Annex 3. Lessons learned from ICZM good practice around the world

This section of the report was extracted from a recent report made by Y. Henoque (IFREMER) for the Priority Actions Programme (PAP) on lessons learned and analysis of ICZM good practices around the world that can be useful for the Mediterranean and Black Sea coasts.

1 Establishing the ICZM strategy

Lesson 1 - Assessing policy options: a stepwise approach

Looking at the process involved in South Africa is extremely instructive (Glavovic, 2000) :

- from the outset of the Coastal Management Policy Programme, the intention was to prepare a "neutral" Discussion Document for public comment. It was envisaged that this document would provide the basis for developing a draft Coastal Policy document that could eventually be published as formal government policy. It was finally decided by the Minister in charge, the Minister of Environmental Affairs and Tourism (DEAT), that the Discussion Document should be published as a Green Paper[2];

- considerable attention was then focused on drafting the Green Paper, which was conceptualised as a capacity building "tool" that would inform stakeholders about the coast and the challenges inherent in its management. To achieve this purpose, it drew upon a variety of information sources, including past research as well as the findings of a series of *Specialist Studies* and input of stakeholders and the public, together with the insights developed by the Coastal Management Policy Programme team;

- the key elements of the Green Paper included background information about the coast and its management, a normative framework or the vision (regional and national visions), principles, goals and objectives for coastal management, and three institutional and legal option models for implementing the policy. A series of questions were posed to prompt readers to think about the implications of these different institutional and legal models . Since then, the same kind of consultation approach has been used by many countries including the EU using the internet among other things;

- after systemically collating the feedback on the Green Paper, the Project Management Team sought to address the more serious concerns raised by stakeholders, subsequently revised the document and submitted it for discussion again. This kind of iterative drafting process leads to the development of a close working relationship between the main actors involved at national and provincial level. Particular attention was given to developing a practical Plan of Action that would guide the implementation of the policy;

- through this iterative process, the Green Paper turned to the draft of a White Paper, which was again submitted to stakeholders for their information requesting them to send written comments;

- seven month after the launching of the Green Paper (September 1998 – March 1999), the Draft White Paper was finalised and handed to the Minister of Environmental Affairs and Tourism. It was then distributed to all stakeholders who had participated in the Coastal Management Policy Programme.

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[2] A Green Paper is aimed at stimulating public awareness and discussion about a public policy issue. It precedes a White Paper, which outlines formal government policy.

In all the models, public participation and local involvement are recognized as crucial components of coastal management. Similarly, NGOs and community organizations are, among others, increasingly playing a major role in costal zone management initiatives around the world. In most of the cases, communities have typically participated in coastal zone management through public meetings, hearings and inquiries, and as representatives on advisory committees or councils. In many countries, public involvement is a legislated requirement for the development of and implementation of any sector or field management programmes. In Japan for example, local involvement has been included for a long time with traditional community approaches forming a key component of managing resources in the coastal zone. Elsewhere, the special area management (SAM) approach adopted by a number of countries (e.g. Ecuador, Sri Lanka, Barbados) involve coastal community and government partnerships. In the Philippines, coastal zone management is largely the responsibility of the municipal level of government acting within a national coastal zone management framework and action plan.

Generally speaking, there are a number of lessons that may be considered as central to provoke and grab opportunities allowing public participation to happen:

- *At the outset, key stakeholders should agree on an appropriate process and structure to secure broad political support for the initiative*. This approach stands in contrast to common practice, which typically begins with technical analysis of a problem. By concentrating on process considerations first, attention can be given to building political support before stakeholders assume positions based on differing perceptions about how best to solve the problem. The setting up of a specific programme and its coordination body may promote the credibility of the process seen as a partnership between government, civil society and the private sector.

- *The process should be designed in an inclusive, voluntary and culturally sensitive manner*. Particular attention needs to be given to designing culturally sensitive and appropriate methodologies to engage diverse participants effectively in the participatory process. Different kinds of opportunities, forums and participation methodologies need to be developed, tested and applied, depending on stakeholder needs. It should be an iterative process in which capacity and trust are progressively built over time, contributing to deeper insights and to enhanced stakeholder relationships. Locally networked and informed regional managers may play a key role in this regard.

- *The process should be aimed at empowering historically disadvantaged individuals, groups and communities*. Socially and geographically distinct patterns of poverty and inequality will be perpetuated unless there is a commitment to empowering those who are marginalized. Creating opportunities for meaningful public participation can be a powerful means of mobilising historically disadvantaged people.

- *The process should be conceptualised as a partnership-building endeavour.* A broadly owned policy outcome is based on a shared commitment to its implementation. Such partnership-like relationships provide the basis upon which stakeholders can learn about and appreciate the interests of others. Conceptualising the process as a partnership-building endeavour helps to foster a common understanding of the issues and builds a share set of values that can be then translated into practical measures for cooperation.

- *The process should be designed and managed to deepen and extend public deliberation*. Promoting public participation presumes that participants are well informed about the issues at hand and are able to engage in group discussions that get to grips with the substantive nuances of the issues. It also presumes that participants are able to work through their differences of opinion and develop a common understanding of the issues. Usually, public meetings provide limited opportunity for in-depth discussion. Alternative forums and participatory methodologies are required to extend and deepen discussion, including small group discussion that facilitate increased interaction between specialists and stakeholders, as well as deeper levels of interaction between stakeholders.

- *The process should be managed in an innovative, reflective and deliberative manner that is responsive to changing circumstances and stakeholder interests.* From an operative point of view: (a) keeping the momentum requires *independent facilitators* who, depending on circumstances, may need to play different roles, ranging from mediator to negotiator, educator, advocate and so forth; (b) building stakeholders' interest, understanding and trust necessitates timely, accurate and *regular feedback* that reflects the nature of their contributions and the manner in which they have been integrated into the products of the process; (c) the process should be designed and managed to be *responsive* to the needs and interests of stakeholders and to the new insights that emerge in the course of the process, (d) careful attention needs to be given to using the most *appropriate media* and means to make the outputs of the process widely accessible and reach particular target audiences, such as key decision-makers or the youth; (e) conducting such an extensive participatory process requires securing sufficient *financial resources* as well as a *reasonable timeframe* to engage stakeholders in formulating the coastal policy.

Table 3Promoting meaningful public participation

Political legitimacy	At the outset, key stakeholders should agree on an appropriate process and structure to secure broad political support for the initiative
Process-driven approach	The process should be designed and managed in an inclusive, voluntary and culturally sensitive manner
Empowering process	The process should be aimed at empowering historically disadvantaged individuals, groups and communities
Building partnerships	The process should be conceptualised as a partnershio-like relationship building endeavour
Deepening public deliberation	The process should be designed and managed to deepen and extend public deliberation
Innovation, reflection and feedback	The process should be managed in an innovative, reflective and deliberative manner that is responsive to changing circumstances and stakeholder interests

From: Glavovic, 2000

Lesson 3 - Building on past efforts throughout a long process

Current and future coastal management efforts can be improved by understanding the successes and failures of past efforts. Past efforts not only provide an important historical context for prevailing efforts, they provide the point of departure for future efforts. All models show that time and resources are required before coming up with a national ICZM strategy whatever the form it takes. Conducting an extensive participatory process that deals with complex issues necessitates securing sufficient financial resources as well as a reasonable timeframe to engage stakeholders in contributing to the formulation of the coastal policy.

In South Africa, a variety of coastal management activities were carried out in the 1970s and 1980s. But it was not until 1992 that the government initiated activities to develop a coastal policy in dialogue with coastal stakeholders. It took a further five years before the policy formulation process actually got underway till the final publication in June 2000 of the *White Paper for Sustainable Coastal Development in South Africa,* a new government policy that promotes sustainable development through integrated coastal management.
To reach that stage, a Coastal Management Policy Programme was set up over a five-year period based on three separate sets of activities: (i) securing political support; (ii) putting the "building blocks" in place, (iii) the inception phase.[3]

[3] Bruce Glavovic. 2000. Building partnerships for sustainable coastal development. The South African coastal policy formulation experience: the process, perceptions and lessons learned. Common Ground Consulting/Department of Environmental Affairs and Tourism

Other countries like Canada or the UK have been through the same preparatory process before coming up with respectively the Oceans Act (1997) and the Canada's Oceans Strategy (2002), and, in the UK, a quite comprehensive process including a first draft of the national strategy (*Safeguarding our Seas,* May 2002) followed by a stocktake of current practice in ICZM (2004), a national consultation in 2006 (*Promoting an integrated approach to management of the coastal zone in England*) and lastly a national ICZM strategy (2009) soon followed by the enactment of the Marine and Coastal Access Act (2010).

Defining an ICZM national strategy is thus a long process in which constituency building is a key component of successful ICZM efforts to create public awareness of the need for ICZM, catalyse the necessary political support, and promote compliance.

Lesson 4 - Knowledge and understanding for system thinking

The identification of issues should be based on the gathering and integration of existing knowledge with additional studies where it is needed in order to share the available knowledge and promote a common understanding of ecosystem changes over time.

The UK report, *Charting Progress – An Integrated Assessment of the State of UK Seas (2005),* "brings together the scientific monitoring data, describing and evaluating what the data says about the current state of UK seas, and some of the trends, which are currently observable". As said, it is made on existing information to "provide a firm foundation for future policy-making and for *charting progress* towards achieving the vision that was set out in a previous report *(Safeguarding Our Seas, 2002).* The reverse could have been true: bringing the knowledge together to then set out a vision for the country and its regions.
It is important to underline that such a synthetic assessment was not made in once but has been going through a whole process including the previous drafting of four sector reports (Marine environment quality; Marine processes and climate; Marine habitats and species; Marine fish and fisheries).

It is also the opportunity to instil a "system thinking" approach where the coastal and marine system is thought of holistically, as an interconnected natural-human system that is complex, evolving and unpredictable. In Australia, the *Coastal Management Policy Programme* was seen to have developed a more holistic view of the coastal system as an integrated natural-human system but also of the significant value of ecosystem goods and services and the importance of viewing coastal management as an opportunity to invest in future sustainable development opportunities.

Even where information is limited, much can be achieved by consulting informed people, including specialists, government officials, resource users and coastal stakeholders. But in the same time, attention needs to be given to synthesising and sharing research findings with a broad audience, necessitating more effective communication not only between researchers but between researchers, managers, coastal stakeholders and the public. At the end, what counts is not to make a comprehensive assessment of the status of the coastal and marine ecosystems elements but to identify the major threats and issues that have to be tackled.

Lesson 5 - The issues that ICZM programmes address

Coastal issues are somewhat similar around the world. With few exceptions, most coastal nations are experiencing the environmental problems of habitat loss, pollution, and declining resources, as well as the social problems bound to such issues, including resource se conflicts and the governance issues raised by poor planning and decision-making on major development actions (Table 6). But beyond this apparent similarity there are important differences between countries, and particularly developed and developing countries where local people are heavily dependent on natural resources and almost no alternative when these local resources decline or disappear. A second big difference is in the rate of transformation of the landscape and the changes in resource condition; when development happens (e.g. shrimp mariculture, tourism development), its pace usually far exceeds the ecosystem resilience threshold but also the capacity of society to internalise the process of change and steer it to sustainable forms of development.

Table 4Environmental and development issues in the US and USAID-funded CRMP countries

Coastal issues	U.S.	Ecuador	Sri Lanka	Indonesia	Kenya	Tanzania	Mexico
Mariculture	Grey	Black	Grey	Black		Black	Black
Threats to critical areas and habitats	Black	Black	Black	Black	Grey	Black	Black
Decline in coastal fisheries	Black	Black	Black	Black	Black	Black	Black
Tourism	Grey	Black	Black	Grey	Grey	Black	Black
Urban development	Black	Black	Black	Grey	Grey	Black	Black
Land-based sources of pollution	Black	Grey	Black	Grey	Grey	Grey	Grey
Water supply and sanitation	Grey	Black	Grey	Grey	Black	Grey	Grey
Erosion/accretion hazards	Grey	Grey	Black	Grey	Grey	Grey	Grey
Shorefront development (including ports/marinas development)	Grey	Black	Black	Grey	Black	Grey	Black
Losses in historic, scenic and archeological sites	Grey	Grey	Black	Grey	Grey	Grey	Grey
Public access	Black	Black	Black	Grey	Black	Grey	Grey
Black: CRMP first priority			*Grey: CRMP second priority*				

Lesson 6 - The focus on coastal regions' specific features

The UK regional assessments, like for other countries' Green or White Paper of South Africa or of Madagascar, is a recognition that a "one size fits all" policy approach is not appropriate. A national strategy should be considered as an overarching national framework within which the characteristics of different provinces, regions and localities are addressed. In order to develop a policy along these lines, coastal stakeholders should be involved at three distinct but related geographical scales: the local level (i.e. a village, a community, town or city); the regional level (i.e. a coastal area that stakeholders consider to have characteristic biophysical, social, organisational and institutional features); and the national level (i.e. the coast as a whole, which would be the geographic focus of the national committee in charge).

In South Africa, thirteen coastal regions were identified on the basis of telephonic interviews and regional visits. The definition of regional boundaries was informed by the factors affecting the extent to which stakeholders could participate in the Coastal Management Policy Programme, e.g. organisational and institutional characteristics, the geographic location of stakeholders and the anticipated resource requirements to bring stakeholders together to public meetings. Regional Managers were appointed to facilitate public participation in the regions. Hence, the coastal regions boundaries were drawn out in a very pragmatic way, as a tradeoff between natural characteristics, administrative boundaries, and stakeholders' networks.

Table 5Fostering scientific integrity to improve knowledge and understanding

Systems thinking	The coastal system should be thought of holistically – as an interconnected natural-human system that is complex, evolving and unpredictable
Collaborative research	Policy-relevant research and analysis should foster collaboration and integration across traditional disciplinary boundaries
Integrating knowledge, understanding and values	Scientific and technical knowledge should be integrated with local knowledge and societal values
A process of social learning	Building public awareness and understanding of the coast and costal management should be understood as a process of learning from experience
Building an information base	A sound information base and an effective information management and monitoring system should be

developed

From: Glavovic, 2000

In Spain and in the framework of the preparation of the Strategy for Coastal Sustainability (Sano et al. 2010[4]), the Technical Diagnostic for the Spanish coast consisted in dividing the area of study (about 68% of the coast of Spain) into 8 coastal stretches corresponding to the coastal side of the River Basin District (RBD) along the following steps: (i) identification of management units, (ii) analysis of the physical, ecological, socio-economic, and land-use subsystems for each management unit, (iii) SWOT (Strengths /Weaknesses /Opportunities /Threats) analysis for each management unit, (iv) identification of priority interventions for each management unit, and (v) calculation of basic pressure, state, and response indicators for each management unit. Here, "management units were defined as spatial units with homogeneous features from a physical, ecological, socio-economic, or administrative point of view".

Based on these investigating steps, 6 factsheets were prepared for each of the 154 management units: (i) a physical subsystem factsheet, (ii) an ecological subsystem factsheet, (iii) a socio-economic factsheet, (iv) a land-use subsystem, (v) a SWOT analysis, and (vi) a strategic coastal interventions factsheet. To make this large amount of data communicable to the stakeholders and decision-makers, a set of PSR (Pressure /State, /Response) indicators were developed to come up with a more synthetic information.

Lesson 7 - Anticipating the impacts of climate change
As said earlier, climate change adaptation measures should be part of the strategy and not dealt with separately. The likely and potential impacts of sea level rise, increased frequency of storm events, acidification of seawater, desertification of arable land and the associated declines in ecosystem function should be considered on the short- (10 years), mid- (30 years), and long-term (100 years) periods. Some adaptation handbooks already exist like the USAID (2009) one on *Adapting to Coastal Climate Change: A Guidebook for Development Planners,* which offers a comprehensive overview of the impacts of climate change on coastlines and the tools that can be applied to the mitigation of its impacts.

The UK *Charting Progress* report (2005) for an integrated assessment of the state of UK seas, underlines the importance of fully integrating the assessment of possible climate change impacts in future strategies, considering that "in the long term, the greatest threat to the planet, including the marine environment, could be the impacts of climate change".

Table 6Contents of the UK Charting Progress report[5]

Measuring State: Indicators of change
A new integrated approach to marine assessment and the need for indicators of state
Physical and biological status of the seas
Physical characteristics of the seas
Biological indicators of state
Human impacts on marine environmental quality
Climate change; capture fisheries; aquaculture and shellfish harvesting; hazardous substances; nutrients; sewage treatment discharges; microbiological quality; radioactive discharges; oil impacts; construction in the sea and coastal zone; aggregate extraction and seabed disturbance; dredging of harbours and navigation channels; litter and waste; introduction of non-native species
Regional assessments
How the regional areas have been defined
What the regional assessment shows
Integrated assessment – the Status of the seas
Rationale and approach for the integrated assessment

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[4] Sano M., Gonzalez-Riancho P., Areizaga J., and Medina R. 2010. *The Strategy for Coastal Sustainability: A Spanish Initiative for ICZM.* Coastal Management, 38: 1, p.76-96.

[5] Defra. 2005. *Charting Progress. An Integrated Assessment of the State of UK Seas.* www.defra.gov.uk

Lesson 8 - Defining the coastal zone and putting it into context

In the Protocol, coastal zone boundaries are defined in a very flexible way as: (i) the seaward limit of the coastal zone is the external limit of the territorial sea; (ii) the landward limit is the limit of the competent coastal units.

It is clear that the definition of the coastal zone varies with each existing model. With respect to the size of the coastal zone, there is usually a tradeoff between comprehensiveness (bigger) versus acceptability and practicality (smaller). Some countries, such as Sri Lanka and Costa Rica, have adopted a narrow definition of the coastal zone. In contrast, seaward boundaries can extend as far as the outer limit of the Exclusive Economic Zone (EEZ), which is the case for most of the countries that developed a Maritime or Ocean Strategy. This trend towards more "comprehensiveness" makes the ecological boundaries of the entire coastal and marine ecosystem easier to consider and include into the strategy. The EU hence its Member States, and countries like Korea, Japan, China, India, Canada, Australia, and lastly the US have defined the coastal zone in such a way as to bring together the coastal and ocean aspects of management from internal waters out to the 200nm limit. This is seen as a critically important linkage to make in order to manage marine areas on an ecosystem basis, the very rationale of the Large Marine Ecosystem approach.

But because of the dynamic and "open system" nature of coastal and marine areas, analysis for planning and management should add other areas to the boundaries of the management of the ecological area, which are the *demand areas*[6]: demands from within the designated area; demands from outside the designated area but within the catchment area; demands from outside the catchment area, with respect to, e.g. waste disposal of pollutants transported into the area via atmospheric transport, demands for coastal recreation, including visits to unique marine areas,; and internationally determined demands, such as for global shipment of crude oil and oil products. Therefore, any management area should be considered in its multi-scale dimensions.

Lesson 9 - About the multi-sector approach

It has to be noted that at their inception many models are not comprehensive, but are rather single issue programmes that expand over time to include other sectors. For example, Sri Lanka, Barbados, Queensland (Australia), the UK and France initiated their respective coastal zone management programmes to address coastal erosion control and shore protection against urbanisation where the setback boundaries enforcement was a key issue. Nowadays, these countries and particularly those which have developed an overall coastal and ocean policy are attempting to coordinate and manage many sectors.

The most common approach to building a multi-sectoral capacity has been to develop working groups, such as committees or advisory councils, composed of agencies responsible for each key sector in the coastal and marine areas. Whatever the institutional arrangements made (we will come back to this issue later on), it is essential to look at the ways coastal stakeholders and the public actually contribute to the shaping of the policy outcome and its planned implementation.

Often, disillusions result from the fact that the sources and the scales at which the forces are driving the various issues are not or ill-taken into consideration into the action plan. For example, overfishing and the impacts of unregulated tourism may be considered as local pressures, but the degradation of wetlands or seagrass beds from the area of focus may be reducing the flows of larvae that repopulated the area and these impacts may be or may not be beyond the reach of local action. Careful documentation of the impacts of such global pressures as climate change might help to be aware of this scale issue and link with other policies or programmes addressing the causes of global warming.

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[6] B.T. Bower & R.K. Turner. 1996. *Characterising and analysing benefits from integrated coastal zone management (ICZM).* "Designing Sustainability", Fourth Biennial Conference of the International Society for Ecological Economics, Boston University, 4-7 August 1996.

2 Setting the vision

Lesson 10 - Baseline conditions in terms of process and outcomes

Referring to the widely used framework, the GESAMP (1996) cycle, it begins with an analysis of problems and opportunities, then proceeds to the formulation of a course of action, and looks at the commitment of stakeholders, managers, and political leaders through the appropriate allocation of resources by which the necessary actions will be implemented.

The effort and time to initiate and secure the "establishment" (previous section) of the strategy or programme will condition the nature and extent of the vision and objectives setting. As an example, in South Africa the dominant influence on the thinking behind the coastal policy was first rooted in traditional ideas about environmental policy. Progressively, through consultation, regional sector meetings, special scientific studies, the Coastal Management Policy Programme team members shifted from a focus on natural resources towards a more people-centred strategic perspective that aimed to realise the value of the coast as a place of enormous developmental potential, whilst maintaining the integrity of the coastal and marine ecosystems. This subtle but significant shift in thinking moved coastal management from the nature conservation arena and aligned it with the dominant political, social and economic agenda in South Africa, namely the pursuit of sustainable development.

In reflecting on the challenges and opportunities confronting the Coastal Management Policy Programme, a number of critical success factors were identified: (1) the policy should provide a national statement of political intent that secures buy-in for an integrated multi-sector coastal management approach, mainly through an understanding of why the coast is important, in political and economic terms; (2) the policy should outline a normative framework including the vision, principles, goals and objectives for coastal and marine management; (3) the policy should present a Plan of Action that provides clear direction for taking action to improve the coordination and integration of sectoral activities affecting the coast, as well as strengthening other policies and building capacity to implement the policy; (4) the policy should not attempt to address all issues of concern but rather should focus attention on agreed-upon priority issues that are uniquely coastal and specifically require a coastal policy response; (5) the policy should focus on issues that can be successfully addressed and its implementation must result in tangible changes that improve the livelihood of coastal stakeholders.

Lesson 11 - Visualizing a desirable future

The ICZM Mediterranean Awareness-Raising Strategy (MARS) is a framework strategy to support policy development and implementation. Among its core messages figure the vision of the future of the Mediterranean coast and sea, i.e. a coast and sea that are:

- *resilient* - resilient to climate change, resilient to natural processes, resilient to human processes);
- *productive* – productive financially, competitive, high in value, increasing GDP, alleviating poverty;
- *diverse* – diverse in ecological, diverse in experiential terms;
- *distinctive* – distinctive culturally, distinctive in marketing;
- *attractive* – attractive to visitors, investors and to local people;
- *healthy* – free from pollution.

This vision needs to be then translated into practical terms for each of the Mediterranean countries, putting the emphasis on one aspect or the other. It will be best developed with involvement of multiple stakeholders. It should lead to the description of the Third Order outcomes (practical results and benefits) but may highlight features of the First (enabling framework) and Second Order (changes in behaviour) outcomes that are especially important to achieving those ends.

In the case of the *Victorian Coastal Strategy*[7], the vision is clearly articulated with the specific policy directions which are then developed in the document, i.e. *Sustain, Protect, Direct, and Develop,* as shown below:

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[7] Victoria Coastal Council. 1997. *Victorian Coastal Strategy*. Official document 56pp.

Table 7The vision for the Victorian Coast (Australia)

"The coast of Victoria will be a pleasure to experience by both present and future generations, respected by all and recognised as one of the nation's icon" *The Victorian Coastal Strategy provides the framework to realise the vision for the coast. With community support and involvement, the Strategy will ensure that in the long term, the outcomes for Victoria's coast will:*			
Ensure the *sustainable* use of natural resources, so that the coastal and marine environment will be in better health in 20, 50 and 100 years time, and	**Ensure the *protection* of significant environmental features of the coast through establishing:**	**Provide clear *direction* for the future use of the coast including the marine environment, and which**	**Identify suitable *development* areas and development opportunities on the coast, and which**
is managed to preserve a diversity of marine and land-based ecosystems has improved standards of marine and estuarine water quality, is managed for the long term with care, efficiency, and skill is internationally recognised as one of the best coastlines in the nation and the world	a comprehensive system of well-managed national, marine and coastal parks and reserves other forms of open space which provide for the conservation and protection of significant natural areas effective mechanisms and actions to ensure the conservation and management of indigenous coastal and marine flora and fauna	1. integrates the planning and management of coastal land and sea 2. provides a diversity of experiences for Victorians and visitors 3. effectively and clearly defines areas for the location of appropriate activities 4. is characterised by world class quality of design, construction and maintenance	1. are recognised for the significant role they play in contributing to the economic prosperity of Victoria 2. continue to contribute to the health and well being of the millions of people who visit and use the coast 3. support an ecologically sustainable range of new and improved commercial, recreational and tourism activities of world class standard 4. has developments which are of a scale and character sympathetic to the surrounding coastal landscape or built environment

Lesson 12 - Developing appropriate indicators

To become powerful ICM management tools, indicators must demonstrate the measures of effectiveness of a project, programme or policy (strategy). Further, they become effective tools when they are used to encapsulate changes in the state of coastal and marine environments, trends in socio-economic pressures and conditions in coastal and marine areas (3rd Order outcomes), but also the state of ICZM enabling conditions (1st Order) and changes in behaviour of stakeholders and institutions (2nd Order of Outcomes) so that each change in the state of the coast may be correlated with corresponding changes in behaviour.

Generally speaking, as for the regional or national sustainable development strategies, their objectives are:

1. *To inform* – The importance of informing the public, elected officials and all sectors of society in a comprehensible way about the state and progress of the strategy, where leaders are expected to act as catalysts in interpreting and promoting sustainable development.
2. *To measure progress* – Progress is often measured in terms of objectives defined in a sustainable development plan or strategy. This facilitates periodic comparisons in time within the country and with other countries, and makes possible to determine the principal trends as part of a long-term evolution, as it is the case with the Mediterranean Strategy for Sustainable Development (2006).
3. *To aid decision making* – A number of documents emphasize the importance of assisting national decision-making processes on sustainable development by providing a set of indicators to measure advances in critical sectors.

A comparative analysis of 36 indicator systems for sustainable development[8] reveals that public administrations favour four main procedures for drawing up their list of indicators: interministerial collaboration, working groups, public consultations and the lessons learned from foreign and international experience.

According to Eurostat[9], there are two grand categories of indicator systems for sustainable development: *policy-driven* systems, where indicators reflect a strategy, and *statistics-driven* systems, which are developed to maximize the availability and quality of data. The problem is that reports dealing with strategies and indicators are very often distinct as in the case of the Mediterranean system where a few *policy-driven* indicators are included (see note 12).

The OECD, in a document entitled *National Strategies for sustainable development: good practices in countries of the OECD (2006),* presents the systems of Austria, the Czech Republic and Ireland as examples of "good practice in terms of indicators and objectives". Austria's strategy presents 52 indicators associated with 20 key objectives divided into four domains: quality of life, dynamic territory for business, living space and global responsibility. The objectives are quantified and have deadlines attached. For its part, the Czech system is based on two sets of objectives: the first (with a 116 indicators) is for monitoring the evolution of particular aspects, while the second (with 24) is for communicating with decision makers and the public. The indicators are organised in six categories. As for Ireland, it stands apart with its national green accounting and a method that uses satellite accounts to complete the economic accounts. According to Eurostat, the indicator system of the European Union, like virtually all national or local systems, is linked to the objectives in numerous treaties ratified by member states. Most of the latter have developed their own indicator systems for their national sustainable development strategies, to facilitate the measurement of progress toward national objectives.

Another interesting example more specifically focused on assessment of coastal trends is the US State of Florida case[10]. The Florida Assessment of Coastal Trends (FACT) is structured around nine strategic issues judged to be critical to the future of the coast over the next 20 years. These broad strategic issues were refined into two-to-four sub-issues or components of each issue. These sub-issues then became the final framework around which indicators were developed. Moreover, to make a clear link with the main elements of sustainable development (coastal ecology; quality of life; economic structure; cultural and aesthetic values), and since each indicator measures one or more of these characteristics, each one has been labelled with a series of icons representing each component.

Table 8 The nine issues and their associated sub-issues for the Florida Assessment of Coastal Trends (1997)

1. Impact of growth in the coastal zone	**5. Sustaining the human uses of the coast**
1. Impacts of population growth	**1.** Maintenance of recreational value
2. Patterns of development	**2.** Sustainable economic use
3. Sufficiency of infrastructure	**3.** Balancing development with coastal resources
4. Economic impacts	**4. Balancing public and private uses of resources**
2. Disruption of coastal physical processes	**1.** Private property issues
1. Alteration of existing natural systems	**2.** Stewardship of coastal resources
2. Construction of altering structures	**3. Preservation of cultural and Aesthetic resources**
3. Responding to coastal threats and hazards	1. Preservation of archaeological and historical
1. Coastal hazard mitigation	
2. Incompatible living areas	

[8] Bureau de coordination du développement durable, Ministère du Développement durable, de l'Environnement et des Parcs. 2007. *Comparative analysis of indicator systems for sustainable development.* 42pp.

[9] European Commission and Eurostat. 2004. *EU Member States experiences with sustainable development indicators.* Luxembourg, Office for Official Publications of the European Communities.

[10] Florida Coastal Management Program.1997. *Florida Assessment of Coastal Trends.* www.fsu.edu

3. Industrial impacts **4. Degradation and restoration of coastal ecosystems** 　**1.** Habitat change 　**2.** Species population trends 　**3.** Water quality trends **4. Managing freshwater allocation** 　**1.** Freshwater allocated for ecological maintenance 　**2.** Freshwater allocated to meet residential needs 　**3.** Freshwater allocated to meet commercial/industrial needs 　**4.** Freshwater allocated to meet agricultural needs	resources 　**2.** Preservation of living resources 　**3.** Conservation of coastal ocean space **4. Encouraging public awareness and involvement** 　**1.** Public awareness 　**2.** Public participation

From: FACT, 1997

Focusing on the coastal and marine areas, a report from the European Commission[11] mentions that "only a few countries and regions have effectively engaged in the collection and analysis of specific indicators to the coastal zone. A methodology to link the efforts in ICZM to trends in sustainability is still lacking. While the methodology to assess the spatial impacts of EU policies has progressed[12], the gaps in data and the lack of effective information-sharing systems are still a barrier to its more widespread and pro-active use in decision-making processes".

Another worth-looking at model comes from a European Commission study on measuring progress towards Maritime Spatial Planning (MSP)[13] that should be considered in the context of ICZM (see section on *The case of coastal and marine spatial planning*): a set of indicators (Policy and legal framework; Information management; Permitting and Licensing; Consultation; Sector conflict management; Cross-border cooperation; Implementation of MSP) has been proposed and tested on four countries on the basis of existing and compiled information. The main conclusion was that there was not sufficient information within these reports to fully assess the proposed indicators.

To support the implementation of a national ICZM strategy, information needs to be managed, analysed and eventually produced as a tangible end-product to ensure that it reaches and is understood by the broader user community. Bowen and Riley (2003) identified the sequential steps involved in the wider application of indicators:
1. articulating an indicator framework;
2. determining a data acquisition strategy;
3. sustaining data management;
4. agreeing on protocols for data analysis; and,
5. developing reporting products.

Based on the PEMSEA's experience[14], Table below shows initiatives that are carrying out these sequential steps, based on current or possible Mediterranean approach and outputs. The objective is to demonstrate how representative initiatives may be addressed and strengthened across scales. This would create a greater impetus for the successful implementation of an articulated indicator framework across scales that could streamline efforts at the local, national and regional levels.

Table 9Indicator-led data management following sequential steps across scales

[11] Commission of the European Communities. 2007. Report to the European Parliament and the Council: An evaluation of Integrated Coastal Zone Management (ICZM) in Europe. Communication from the Commission COM(2007) 308 final

[12] European Environment Agency. 2006. *The hanging faces of Europe's coastal areas.* EEA Report No.6/2006, European Spatial Planning Observatory Network www.espon.eu

[13] European Commission. 2008. *Legal aspects of maritime spatial planning.* Final Report to DG Maritime Affairs & Fisheries. 78pp.

[14] Chua Thia-Eng. 2006. The dynamics of integrated coastal zone Management. Practical applications in the sustainable coastal development in East Asia. PEMSEA/GEF/UNDP/IMO Ed. 431pp.

	Local	National	Regional	International
Articulate an indicator framework driving the selection of specific measures		Orders of Outcome framework?	MSSD Objective: Sea & Coastal zones 4 priority indicators+ additional indicators	GCOS GOOS GTOS GIWA LOICZ IHDP MEA
Determine an efficient and effective data acquisition strategy		Ecosystem assessment Risk assessment Environmental impact assessment Stakeholder analysis Cost-benefit analysis	RACs and MEDPOL data systems networking European Atlas (Mediterranean basin)	UN Atlas
Create and maintain a sustained data management		Integrated Information Management System	MISESD INFO-MAP	
Agree to protocols for data analysis		Risk quotient and standards Social science research standard protocols	MEDPOL	Observing systems protocols
Develop reporting products to ensure information reaches and is understood by the broader user community	Coastal profile	State of the coast	State of the environment and development in the Mediterranean	Global assessments

GCOS – Global Climate Observing System

GOOS – Global Oceanographic Observing System

GTOS – Global Terrestrial Observing System

GIWA – Global International Waters Assessment

LOICZ – Land-Ocean Interactions in the Coastal Zone Project (International Geosphere Biosphere Programme/IGBP)

IHDP – International Human Dimensions Programme on Global Environmental Change (IGBP)

MEA – Millennium Ecosystem Assessment

MISESD – Mediterranean Information System on Environment and Sustainable Development

Adapted from Chua Thia-Eng (2006)

3 Analysis and futures

Lesson 13 - Going offshore with MSP

In the Mediterranean like elsewhere, the management of ocean resources is often limited to fisheries while countries' approaches, objectives and policy structure vary greatly. States with burgeoning ocean management schemes are looking to more established national programmes for lessons learned and best practices, as well as a better understanding of what "maritime spatial planning" (MSP) truly means in relation with ICZM and for the future of ocean planning within their maritime boundaries and in the Mediterranean region.

It is to help states and federal government agencies in taking a fresh look at management of ocean resources that the US NOAA Coastal Services Centre launched a large stakeholder analysis[15] across the states of the country in order to get a better understanding of stakeholders' current and potential future use and collaboration as regards the MSP tool. The study built on earlier experiences to develop a forward-looking assessment of what was needed for broader use of MSP. The information was gathered from

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[15] NOAA Coastal Services Center. 2010. *Marine Spatial Planning Stakeholder Analysis*. NOAA Report, 74pp.

literature reviews, Web searches, and interviews with stakeholders from across the eight designated NOAA coastal regions: Northeast, Mid-Atlantic, Southeast and Caribbean, Gulf of Mexico, West Coast, Hawaii and the Insular Pacific, Alaska, and Great Lakes.

Among the report recommendations, it is noted that MSP is a difficult concept to grasp and define with particular areas of confusion which are: the scale of planning (ecoregions / coastal zone?), the iterative nature of the process, whether efforts that are looking at multiple uses, but are driven by management of one particular use, can be considered MSP?

Making a parallel with the Mediterranean Action Plan, the regional organizations including the Regional Activity Centres could become the backbone of regional MSP efforts within the ICZM framework, providing countries with forums to share and coordinate data management strategies, facilitating stakeholder engagement, and more generally speaking sharing lessons learned.

Lesson 14 - Building scenarios
Depending on the scale, scenarios may have different functions:

1. there are global or regional scenarios like those of the IPCC (2008), the Millennium Ecosystem assessment (2005), or those of the MAP-Blue Plan (2006) for the Mediterranean; these scenarios are composed of a set of coherent, plausible stories designed to address complex questions about the uncertain future of coastal and marine socio-ecosystems at global or regional level. Here, scenario analysis offers a means of exploring a variety of long-range alternatives. Global scenarios draw on both science –our understanding of historical patterns, current conditions and physical and social processes- and the imagination to articulate alternative pathways of development and the environment. While we cannot know what will be, we can tell plausible and interesting stories about what COULD be.

2. at a smaller scale and as defined in the SMAP III Practical guide to ICZM (2009), "the scenario approach is a prospective analysis corresponding to the description of a future situation and of the various steps needed to move from the original situation to the future situation". It is a participatory approach (see *Imagine* approach)[16] which helps in developing a shared vision hence reinforcing the stakeholders' sense of ownership. The same practical guide then makes a short description of how and what kind of scenarios were developed and discussed in the case of the ICZM pilot project of Sfax, Tunisia. Here, we don't know what will be as well, but we try to define what we WANT.

The building up of a national strategy and its action plans may necessitate the use of both, which has been seldom done in past experiences, i.e. considering two possible futures as defined by a "global" scenario and cutcrossing their outcomes with, for example, three other possible scenarios as regards the attainment of the desirable goals. That would make three prospective scenarios each integrating two different global situation that the country much depends on but without much control on its occurrence. A study carried out by the Economic and Social Council of Brittany (2009)[17] is one example of such an approach integrating IPCC's climate change scenarios with governance development scenarios within the region.

Rather than prediction, the goal of scenarios is to support informed and rational action under a strategy and/or a plan by providing insight into the scope of the possible and the desirable. They illuminate the links between issues, the relationship between global/regional and national development and the role of human actions in shaping the future. Scenarios may make use of various quantitative tools, but they can provide a broader perspective giving voice to non-quantifiable aspects such as values, behaviours and institutions.

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[16] UNEP/MAP/MCSD/Blue Plan. 2006. *A practitioner's guide to "Imagine" The Systemic and Prospective Sustainability Analysis*. MCSD Reports.
[17] CESR Bretagne. 2009. *Pouvoirs et démocratie en Bretagne à l'épreuve du changement climatique, à l'horizon 2030*. Report 199pp. www.cesr-bretagne.fr

4 Designing the future

One role of ICZM, as a sustainable development approach of the coast and the sea, is to balance development and conservation. In costal regions, and in developing countries in particular, degradation is likely to impact the sustainability of livelihoods of local populations and the long-term viability of any development strategy, including tourism. For example, in the Mediterranean like elsewhere, degraded coastal areas can lead to a decline in overall tourist revenue with serious consequences for local economies, and can lead to negative impacts on subsistence activities.

In Mexico, Bahia de Santa Maria area, with the assistance of the Coastal Resource Centre (CEC)[18] (University of Rhode Islands, USA) and Conservation International/Mexico (CIMEX), users and stakeholders have established an integrated management plan with a focus on fisheries, freshwater inflows, and bay circulation to sustain the fisheries and the bay's natural productivity. The plan helps define a balance between long-term economic growth and conservation, recognizing that the ecological and economic systems have linkages, often with direct and immediate feedback.

The guidelines for mariculture and tourism development prepared under the leadership of the Tanzania Coastal Management Programme (TCMP) have the goal of promoting income-generating businesses while protecting the coastal environment. These practices promote a better balance between development and conservation, thereby fostering a tourism industry that will be sustainable in the long term (PAP/RAC, 2009).[19]

In another Special Area Management (SAM) in Mexico (Sinaloa), the same CRC and CIMEX worked with shrimp farm organisations and the marina industry to integrate development in these industries with environmental stewardship. Experience shows that private businesses are willing to accept responsibility for their actions and to consider alternative actions provided they are acknowledge as part of the process and they can increase the value and long-term viability of their activity. Similarly, Proyek Pesisir, a national programme in Indonesia, has worked with a village on the island of Sumatra to improve the economic and environmental sustainability of shrimp farms as it was done on a bigger scale in Ecuador[20].

Lesson 16 - Generating commitment through adaptive management
If the necessary constituencies, the institutional capacity, or both are weak or missing, a formal commitment by a national government can have real little meaning. Thus, formalized commitments are no more important than the other two 1st Order Outcomes (motivated constituencies and institutional capacity) as enabling conditions.

To do so, ICZM practitioners should adapt quickly to the political evolving climate and take full advantage of political opportunities that might be available to move the ICZM process forward. Another important element is the practitioners ability to convey the possible outcomes of ICZM to elicit political buy-in through improving their communication skills.

In Thailand, although it was a national ICZM project and not yet a strategy, the five-years CHARM (Coastal Habitats and Resources Management) project[21] kept on adapting and turning the different events into opportunities. Among these, the Tsunami catastrophic event has been a turning point in regard to the visibility and implementation of the project. Compared to the planned one and with the same content, the actual phasing was characterized as follows:

1998-2002:   *Project initialization* and feasibility study.

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[18] CRC/USAID. 2003. Crafting Coastal Governance in a Changing World. CRMP, S.B. Olsen, Ed. 376pp.

[19] PAP/RAC. 2009. Sustainable coastal tourism. An integrated planning and management approach.

[20] CRC/USAID. 1995. Eght years in Ecuador: the Road to Integrated Coastal Management. D. Robadue Ed., 319pp.

[21] CHARM. 2007. *CHARM project completion report (2002-2007)*. www.charmproject.org

2002-2004: *Project starting and long warming up*: looking for partners through establishing communication flow, identifying the existing national expertise, passing first partnership agreements.

2004-2006: *Project motoring*: turning Tsunami aftermath into an opportunity: partnership with NGOs network, Save Andaman Network; participation to government Task Forces; dialogue with donors; starting working with local governments.

2006-2007: *Project speeding up for smooth shifting out:* field projects and community organizations strengthening; local governments strengthening and networking; promoting national dialogue and policy green paper; linking with projects and donors for continuation of activities.

At a certain scale, successful ICZM projects or programmes can help to convince national governments to develop national policy or enact national legislation in support of ICZM practice, its replication and scaling-up. A good example is the issuance of an Executive Order by the President of the Philippines[22] adopting integrated coastal management as a national strategy. This Executive Order is based on the success experienced in the development and implementation of ICZM in the regions of Batangas and Bataan, as well as the Manila Bay project. The same could be said for China (Xiamen experience) and for Vietnam (Danang experience). Here, the regional programme in charge, PEMSEA, has developed a strategy where the most populated and heavily impacted areas from human activities were picked up as ICZM pilot areas to have a significant national impact.

Lesson 17 - Institutional arrangements

There are three main institutional approaches used throughout the world to effect the required integration of coastal and marine management:

- Concentrate authority in a new centralized agency. For example, Sri Lanka set up a Coastal Conservation Department to develop and coordinate management efforts, the UK created the Marine Management Organisations under its Marine and Coastal Access Act (2009), Japan created a Cabinet Council of Oceans under its Ocean Basic Law (2007), and the US Ocean Task Force very recently proposed to create the Ocean National Council to "consolidate and strengthen the Principal- and Deputy-level components of the existing Committee on Ocean Policy within a single structure"[23].

- Expand and enhance the duties of an existing agency. In New Zealand, the Department of Environment was given significant powers under the Resource Management Act (1991), and in South Africa the Department of Environmental Affairs and Tourism became the lead national agency responsible for coastal management.

- Establish an inter-agency coordinating committee. The Netherlands established and institutionalised an inter-agency coordinating committee, while in Ecuador an inter-agency committee was established and placed at the highest level of government.

There are many coastal zone activities that have an international dimension, including marine environment quality, pollution from watersheds, shipping, oil and gas drilling and production, the exploitation of living marine resources, and maybe in a not too far future, the management of large marine protected areas like it is already the case for a few of them. A successful ICZM programme must then be capable of integrating transboundary issues with multiple sovereign governments. Many nations have coastal neighbours and have established multilateral agreements and mechanisms to address mutual concerns. Among others, The Netherlands is well-known for its long standing cooperation with other nations bordering the North Sea and, in the Mediterranean, the ICZM calls for transboundary cooperation for contiguous coasts.

At a large scale, the Gulf of Maine Action Program (GMAP) is a multilateral coastal zone initiative intended to address ocean use and river basin management in the Gulf of Maine. Nova Scotia and New Brunswick, together with the new England states, are members of the Gulf of Maine Council with the objective of developing an integrated management approach for the region. The GMAP provides a potential mechanism

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[22] Chua Thia-Eng, 2006

[23] White House Council on Environmental Quality. 2010. *Final Recommendations of the Interagency Ocean Policy Task Force, July 19, 2010.* Report to the Government 77pp.

for multiple government cooperation concerning ICZM, requesting the participation of both the Canadian and US federal governments to negotiate and enter into additional multilateral agreements and arrangements.

5 Realising the vision

Lesson 18 - ICZM legislation and spatial planning

Without enjoying a regional sea ICZM Protocol like in the Mediterranean (the EU has only an ICZM Recommendation which is not legally binding), the other countries engaged in an ICZM strategy or programme development, present a variety of legislative instruments directed toward particular sectors, as well as some specific to ICZM needs like protecting coastal environments. Among these, two general types of legislation may be identified: ICZM-specific legislation, and more general legislation which includes provisions for ICZM.

But as stated earlier, the trend is now going towards Ocean-related laws and ocean or maritime national strategies including the use of integrated coastal zone management. However, the existence of "ocean laws" and their strategy, whilst giving the benefit of overall coherence, does not replace existing or future specific laws, recommendations and strategies on ICZM like it is the case in a number of EU Member States following the EU Recommendation on ICZM (2002) and the EU Integrated Maritime Policy and its Plan of action (2007).

Following Billé and Rochette (2010)[24], eight Mediterranean countries have a specific law dedicated to the coastal area, mostly from the coastal protection point of view while incorporating the requirements and principles of ICZM: recently in Algeria, Israel and Croatia, but also in Spain, France, Turkey, Greece and Lebanon.

Citing many cases, the same authors argue about the benefits of combining action plans with a normative approach: "While the existence of a legal framework does not in any way guarantee its implementation, and ICZM project, outside of any normative framework that is pre-established or under construction, is almost useless – at least in comparison with the sums of money invested."

Another important aspect regards the existing spatial planning legislation that is likely to affect the ease of implementing ICZM. An evaluation of ICZM in Europe[25], reported that one of the key constraints is the legal division between spatial planning of land and sea based activities. This is slightly easier where spatial planning covers both land and sea areas, although this normally only goes up to the territorial sea (12nm), e.g. in both Germany and Sweden municipal plans can be extended to 12nm but not into the EEZ.

Lesson 19 - Making national and local budgets available

Regional and national governments and organisations should play a key role in obtaining funding to start local initiatives and sustain larger programmes that provide resources for enhancing local success. The Sri Lanka coastal programme has been receiving recurrent allocations from the national budget with stable staff and operating funds. Ecuador was able to obtain eight years (1986-1994) of funding through its collaboration with USAID, followed by a much higher level of support from the Inter-American Development Bank. In Mexico, international donors and NGOs, as well as the Mexican Conservation Trust Fund, have been moving toward greater coordination in funding site-based coastal conservation projects and work in *hot spots* or *eco-regions.* The combined efforts included capacity building, regional analysis, visioning exercises and priority setting, and promoting national and regional attention to critical local situations. At the local level, a large proportion of revenues collected from concessions located in the 20-mile federal coastal zone were returned to coastal municipalities, including a fraction targeted specifically for local coastal management actions (CRC/USAID, 2003).

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[24] R. Billé & J. Rochette. 2010. *Combining project-based and normative approaches to upscale ICZM implementation.* Background Paper, Policy, Science and Technical Symposium, Session 36: Integrated Coastal Zone Management: Time to Upscale. Global Oceans Conference 2010, May 3-7 2010, UNESCO, Paris.

[25] *Evaluation of ICZM in Europe.* 2006. www.ec.europa.eu/environment/iczm/pdf/evaluation_iczm_report.pdf

Lesson 20 - Implementing capacity building

The recent report *Increasing Capacity for the Stewardship of Oceans and Coasts (National Research Council, USA, 2008)* found that capacity building to strengthen the effectiveness of ocean and coastal governance has seldom been the primary focus of most of the coastal management initiatives. The report defines capacity building as strengthening the knowledge, the abilities, relationships and values that enable organisations, groups and individuals to reach their goals, addressing the following themes:

1. how ecosystems function and change;
2. how the processes of governance can influence the trajectories of societal and environmental change;
3. how strategies can be tailored to the history and culture of the place;
4. how to assemble and manage interdisciplinary teams.

Referring to the Orders of Outcomes, effective action requires understanding the degree to which the 1st Order preconditions for the practice of the ecosystem approach is present and selecting the issues that can be addressed to begin the process of changing the behaviours associated with the 2nd Order while simultaneously assembling constituencies for such actions and winning commitments for sustained effort.

Practically, capacity must first be instilled within individuals and then expressed through institutions. Learning-by-doing, complemented by education, specialised training and exchanges among practitioners together form effective strategies when they are tailored to the identified needs in the different sectors and specific places. Still, much that is being learned is undocumented and remains within the personal experience of the individuals concerned. Many funding organisations persist in demanding 3rd Order outcomes (e.g. more fish, restored environmental conditions, higher incomes) in the short timeframe of a highly funded project. They most of the time underestimate the challenges of achieving the specific changes in the practices required of specific groups and their institutions within a society.

The seven-year (1996-2003) programme Conserving Critical Coastal Ecosystems in Mexico (C3EM) approach was for a good part about the definition of roles of the project team members asking the different partners to assume the lead role in interactions with local authorities and other groups. However, the tendency in the mid 1990s, was to emphasize scientific and technical expertise over advocacy. Process skills like skills in building constituencies and in negotiating and implementing successful co-management agreements remained poor. Partner organisations recognized then that their staff had little experience collaborating with other NGOs or universities and decided to establish ICZM programmes robust enough to endure a three-year cycle of staff turnover and political change at the local level. The annual workplan requirements and semi-annual reporting became a team-building effort, and a time to periodically assess and adapt the programme.

Lesson 21 - Monitoring and evaluation system

The purpose of monitoring and evaluation is to determine the extent to which and ICZM programme is achieving its objectives. Although it is an integral part of the policy and management processes, it is often ignored because the functions of monitoring and evaluation and their dynamics are usually poorly understood and rarely used for refinement of the programme or the policy.

Generally speaking, far more effort has gone into developing, refining, and monitoring Third Order outcomes than either First or Second Order outcomes. This has contributed to a major problem with the designs of most ICZM initiatives in many nations. Most investments in ICZM set their targets in Third Order terms even when experience should have made it abundantly clear that these lie beyond the time scales of the usual donor or any external donor funded "project." The more successful ones such as the Chesapeake Bay Program, and the Great Barrier Reef Authority, have taken two or more decades to achieve their Third Order goals. In developing nations in the tropics but, for example, in European countries as well, Third Order outcomes are often limited to small demonstration sites. Even in the most experienced countries like in the U.S., the documentation of Third Order achievements potentially attributable to the coastal zone management programs of coastal states has been frustrated by an absence of baselines and adequate monitoring protocols (Olsen, 2003).

Yet, the stepwise approach through the management cycle, like the one promoted in the Mediterranean CAMP projects, is largely used to track the actions and accomplishments of the programme/project as a whole. *Performance evaluations* look at the quality of project implementation and how well goals are being achieved; its purpose is to seek ways to improve programme or project design and make adjustments to the internal workings of the ICZM programme or project.

Outcome assessments evaluate the impacts of a coastal management initiative on coastal resources and/or the associated human society, mainly focusing on the three Orders of outcomes as mentioned earlier. For example, over the five- to eight-year life of USAID-funded Coastal Resources Management Programmes (1995-2003) in six countries, it was assumed[26] that substantial and important First Order outcomes (Enabling conditions: adopted policies, strategies, order and laws) and Second Order outcomes (changed institutional and individual behaviours) have been achieved at multiple scales. These provided the foundation for larger-scale Second and ultimately Third Order outcomes, namely changes in environmental and/or socio-economic conditions at a number of demonstration sites but at a relatively small scale. The same has been observed with the rate of progress made by ICZM programmes in the US after passage of the Coastal Zone Management Act: once programmes are approved and begin implementation, achieving significant Third Order outcomes has required many years of sustained efforts.

1st Order outcomes

Experience tends to show that an effective programme will be strengthening its 1st Order four categories of preconditions[27] as it generates some 2nd and 3rd Order outcomes by addressing the most tangible issues. The key therefore, is to build many bridges between the 1st and the 2nd Orders and not to structure a programme too rigidly into planning and implementation phases. Nonetheless, a well informed understanding of the existing governance system and careful consideration of the indicators for the 1st Order preconditions will support sound judgments about readiness for implementation[28].

2nd Order outcomes

The selection of *boundary partners* (see Strategy section: Identifying the boundary partners) enables a programme to specify what 2nd Order changes in behaviour is anticipated to generate progress towards the 3rd Order goals. The IDRC methods[29] suggest organising such monitoring by identifying an *outcome challenge* for each category of boundary partners and then selecting graduated variables for assessing the degree to which those changes in behaviour are achieved. In that sense, the 2nd Order outcomes may be looked at as an expression of a *learning by doing* approach.

3rd Order outcomes

What will be monitored and how the monitoring will be done is logically to be determined by the specific 3rd Order targets or objectives supposed to be achieved. It is therefore important to describe and as much as possible quantify the environmental and social respective baseline conditions. From past experiences, it is strongly advisable to avoid getting lost in tracking changes on too many items (abundance of fish, water quality, income of target social groups, etc.) but instead to carefully select a very few indicators that will provide future comparison to the baseline conditions. As mentioned earlier, the relative simplicity of the monitoring system of the Mediterranean Strategy on Sustainable Development should be taken as an example.

[26] CRC/USAID. 2003. Crafting Coastal Governance in a Changing World. CRMP, S.B. Olsen, Ed. 376pp.

[27] (1) Specific goals for target environmental and societal outcomes ; (2) Supportive and informed constituencies ; (3) Required implementation capacity ; (4) Commitments for necessary authorities and resources for implementation.

[28] Olsen, S.B. ; Page, G.G. & Ochoa, E. 2009. *The analysis of governance. Responses to ecosystem change: a Handbook for assembling a baseline.* LOICZ Reports & Studies No.34. GKSS Research Center, Geesthacht, 87pp.

[29] S. Earl, F. Carden, T. Smutylo. 2001. *Outcome mapping – Building learning and reflection into development programs.* International Development Research Center Ed. 139pp.

Baselines

The Orders of outcomes method calls for baselines that provide a reference point for assessing the progress and performance of a programme that has adopted the ecosystem approach. They are at least of two dimensions:

3. a baseline of the characteristics and functioning of the governance system that the programme is attempting to influence through 1st and 2nd Orders achievements, and the project's capacity to do it;
4. a baseline that specifies the desired 3rd Order societal and environmental conditions that constitute the long term target of the programme.

As said in the corresponding handbook (see note 48), this method has been initially applied in Latin America under the support of LOICZ, the Inter-American Institute for Global Change Research, the International Human Dimensions Programme on Global Environmental Change, the AVINA Foundation, the Coastal Resources Center at the University of Rhode Island, SustainaMetrix, and EcoCostas.