objectives of relevance are likely to be sustainable development of the region; protection of human life and natural and physical capital in the face of climate change. Each of these is likely to be affected by climate change. The problem with developing indicators in this context is that the relevant threat from climate change is in the future and an assessment has to be made of the magnitude, given plans for development etc. **Hence the relevant climate indicators will need considerable analytical to be estimated.** This can be done and will require regular monitoring over the life of the ICZM, but it is worth the effort as it keeps this dimension of the problem in the public's mind.

Attached is a list of possible climate indicators, using the same broad categories of indicators that are provided in the IMF document (Table 1).

The structure of the indicators is laid out in the strategy, with the criteria they should fulfil. The selection of the specific indicators is done during the preparation of the national plan. Ideally the same indicators should be sued for local plans to allow for some comparability, but exceptionally a local plan may include some other indicators, or leave out ones that do not apply at all.

4. Designing the future

4.1.Formulating ICZM strategies, Plans and Programmes

At this stage, plans, strategies and programmes will now have specific climate related elements. These will include measures related to sea level rise, such as sea defences, changes in land use regulations etc., as well as measures derived in the areas of agriculture, health, water and ecosystems, mostly in conjunction with national policies in these areas. Specific to climate change will be issues relating to funding. External funds should be available from the Global Adaptation Fund, which is being set up and which will set out some guidelines for the documentation that needs to be provided for projects that are requesting funding. Much of the information recommended here to be collected as part of the ICZM should be of great value in preparing such proposals, although further data may be required.

As the term indicates, this is an activity for the plan stage, although the strategy will have identified the preferred “trajectory”, along with the elements that have to be included within it.

4.2.Establishing Management structure

This stage consist in setting up the inter-sectoral management, facilitation and consultation structures for the long-term, post-plan period, ultimately having impact on the coastal governance performance. Solutions developed since the Stage 1.3. Defining the governance context through the strategy or plan formulation now should be reconsidered in a view of long-term, permanent solutions for the integration over sectors.

4.3.Embedding

At this stage the indicators identified in Section 3.3 have to be estimated and the first set provided. Then as the plan is implemented, changes in the indicators need to be estimated as well. This need not be done too frequently, as the indicators will not change that easily. For the climate indicators, calculations at 5 year intervals should be acceptable.

The estimation of the indicators is carried out as part of the implementation of the plan.

5. Realising the vision

5.1.Implementing

ICZM involves a wide range of instruments to implement the strategy. A central pillar is land use regulation and the limitation on the use of certain areas on environmental grounds. But also important is adoption of standards for building, energy and other sectors that provide goods and services. In addition it is increasing important to use fiscal instruments to promote certain actions that are considered desirable. The use of such instruments serves a number of purposes. First, it is more flexible than direct physical controls for the person whose actions are being affected. Second, if the instrument takes the form of a charge it allows the authorities to raise much needed financial resources that can be put to use to provide the essential public goods. Third, as long as the charge is in place it provides a continued incentive towards greater efficiency, which is not the case when only physical controls that have to be complied with.

Areas where fiscal instruments could be used, specifically to address some of the climate change impacts that have been discussed are:

- Transferable development rights, where an individual whose rights have been taken away in one location can have them reallocated in another location. These make the introduction of new regulations easier and allow a market in such rights to develop (Markandya et al, 2008).

- The use of charges that better reflect the cost of services, particularly related to water.

- Development of insurance markets to provide cover against risks of flooding etc. To the extent that they bear at least part of the costs this encourages the private sector and individuals to modify their behaviour and not take excessive risks, as they tend to do when all damage costs are covered through public funds.

- Charges on tourists to cover the additional burden of the public services they demand, as a source of finance for improved environmental protection.

The range of instruments to be used in the ICZM should be identified in the strategy, along with some priorities indicating which ones are preferred from a national viewpoint. The actual selection, however, will be made at the plan stage, national or local as appropriate.

5.2.Investment and Infrastructure

Some of a climate related actions will involve investment in protective infrastructure, such as sea walls, dykes and desalinisation facilities. As noted, the ICZM should not give priority to such solutions, but look in the first instance for lower cost options which involve early warning systems, use of fiscal and other incentives etc. However, some investments will be needed, and some investments that are part of the development plan will need to be modified in the light of climate change. Examples of these include measures in buildings to withstand increased impacts from extreme weather events, transport systems that have to take account of increased risks of subsidence etc. Some of these investments will be in the public sector and some will be in the private sector.

The ICZM should provide guidance to the private sector on how to address the additional climate risks. There are various sources for this, such as the World Bank (see e.g. World Bank, 1997). In the case of public sector investments, a key aspect is funding. Some funds may be available from the Global Adaptation Fund or other international sources. These will require careful and detailed assessment of the costs and benefits of the outlays. Some guidance on how to prepare these has been provided in this report, but further examples and information can be found in Nicholls, 2007, Ranger et al. 2010, UKCIP, 2003.

The issues discussed above should be noted in the strategy, which should identify possible sources of funding and the need for support for capacity building. The national and local plans would then elaborate some of these requirements as they apply in their respective contexts.

5.3.Acting

Lessons learnt from the early attempts should be shared across the ICZM community and used to improve future plans. This applies specially in the climate area, where there is not much experience with the implementation of actual policies and measures and lessons are being learnt all the time.

A dissemination and replication strategy is defined at the strategy stage and elaborated in the national plan.

5.4.Monitoring and Review

It is critical that the planners continue to track information on climate impacts as new data are coming out all the time. These may affect the proposed adaptation actions, which should be revisited periodically, as new knowledge is gained.

In addition, as for all aspects of ICZM it is important to monitor how successful the actions that have been taken have been in achieving the goals they were set for, and what have been the related impacts of introducing the relevant measures. There is nothing specific from climate change here, except of course that that the climate related actions are subject to the same monitoring and evaluation.

These critical steps in the implementation of the plans are noted as described in the strategy.

References

(Websites)
Major European and other projects on climate change impacts and adaptation can best be accessed from their websites. The main ones of relevance here are:

http://www.circeproject.eu/
The CIRCE Integrated Project, funded under the European Commission's Sixth Framework Programme, aims to reach this objective, highlighting impacts and possible adaptation actions of the climate change in the Mediterranean region that includes Europe, North Africa and Middle East.

http://www.climatecost.cc/reportsandpublications.html
Using detailed disaggregated, bottom-up approaches, combined with top-down aggregated analysis, this project aims to provide a comprehensive and consistent analysis of the full costs of climate change. It covers the member states of the EU as well as India and China.

http://peseta.jrc.ec.europa.eu/results.html
The objective of the PESETA project (Projection of Economic impacts of climate change in Sectors of the European Union based on bottom-up Analysis) is to make a multi-sectoral assessment of the impacts of climate change in Europe for the 2011-2040 and 2071-2100 time horizons.

http://ec.europa.eu/research/environment/pdf/env_health_projects/climate_change/cl-ccashh.pdf
The cCASHh project is a combination of impact and adaptation assessment for four climate-related health outcomes: *health effects of heat and cold; *health effects of extreme weather events; *infectious diseases transmitted by insects and ticks, e.g. tick-borne encephalitis, malaria (vector borne and rodent borne diseases);

Fischer, J. (2007) Current Issues in the Interdisciplinary Research Field of Climate Change and Tourism: A Meta-Study of Articles from 2006 and 2007. Tourism Vision. Accessible at http://tourism-climate.de/documents/Julian_Fischer_CC-Tourism_14-02-2008.pdf

Hallegatte S, Somot S & Nassopoulos H. (2007). *Région méditerranéenne et changement climatique: une nécessaire anticipation*. Expert report IPEMed.

Henocque, Y. (2011). "Analysis and Lessons Learned from National Coastal Management Strategies around the World", PAP/RAC Split.

López-Francos, A. (ed.) (2010), Options Méditerranéennes: Economics of Drought and Drought Preparedness in a Climate Change Context, CIHEAM, Zaragoza.

Markandya, A., S. Arnold, M. Cassinelli and T. Taylor (2008) "Protecting Coastal Zones In The Mediterranean: An Economic and Regulatory Analysis", Journal of Coastal Conservation, 12:145-159.

Nicholls, R. J. (2007) *Adaptation Options for Coastal Areas and Infrastructure: An Analysis for 2030*, Report to the UNFCC, Bonn.

Parry, M. Et al. (2009) "Assessing the Costs of Adaptation to Climate Change: A Review of the UNFCCC and Other Recent Estimates", International Institute for Environment and Development and Grantham Institute for Climate Change, London.

Ranger, N., Millner, A., Dietz, S., Fankhauser, S., Lopez, A. and Ruta, G. (2010) Adaptation in the UK: A Decision-Making Process, Policy Brief September 2010, Grantham Research Institute on Climate Change and the Environment & Centre for Climate Change Economics and Policy.

Richards, J. and R. Nicholls (2011) "Impacts of climate change in coastal systems in Europe. PESETA-Coastal Systems study. European Commission, Joint Research Centre, Institute for Prospective Technological Studies, Seville

Sunyer, M. A., Madsen, H., Ang, P. H. (2011), A Comparison of Different Regional Climate Models and Statistical Downscaling Methods for Extreme Rainfall Estimation Under Climate Change, Atm. Res., In Press.

UKCIP (2003) *Climate Adaptation: Risk, Uncertainty and Decision-making* (edited by R. Willows and R. Connell), UKCIP Technical Report, Oxford.

UNEP/MAP/PAP, (2008). Protocol on Integrated Coastal Zone Management in the Mediterranean. Priority Actions Programme, Split.

Van Grunderbeeck P & Tourre YM. (2008). Bassin méditerranéen: changement climatique et impacts au cours du XXIème siècle. In: Thibault HL & Quéfélec S. (eds.) *Changement climatique et énergie en Méditerranée*, **1:**1, 1.3-1.69.

World Bank, (1997). *Guidelines for Climate Change Global Overlays.* Global Environment Division, paper no 047.

TERMS OF REFERENCE

STEERING COMMITTE FOR BUNA/BOJANA TRANSBOUNDARY INTEGRATED MANAGEMENT PLAN

The aim of this document is to define the organisational structure, purpose, roles and process of the operational scheme of the **Steering Committee for Buna/Bojana Transboundary Integrated Management Plan**.

Background

The UNEP/MAP GEF Strategic Partnership for the Mediterranean Large Marine Ecosystem (**MedPartnership**) is a collective effort of countries sharing the Mediterranean Sea and leading organisations (regional, international, nongovernmental, etc.) towards the protection of the marine and coastal environment of the Mediterranean. The MedPartnership aims to enable a co-ordinated and strategic approach to catalyze the policy, legal and institutional reforms, and the necessary investments to reverse the degradation trends affecting the Mediterranean unique large marine ecosystem including its coastal habitats and biodiversity. It is being led by **UNEP/MAP** and the **World Bank** and is financially supported by the Global Environment Facility (**GEF**), and other donors, including the EU and all participating countries.

The activities implemented within component 1[1]aim at promoting integrated approaches throughout the Mediterranean for the reduction of pollution and preservation of biodiversity. This will be achieved through an appropriate management of the coastal and river environments and coastal aquifers. Partners in this component - **PAP/RAC**, **GWP-Med** and **UNESCO-IHP** are responsible for the implementation of the following activities, respectively: Integrated Coastal Zone Management (ICZM), Integrated Water Resources Management (IWRM) and Coastal Aquifer Management which are the overarching policy frameworks for all activities within this component. The activities focus on national and regional policy, legislation and institutional reforms taking fully into account the recent entry into force of the ICZM Protocol of the Barcelona Convention as well as the relevant EU legislation (WFD, Marine Strategy, etc.).

In order to demonstrate the implementation of such an integrated approach, the Buna/Bojana Transboundary (Albania/Montenegro) Coastal and Water Management Plan (aka “the Plan”) will be developed. In order to supervise the process of the Plan development, a Steering Group for the Buna/Bojana Transboundary Coastal and Water Management Plan will be nominated and put into operation.

Roles and Responsibilities

The prime purpose of the Steering Committee is to provide guidance and support in the preparation of the Buna/Bojana Coastal and Water Management Plan. Under the guidance of the Project Management Unit (PMU) and with the support of the Management Group (MG), the Steering Committee will:

- Support and facilitate development and implementation of the work plan to meet the overall aims of the GEF Project and to be in accordance with the local realities in each country.
- Provide inputs for drafting and revision of the relevant Plan documents, including analysis documents as well as documents for managing, communicating and promoting the Plan itself.

[1] Integrated approaches for the implementation of the SAPs and NAPs: ICZM, IWRM and management of coastal aquifers

- Review and make recommendations on the work plan as well as the draft documents/plans to be prepared through the Project.
- Promote and contribute to meaningful engagement of all relevant stakeholders.

Composition of the Steering Committee

The Committee will be formed of representatives of the national government, the high-level competent local administrations and the implementing institutions. As a result of the Joint Inception meeting of Albanian and Montenegrin authorities and partners (within the GEF LME project), the Steering Committee will be composed of a number of individuals equally representing the Albanian and Montenegrin parts, as follows:

- GEF (MedPartnership) FPs;
- Ministries (or sectors/agencies) for spatial planning;
- Ministries (or sectors) for water management;
- Ministries (or sectors) for management of the marine environment;
- Ministries (or sectors) for tourism;
- Local representatives (based on Plan boundaries).

The National Steering Committee members should be appointed by the Governments.

Selected stakeholders from the civil society will also be invited to participate.

In addition, representatives of implementing institutions (PAP/RAC and GWP-Med while UNESCO will be represented through PAP/RAC) will be present.

Working approach

The Steering Committee can be considered as a Forum for guiding and supporting the Plan development and implementation. In addition, it will be used as a platform for developing and sharing ideas, within sectors and countries, on managing the common issues. This will be achieved through meetings, identifying the needs for specific activities and planning joint actions.

It is expected that the Committee will actively support the Plan preparation by the end of GEF LME project (2013) through:

- Participation in at least one meeting per year;
- Participating in exchange of views and discussions held through e-mail and telephone;
- Attend relevant (regional) consultations, when needed.

It is estimated that Committee members will normally dedicate approximately 10 days to the working of the Committee per year.

The Chair of the Committee will be selected on a half-year basis based on a country rotation rule. In addition, the meetings may be organised based on a country rotation rule as well.

The meeting agenda and any discussion papers will be circulated electronically at least one week prior to the meeting, by PAP/RAC and GWP-Med which will both provide the Secretariat of the Committee. Minutes of the meeting as well as lists of attendees will be provided after each Committee meeting.

This TOR is part of MoUs signed by the institutions participating in the Steering Committee.

Rules of Procedure for the Institutional Coordination Structure and Framework for Social Participation of the CAMP Levante de Almeria Project

SUMMARY

This document includes the Rules of Procedure for the Institutional Coordination Structure and Framework for Social Participation of the CAMP Levante de Almeria Project, pursuant to Section 7 of the Protocol on Integrated Coastal Zone Management in the Mediterranean. The ICZM Protocol establishes institutional coordination as a key factor to its success. Furthermore, improving institutional coordination and stimulating the mechanisms for participation by civil society in the decision-making processes for integrated management also responds to the needs identified in the Feasibility Study.

CHAPTER I

Objective and Composition

Article 1: Objective

The Framework for Institutional Coordination and Social Participation is created to establish a mechanism for inter-administrative collaboration and public participation for the development and application of the ICZM Protocol within the framework of the Barcelona Convention on Integrated Coastal Zone Management in the Mediterranean.

Article 2: Composition

The Framework for Institutional Coordination and Social Participation is structured in accordance with the following bodies:

a) The Coastal Commission

b) The Coastal Council

c) The Coastal Forum, a platform for opinions by civil society on the progress made in the CAMP Levante de Almeria project through it corporate site.

CHAPTER II

The Coastal Commission

Section 1: Composition and Functions

Article 3: Composition

1. The Coastal Commission shall be composed of representatives from the public authorities with competence over coastal management in the area covered by the project. They are as follows:

a) The Municipalities of the CAMP area: Pulpí, Cuevas del Almanzora, Vera, Garrucha, Mojácar, Carboneras, Níjar and Almeria.

b) The Municipalities Association of Levante de Almeria.

c) The Provincial Council of Almeria.

d) Provincial delegations of the following departments of the Regional Government of Andalusia: Government, Agriculture and Fisheries; Culture; Economy, Innovation and Science; the Environment; Public Works and Housing; and Tourism, Trade and Sport.

e) General Government Public Administration: The Ministry of the Environment, Rural and Marine Affairs, represented by its central services and the Provincial Coastal Service in Almeria; the Port Authority of Almeria; and the Government Sub-Delegation.

This composition may be modified at the request of the Steering Committee or the Commission itself when deemed necessary for proper functioning.

2. The Commission shall be co-chaired by a Representative Chairman and a Technical Chairman. The Representative Chairman shall be appointed from among the members of the Commission, while the post of Technical Chairman shall be held by the General Project Coordinator for the CAMP Levante de Almeria Project. The post of Secretary of the Commission shall be held by the Coastal Technical Office established to develop the project. The Secretary shall attend the meetings with speaking rights but without vote.

3. The Representative Chairman shall have following duties:

a) Represent the Commission.

b) Chair the sessions of the Commission.

c) Endorse the contents of the minutes that have been finally approved by the Commission.

d) Ensure the execution of the resolutions adopted by the Commission.

4. The Technical Chairman shall have following duties:

a) Call the sessions and determine their agenda.

b) Require the presence of such experts with speaking rights but without vote at the meetings who may contribute towards a better analysis of the matters on the agenda.

c) Submit the studies and reports drawn up by Teams of Experts and the Coastal Council to the Commission, as well as any proposals for resolutions.

5. The duties of the Secretary shall be as follows:

a) Assist the Coastal Commission in the exercise of its functions.

b) Prepare the agenda on the instructions of the Technical Chairman and to call the sessions of the Commission by order of the Representative Chairman, both to its members and to any experts whose presence may be required.

c) Prepare budgetary and financial reports to be presented during the Coastal Commission Meetings.

d) Take minutes, sign them and maintain the minutes book in order; send the minutes to all the members of the Commission.

e) Issue certifications of resolutions, minutes and authorised copies of documents with the approval of the Representative Chairman.

6. Three representatives from the Coastal Council shall act as observers of the processes, with speaking rights but without vote. They shall come from the following sectors: production, scientific-technical and NGOs.

Article 4: Functions:

1. The Commission is created as a decision-making and executive body for the actions and measures needed to comply with the Protocol on Integrated Coastal Zone Management in the Mediterranean within the Barcelona Convention Framework. Its main duty will be to deliberate on the content of the proposals made by the Council, which in turn will pass on those made by the Coastal Forum. Thus it will act as a cooperation and consultation body with the different administrative levels involved in the

management of the CAMP Area, without prejudice to the exercise of their respective competences.

2. The Commission shall deal with the following matters:

a) The handling and resolution, based on mutual cooperation principle, of those matters of general scope or within its area of competence related to the Integrated Coastal Zone Management in the CAMP Area. To do so, it will analyse and evaluate the work and conclusions of the Council and the Groups of Experts and ensure that information is made available to its members.

b) The promotion of debate and public participation in the discussion of the proposals related to the objective defined in Article 0.

c) Promotion of collaboration agreements between the different public authorities.

d) Search for additional financial resources for post-project activities for CAMP Levante de Almeria.

e) Approval of the working guidelines and the working programme of CAMP Levante de Almeria.

Article 5: Objectives of the Coastal Commission

The objectives of the Coastal Commission shall be as follows:

a) Develop the structure, framework and procedures for Integrated Management of Coastal Areas in the region Levante de Almeria, so that these can be transferred to the rest of the country.

b) Create a framework for inter-institutional coordination and participation between the competent public authorities in the coastal management of the CAMP Area in order to establish action lines, develop agreements and promote cooperation in its activities.

c) Achieve sufficient political and social commitments to allow a successful development of the Protocol on Integrated Coastal Zone Management in the Mediterranean.

d) Increase the level of awareness within departments, ministries, regional departments, administrative bodies, municipalities and other actors involved with regard to Integrated Management of Coastal Areas and the need to extend it to the rest of the Spanish coastline.

Section 2: Rules for the operation of the Coastal Commission

Article 6:Frequency and location of meetings

1. The Coastal Commission shall meet at least once a year. It shall also meet on any occasion that may be considered necessary to comply with its functions, at the initiative of the Technical Chairman or of a majority of its members.

2. In addition to these, the Coastal Commission will be present at the Preliminary Workshop and the Final Presentation Conference, as well as other decision-making occasions.

3. The meetings of the Coastal Commission shall be held on a rotating basis in those Municipalities of the CAMP Area that have a sufficient capacity to host them, and at the proposal of the Municipalities themselves.

Article 7: Calling of the meetings

1. The calling of the meetings of the Coastal Commission shall be effected by its Representative President through the Secretary, with sufficient notice of at least 30 days. This call shall be accompanied by a proposal for an agenda and the documents that refer to the matters included in this proposal, including the reports on the rest of the CAMP Levante de Almeria activities, whether proposed by the Council or the Groups of Experts.

Article 8: Agenda

1. The provisional agenda shall be determined by its Technical Chairman and finally approved at the start of each meeting. Its content will reflect the proposal being considered with the call for the meeting in accordance with the progress in CAMP Levante de Almeria and the matters that as a result of such progress are proposed by the Commission or Council. The agenda will include a section dedicated to inform about the budgetary and financial situation of the Project.

2. Any matter that is not included on the provisional agenda may not be the object of deliberation or resolution, except if those members of the Commission present unanimously agree to include it on the agenda before the start of the session. The matters thus included shall be subject to the provisions covering the adoption of resolutions.

3. Unless agreed otherwise, the matters shall be dealt with in the order they appear on the agenda.

Article 9: Quorum of the Coastal Commission

For the Commission to be duly constituted for the purposes of holding the session, those present must include the representatives of the Ministry of the Environment, Rural and Marine Affairs and of the Department of the Environment of the Regional Government of Andalusia, and two thirds of its members at the first call and a simple majority at the second call.

Article 10: Resolutions of the Coastal Commission

1. The resolutions of the Coastal Commission shall preferably be adopted by broad consensus. In case that there's not possibility of consensus the agreements will need a simple majority.

Article 11: Minutes of the meetings

1. The Secretary shall take the minutes of each meeting of the Commission. After their approval in the following meeting, they shall be endorsed by the Representative Chairman on the date of their approval.

2. The minutes shall include the following elements.

a) A brief outline of the background events and previous resolutions adopted.

b) Place and date of the meeting.

c) Agenda.

d) Summary of the debate.

e) Decisions adopted.

f) Annex I: List of Participants.

g) Annex II: List of reference documents.

CHAPTER III

The Coastal Council

Section 3: Composition and Functions

Article 12: Composition

1. The Coastal Council is a consultative body composed of the following local actors:

a) 8 representatives from community associations. One from each municipality in the CAMP Area.

b) 1 person responsible for Agenda 21 at provincial level in Almeria.

c) 2 representatives of the trade unions. One from each trade union represented: U.G.T. and CC.OO.

d) 4 representatives of agricultural associations. One from each association represented: U.P.A., C.O.A.G., A.S.A.J.A. and F.A.E.C.A.

e) 1 representative of the consumers' association F.A.C.U.A.

f) 1 representative of the organic farmers' association Productores Ecológicos del Levante Almeriense

g) 1 representative of farmers adhered to integrated production (COPROHNIJAR)

h) 3 representatives of irrigation associations. One for each irrigation association represented: Almeria, Níjar and the Central Board of Users of Almanzora Valley, which includes the Cuevas del Almanzora and Pulpí.

i) 1 representative of the association for the disabled F.A.A.M.

j) 4 representatives of business associations. ASEMPAL (Almeria Province Enterprise Confederation) will appoint one representative from each of the following areas: tourism and hotels; fruit and vegetable production; industry; and ASEMPARNA (the Association of Businesses in the Nature Park).

k) 2 representatives from the Rural Development Group in the Levante region of Almeria.

l) 3 representatives, one from each of the following fishing associations: ASOPESCA (Fishermen's association of Almeria), the Fishermen's association of Carboneras and the Fishermen's association of Garrucha.

m) 2 representatives, one for each of the following traditional fishing associations: PESCARTES and the Association for the protection of artisanal fisheries and the minor arts of Levante region of Almeria.

n) 1 representative from the aquiculture sector.

o) 5 representatives, one from each of the following sports federations: Federación Andaluza de Vela (Andalusian Boating Federation), Federación Andaluza de Actividades Subacuáticas (Andalusian Sub-aquatic Activities Federation), Federación Andaluza de Pesca Deportiva

(Andalusian Game Fishing Federation), Federación Andaluza de Montaña (Andalusian Mountaineering Federation), Federación Andaluza de Caza (Andalusian Hunting Federation)

p) 5 representatives of the following NGOs: Grupo Ecologista del Mediterráneo (Ecologist Group of the Mediterranean), Salvemos Mojácar y el Levante Almeriense (Save Mojácar and the Levante región of Almería), Ecologistas en Acción (Ecologists in Action), Grupo Cóndor (Condor Group) and Asociación de Amigos del Parque Natural Cabo de Gata-Níjar (Friends of Cabo de Gata – Níjar Natural Park Association).

q) 1 representative from the University of Almeria.

r) 1 representative from volunteers' associations: ASVOAL (Volunteers' Association for Almería)

2. Depending on the subjects to be dealt with during the Coastal Council meetings, experts who are considered to be of interest will attend, together with technical experts from the competent Public Authorities represented in the Coastal Commission.

3. The Coastal Council shall be co-chaired by a Representative Chairman and a Technical Chairman. The Representative Chairman will be appointed from the members of the Council, while the post of Technical Chairman will be held by the General Project Coordinator for the CAMP Levante de Almeria project. The post of Secretary of the Council will be held by the Coastal Technical Office established to develop the project.

4. The Representative Chairman shall have following duties:

a) Represent the Coastal Council.

b) Chair the Council sessions.

c) Endorse the contents of the minutes that have been finally approved by the Council.

d) Ensure the execution of the resolutions adopted by the Council.

5. The Technical Chairman shall have following duties:

a) Agree the call to sessions and determine their agenda.

b) Require the presence of experts with speaking rights but without vote at the meetings who may contribute towards a better analysis of the subjects on the agenda.

c) Submit the studies and reports drawn up by teams of experts to the Council, as well as any proposals for resolutions.

6. The duties of the Secretary shall be as follows:

a) Attend the Coastal Council in exercise its functions.

b) Pass on the opinions/suggestions made by the Coastal Forum, in accordance with the agenda.

c) Prepare the agenda on the instructions from the Technical Chairman and issue a call by order of the Representative Chairman for the Council meetings, both to its members and any experts whose presence may be required.

d) Prepare budgetary and financial reports to be presented during the Coastal Council Meetings.

e) Take minutes, sign them and keep the minutes book in order. Send the minutes to all the members of the Council.

f) Issue certifications of resolutions, minutes and authorised copies of documents with the approval of the Representative Chairman.

Article 13: Functions of the Coastal Council

1. Participate in the Analysis of Systemic and Prospective Sustainability of the CAMP Area and other activities of interest to contribute to the development of the Reference Framework for Sustainable Development in this area, which will subsequently be submitted to the Coastal Commission.

2. Make recommendations, suggestions and specific proposals to the Coastal Commission.

3. Channel opinions/suggestions related to the CAMP Project made by the local community through the Coastal Forum.

Article 14: Objectives of the Coastal Council

1. Promote public participation to influence the decision-making processes with respect to Integrated Coastal Zone Management.

2. Be aware of and debate the relevant aspects of sustainable development for its territory from a multi-sector perspective.

3. Extend the scope of public participation through the Coastal Forum.

Section 4: Rules for the operation of the Coastal Council

Article 15:Frequency and location of meetings

1. The Coastal Council shall hold as many meetings as may be necessary to carry out the functions it has been assigned.

2. The meetings of the Coastal Council shall be held on a rotating basis in the eight Municipal Areas included in the CAMP Area, taking into consideration the proposals of the Council members.

Article 16: Call to Meetings

1. The call to meetings of the Coastal Council shall be made by its Representative Chairman through the Secretary, with a minimum notice of 15 days. The call will be accompanied by a proposal for an agenda and the documents that refer to the matters included in this proposal, including the reports from the Groups of Experts on the rest of the CAMP Levante de Almeria activities.

Article 17: Agenda

1. The provisional agenda shall be determined by its Technical Chairman and finally approved at the start of each meeting. Its content shall correspond to the proposal made with the call to the meeting, in line with the progress in CAMP Levante de Almeria and the requirements of the methodologies for its development. The agenda will include a section dedicated to inform about the budgetary and financial situation of the Project.

Article 18: Quorum of the Coastal Council

For the Coastal Council to be duly constituted for the purpose of holding the session, two thirds of its members must be present in the first call and a simple majority in the second call.

Article 19: Resolutions of the Coastal Council

1. The resolutions of the Coastal Council shall preferably be adopted by broad consensus.

Article 20: Minutes of the meetings

1. The Secretary shall take the minutes of each meeting of the Council. After their approval in the following meeting, they shall be endorsed by the Representative Chairman on the date of their approval.

2. The minutes shall include the following elements.

a) A brief outline of the background events and previous resolutions adopted.

b) Place and date of the meeting.

c) Agenda.

d) Summary of the matters dealt with.

e) Decisions adopted.

f) Annex I: List of Participants.

g) Annex II: List of reference documents.

Additional provision

The Steering Committee of the CAMP Levante de Almeria Project, composed of representatives from the Ministry of the Environment, Rural and Marine Affairs, the Department of the Environment of the Regional Government of Andalusia and the Centre for Regional Activities of the Programme for Priority Actions of the United Nations Environment Programme, shall monitor and validate the results of the activity related to institutional coordination and the framework for social participation.

Final Provision

This Regulation of the Internal Rules shall come into force once it is accepted by the members at the Inception Workshop of the CAMP Levante de Almeria Project. Any modification thereto must be approved by the Steering Committee.