OURCOAST

ICZM in Europe

Guidance based on collected ICZM cases

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CHAPTER 1

Introduction

1.1 BACKGROUND

The coast is much appreciated by all of us, due to its variety of functions and resources. Different human interests can sometimes be conflicting, such as efforts to exploit the economic potential of an area (economy) versus the creation of a natural, undisturbed environment (ecology). Finding a balanced solution is not always an easy task. Which actions are appropriate when coastal uses are conflicting and harming the natural resources? European coasts are densely populated and spread over a number of countries which are very diverse regarding administrative regulations and approaches to planning and management of the coastal areas. High anthropological impact impeded big changes leading to deterioration of the European coastal zone. Sustainable planning is required to preserve the benefits of our coast. Integrated Coastal Zone Management (ICZM) is a planning and coordinating process by which decisions are made for the sustainable use, development and protection of coastal and marine areas and resources.

Since 1996, the European Commission has intensively worked to promote Integrated Coastal Zone Management (ICZM) as an approach to integrated planning and management, in which all policies, sectors and interests are properly taken into account to achieve sustainable coastal development. The EU ICZM Recommendation requested the EU Coastal Member States to set up strategies to promote ICZM along their shorelines.

From 1996 to 1999, the European Commission operated a Demonstration Programme on ICZM to provide technical information about sustainable coastal zone management and to indicate how to stimulate a broad debate among the various parties involved in the planning, management and use of the European coastal zones. In 2000, based on the outputs of the Demonstration Programme, the Commission adopted the EC Communication "ICZM: A Strategy for Europe" and a set of Recommendations concerning the implementation of ICZM. The Recommendation, adopted by the Council and Parliament in 2002, outlined steps which Member States should take to develop national strategies for ICZM, importantly by involving all coastal stakeholders. To support the implementation of the ICZM Recommendation, the Commission facilitated an Expert Group in 2002. In addition, the Working Group on ICZM Indicators and Data was set up. This group has established two sets of indicators, one aimed to measure progress in ICZM, the other measuring sustainability.
In the next years, 2006-2007, the European Commission reviewed the implementation of the EU ICZM Recommendation, based on Member States national reports, the state-of-the coast assessment and an external evaluation report. Most national strategies were adopted by EC Member States in 2006. One of the outputs of these national reports has been their role in

stimulating the development of relevant legal instruments in the Baltic, Mediterranean and Black Seas. Another key achievement has been the codification of a common set of principles underpinning sound coastal planning and management.

The eight principles on good ICZM practice are:

1. A broad overall perspective (thematic-geographical) including the interdependence and disparity of natural systems and human activities with an impact on coastal areas;
2. A long term perspective including the precautionary principle and the needs of present and future generations;
3. Starting from a solid scientific basis and adaptive management during a gradual process
4. Local specificity including specific solutions and flexible measures;
5. Working with natural processes (carrying capacity),which will support human activities to be more environmentally friendly, socially responsible and economically sound in the long run;
6. Creating a platform of acceptance of ICZM by public participation and communication, for example by means of agreements and based on shared responsibility;
7. Support/involvement and coherence of all relevant administrative bodies to improve coordination of the various existing policies;
8. Use of a combination of instruments to facilitate coherence between sector-based policy objectives and coherence between planning and management.

Furthermore it is necessary to take environmental costs and benefits into account.

Some constraints to the ICZM implementation are reflected in the lack of proper means for exchange of experiences and access to outstanding studies and best practices being produced in coastal European countries, at different authority levels. In 2008, the Directorate General Environment of the European Commission, commissioned a three-years-project called OURCOAST. The project is a further step in the joint efforts of the European Commission, Member States, coastal regions and networks, to support and implement sustainable coastal planning and management

The overall goal of OURCOAST is to create an information base and groundwork that will further support implementation of ICZM in coastal areas by the establishment of long-lasting information mechanisms that promotes the sharing of experiences and practices throughout Europe. OURCOAST offers these experiences to all coastal decision-makers, policy-makers and users. As part of the OURCOAST project, this guidance has been developed to illustrate the lessons learned from the OURCOAST cases.

1.2 THIS GUIDANCE

This practical ICZM guidance contains tips on future integrated planning projects and on possible ways to implement ICZM in policies and tools, based on the OURCOAST experiences. The tips are relevant for everyone who is involved in the coastal policy process. The involved parties and their roles in coastal zone management are divided into six categories:

- European authorities with a key role in dealing with trans-boundary issues and establishing all-embracing coastal and marine policy;

- National authorities with a key role in establishing administrative arrangements and requirements for the development of coastal and marine plans and effective planning frameworks;
- Regional authorities with a key role in articulating regional planning principles and objectives and addressing issues which span a wide geographic range (beyond single local authority);
- Interregional / Regional seas authorities with a key role in establishing an interregional and for the regional seas framework for on-the-ground or on-the-water coastal and marine management;
- Local authorities with a key role in addressing issues and problems in a small geographic area and articulating tangible action and development-oriented objectives;
- Territorial authorities (ports, river-basins) with a key role in developing strategies for the use, development and management of small coastal areas.

As part of the OURCOAST project, a total number of 328 relevant and fully verified case studies across Europe has been evaluated, resulting in circa 65 success factors for ICZM. The tips provided by this guidance are mainly based on the success factors derived from the cases. As such, this guidance can not be regarded as a full-fletched introduction into ICZM, nor does it provide all information one might be looking for on any of the here-treated subjects. It does however give an easy access into the different topics which have been inventorised and made accessible through the OURCOAST database.

A brief comparative study on existing ICZM guidance and guidelines contributed to the format of this guidance and resulted in an overview of related European guidances (see Annex C).

1.3 READING GUIDE

The next chapter gives an introduction into Integrated Coastal Zone Management as a management process. The actual guidance starts in Chapter 3, where tips and tools are provided for each of the three key policy objectives as these have been used in OURCOAST, viz. Adaptation to Risk, Sustainable Use of Resources, and Sustainable Economic Growth. Cases, in which these three policy objectives are combined, are the most integrated cases. Chapters 4, 5 and 6 deal with the guidance for each of these three policy objectives separately (this leads to some unavoidable repetition in the document).

In addition to the policy objectives a number of key approaches have been recognized in OURCOAST. These key approaches refer to a certain “process”, a way to do something (this is further explained in Chapter 2). In each of the next Chapters, a further subdivision is made between these key approaches, with the aim to make this guidance as practical as possible.

As explained, each “tip” in this document is based on the lessons learned from the Analysis which has been carried out on the 350 collected OURCOAST cases. More information and background material can be found in selected Examples which in this report have been included as special links (Ctrl + click in the digital version).

Finally, the following background information can be found in the Annexes:

- A: OURCOAST database
- B: References
- C: Overview of other relevant guidances
- D: Useful funding opportunities

CHAPTER 2 Integrated Coastal Zone Management

2.1 INTEGRATED COASTAL ZONE MANAGEMENT

Integrated Coastal Zone Management (ICZM) emphasizes coordination of policies, sectors, management concerns, development objectives, stakeholders and individual interests. It addresses all three dimensions of sustainability: socio/cultural, environmental and economic. The eight principles of the EU ICZM Recommendation, as mentioned in chapter 1, form the basis for the implementation of ICZM. This Section explains the theory behind ICZM, the experiences and the importance of an integrated approach.

2.1.1 THEORY

OURCOAST classifies three policy objectives into eight themes, covering the content of ICZM. Several processes, listed as key approaches, contribute to accomplish the objectives.

Policy objectives

The strategic policy objectives with the relevant themes and examples of practices are:

- Adaptation to (Climate Change) Risk:
  1. Managing impacts of climate change and safeguarding resilience of coastal systems;
  2. Preparing for, preventing and managing natural hazards and technological (human-made) hazards;
  3. Integrating coherent strategies covering the risk-dimension (prevention to response) into planning and investment.

> Examples: development of offshore windmill parks in the Lithuanian coastal zone, erosion policy options for the Costa da Caparica in Portugal or a Regional Strategic Coastal Monitoring Programme for coastal defense strategies in the UK.

- Sustainable use of resources:
  4. Preserving the coastal and marine environment(functioning/integrity) to share space;
  5. Sharing sound use of resources and promoting their low(est) processes/products.

> Examples: the designation of Marine Protected Areas in Belgium, a permit fee system for reducing nitrogen and phosphorus loads to the sea in Sweden or sediment deposits in coastal areas and their use in Greece.

- Sustainable economic growth:
  6. Developing Europe's regional seas sustainably;

7. Balancing economic, social, cultural development whilst enhancing environment and managing impacts from coastal activities;
8. Improving competitiveness.

Examples: Public-private partnership develops innovative, regional, tourist services, Wieringen The Netherlands, testing the ICZM concept in the "Pays de Brest" France or linking sustainable agriculture and coastal nature to improve local economies in Estonia.

Chapter 4, 5 and 6 contains tips concerning the different policy objectives.

Key-approaches

Six key approaches encourage the accomplishment of the above mentioned objectives:

- Integration ("how is ICZM being organized")
- Participation ("how are stakeholders involved")
- Knowledge-based ("how to use available knowledge")
- Ecosystem-based ("how to consider the whole ecosystem")
- Socio-economic ("how to reach benefits for society")
- Technical ("how to tackle technical problems")

The OURCOAST cases represent all mentioned themes and key approaches. The most frequently applied key approaches are Integration, Participation, and Socio-economic activities. The choice for certain key approaches in your practice depends of course on the objectives of the case. Risk adaptation will often use knowledge-based and technical approaches, while sustainable use of resources and economic growth focus on socio-economic and ecosystem-based approaches. When you face problems with conflicting uses, the integrated and participatory approaches will generally be of greater importance.

Each key approach can contain different specific tools, like economic instruments or climate models. Depending on characteristics of the case under consideration, different combinations of tools and approaches are feasible. For example when you decide to strengthen land protection from sea level rise, technical methodologies and knowledge platforms are possible options.

Tips and tools on the basis of Integration and Participation are provided in chapter 3, covering all objectives. Tips concerning Knowledge-based, Ecosystem-based, Socio-economic and Technical approaches are mentioned in Chapter 4 and further, associated to the specified three key policy objectives.

2.1.2 EXPERIENCES

ICZM is applied in various kinds of projects and programmes. The OURCOAST database contains 350 summaries of ICZM cases (of which 328 fully verified cases) that provide valuable experience for the sustainable management and development of any other coastal zone. The experiences vary from plans about climate adaptation to local economy boosts. The variety of cases is illustrated below:

- *Areas:* The OURCOAST cases are divided into six areas: Europe (land-based practices), Baltic Sea (Germany, Denmark, Estonia, Finland, Lithuania, Latvia, Poland and Sweden), North Sea (Belgium, Germany, Denmark, Netherlands, UK), Atlantic Sea (Spain, France, Ireland, Portugal, UK), the Mediterranean Sea (Cyprus, Spain, France, Greece, Italy Malta, Slovenia) and the Black Sea (Bulgaria and Romania).
- *Costs*: More than half of the OURCOAST cases costs between the 50 thousand and 5 million Euros. Only a minority of the cases is classified either as a very low (< 50,000 EUR) or very high (> 500 M EUR) budget project. Mainly projects concerning Adaptation to Risks fall within the scope of the high budgets. Note that budget estimations are lacking for more than 20% of the cases.
- *Sectors:* Circa a quarter of the OURCOAST cases could be directly linked to the sectors (renewable) energy, ports, tourism, agriculture, aquaculture and fisheries. Also defense, nature and climate were taken into account. More than 75% of the collected cases are cross-sectoral. They focus on the broader perspective of the coast in general.
- *Successes:* The development of integrated spatial plans, coordination of authorities, indicator approaches are definitely success factors of the broad overall perspective. Especially on local and regional level, local participation processes are essential for specific solutions and flexible measures.

The precautionary principle appears to be important for many cases, for example at the start of a monitoring programme to evaluate the impacts of the realized project. According to adaptive management user-friendly applications and representative models should be emphasized as success factors.

Due to the EU frameworks, like Natura 2000 and the Water Framework Directive, natural processes play an important part of ICZM implementation. More attention is paid to the carrying capacity of natural resources, environmental issues and natural processes. Section 2.2 contains the opportunities and restrictions of existing EU policies and legislation.

2.1.3 SYNTHESIS

The OURCOAST cases provide valuable information on the “difficulties”, “strengths” (effective approaches) and “benefits” (positive outcomes) of ICZM implementation in the Coastal Member States. Some of the difficulties can be grouped under one of the eight ICZM principles as these have been listed in Chapter 1.

The cases learn that Integration and Participation are important strengths of ICZM. These key approaches have a clear added value compared to a more conventional sectoral approach. This is particularly the case in situations which demand for innovative solutions and where conflicting interests are present. The OURCOAST cases describe three specific situations which “hinder the implementation of ICZM”: Lack of willingness and interests, lack of harmonized expectations and the unknown benefits of ICZM. The relations between these difficulties, the strengths and benefits (of ICZM are briefly mentioned below.

Lack of willingness and interest
This “difficulty” is related to ICZM-principle 7: support/ involvement and coherence of all relevant administrative bodies to improve coordination of the various existing policies.

Difficulty: Unknown benefits of an integrated approach result in the lack of harmonized interest of stakeholders in some cases at the start of the project, and lack of political willingness. The conflicting interests were sometimes increased by a mistrust in the decision-making process and the operability of the legal framework due to corruption, bureaucracy, and the very slow process of justice.
Strengths: Participation coordination mechanisms, role definitions, better management processes and procedures and the establishment of an independent managing authority for ICZM, are strengths that increase the willingness to implement ICZM.
Benefits: "*Cost-saving*" Exchange of (technical) knowledge and experiences of stakeholders save costs. Instead of repeating mistakes, we can learn from each other's experiences, examples of which are available at the OURCOAST database. Knowledge exchange will also prevent duplication of expensive research or monitoring. Technical expertise and measures will be improved; coastal erosion measures, water management, monitoring programmes.
"*Support and acceptance*" Involvement of stakeholders also increases support for plans and programmes. Cooperation and involvement will prevent long and expensive conflict situations and raise awareness among users.

Lack of harmonized expectations
This "difficulty" is in the cases often related to ICZM-principle 6: creating a platform of acceptance of ICZM by public participation and communication.
Difficulty: Harmonized outcomes and expectations of the different stakeholders are lacking.
Strength: Involvement of stakeholders at the agenda-setting phase, for example to formulate common targets, may avoid this difficulty.
Benefit: "*Marketing opportunities*" Support of stakeholders also creates opportunities for new ideas which can put areas (back) on the map. Large projects with visitor centers, unique protected areas and awards or labels could contribute to a marketing strategy. For example: The Quality Coast Award , Futureland information centre Port of Rotterdam (Netherlands), Blue Flag Programme, Creating identity by a 'green' meat brand en handicraft (Estonia).

Unknown ICZM benefits
Difficulty: The benefits and strengths of ICZM approaches and implementation are unknown to policy makers and stakeholders, especially the financial benefits. Scientific "proof" that an integrated approach yields better results than a sectoral approach is not available and can perhaps never be given under all possible circumstances. Although the OURCOAST cases show how an integrated approach helped to reach success, it is not possible to show what would have happened in case a more sectoral approach was followed.
Strengths: Assessments of environmental cost-benefits, socio-economic studies and the OURCOAST database might tackle this problem.
Benefit: "*Healthy ecosystems and finances*" Use of natural resources will be more sustainable, which has a positive effect on the cost-efficiency in the future. For example; limitations on catch yields result in better fish quality, fish quantity, healthy ecosystem and a positive income, especially on the long-term.

2.2 RELEVENT POLICIES AND LEGISLATION

The Communication of the European Commission on ICZM 'A strategy for Europe', recognized that most EU policies and instruments have impacts on coastal zones. Relevant legislations for each of the three key policy objectives are:

1. Adaptation to Risk: Communication on the prevention of natural and man-made disaster, EU White Paper on the Adaptation to Climate Change, Flood Risk Directive;
2. Sustainable Use of Resources: Marine Strategy Framework Directive, Bird and Habitat Directive, EU Biodiversity Policy, Sustainable Development Strategy (SDS);
3. Sustainable Economic Growth: Directive on Industrial Emissions, Europe 2020, EU Cohesion Policy, Sustainable Development Strategy (SDS), Sustainable Tourism Policy;

The importance and relevance of these EU regulations and policies have been specified in the next Chapters.

Opportunities and restrictions of EU legislation

- *The Strategic Environmental Assessment (SEA) Directive and the Environmental Impact Assessment (EIA) Directive*
  Opportunities: Environmental impacts are recognized and assessed in an early stage of the process. The directives force mitigation and compensation before plans are accepted. SEA is a strategic framework for sustainable development of plans/programmes while EIA functions as a framework for projects.
  Restrictions: Some plans/projects do not require SEA/EIA, so an impacts evaluation not always occurs. Also long-term effects are often reported in the cases as "knowledge gaps" or "future challenges", and are therefore sometimes ignored.
- *The EU Cohesion Policy (2007-2013)*
  Opportunities: Options for funding of mitigation or adaptation to climate change and principles for subsidiary and partnerships.
  Restrictions: To use funding for ecosystem damaging projects.
- *The Integrated Maritime Policy for the European Union (IMP)*
  Opportunity: The policy includes quality standards for sustainability and improvements for management of marine ecosystems, structured stakeholder involvement, integration and coordination of responses to climate change and economic crisis.

- *The Directive Establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)*
  Opportunity: Implementation Rules (IR) on the specific areas of Metadata, Data Specifications, Network Services, Data/Service Sharing and Monitoring/Reporting.

- *The Water Framework Directive (WFD)*
  Opportunity: Couple coastal zone management with catchments basins and marine regions. ICZM could become the instrument to link terrestrial and marine legislation, especially at the Regional Sea Level.

- *The ICZM Protocol*
  Opportunity: Could function as example framework for ICZM. Elements: environmental assessments, planning processes, vulnerability and hazard assessments of natural risk (including climate change) and coastal erosion.

2.3 RELEVANT OTHER GUIDANCES

To stimulate the implementation of ICZM, the European Commission already developed guidance on specific ICZM related topics, like stocktaking, reporting and evaluation (see Annex C for an overview of these). The EU guidance on stocktaking contains key issues on how to develop national stocktaking for ICZM. The European Commission also formulated guidance on national reporting about ICZM in 2005, which has been updated in 2010. This reporting guidance includes a stepwise approach on how to formulate a national report about ICZM implementation. For the ICZM evaluation part, the European Commission formulated the Indicator Guidelines in 2007, based on the DEDUCE project. These guidelines explain why and how to adopt an indicators-based approach to evaluate sustainable development.

Over the last 15 years several researchers and national governments considered effective ways to implement ICZM. Their guidelines and guidances can be found in Annex C.

Compared to the existing guidances on ICZM related matters, this document aims to give tips and tools based on the OURCOAST database, on how to deal in practical terms with ICZM, covering the three policy objectives and for all authorities in the working field.

CHAPTER 3 All Policy Objectives

3.1 INTRODUCTION

In this Chapter, tips are provided on how to strengthen Integration and Participation as key processes in your coastal management and development activities in which a mixture of policy objectives can be identified (adaptation to risk, sustainable use of resources and sustainable economic growth). The tips are based on success and failure factors from cases such as for example:

-Local communities working together with State agencies to plan a sustainable future in Ireland,
-Restoration of important habitats through sustainable agricultural practices in Lithuania,
-Sensitivity mapping of the German Baltic Coast to combat oil spills in Germany,
-Shoreline management conflict resolution for a long accretion coastline with diverse uses in Latvia,
-Integrated management of a marine and terrestrial protected area in Italy,
-Local Agenda 21 initiatives to advance sustainability in a heavily developed tourist centre in Spain

3.2 INTEGRATION

Integration refers to the ways that ICZM is being organized, integrated and implemented across different layers of governance. This will include aspects such as:

- policy integration;
- spatial integration (land-sea, cooperation areas);
- coordination (institutional);
- Inter-regional integration/cooperation;
- inter-sectoral approach;
- inter-strategic approach (Water Framework Directive, Marine Strategy Framework Directive etc.);
- policy coherence; and
- ensuring sufficient human and financial resources and competences.

Depending on the coastal region, international cooperation should be considered. Political willingness, receptiveness to new ideas, coordination and a strong law enforcement or legal framework are often required for a successful integration.

Which sectors to involve

TIP: Consider all sectors during the policy process, so that sector-specific knowledge and new ideas could be included in the plan. Furthermore the acceptance of a plan will be increased when all relevant sectors are involved. It is important to spend some effort in the actual selection of the relevant stakeholders. Involving "everybody" generally does not improve the success of a participative approach.

EXAMPLE: The Thermaikos Gulf is a multi-conflict area: urban, agricultural, tourist and industrial activities co-exist along the coastline, while 3 main rivers and several minor streams, with a catchment area of 50,000 km2 discharge into the Gulf. After following a selective process of relevant stakeholders, it has been possible to formulate suggestions as regards the optimum protection and management of the Thermaikos Gulf in Greece, including the controlling of the waste water treatment plants and the monitoring and management of the mussel farms. *Click here for the case in the OURCOAST Database*

How to coordinate integration

An integrated approach requires three essential steps for the coordination of ICZM.

TIP: Involve all governmental levels in every step of the process. Divide and explain the roles, tasks and responsibilities in advance, because many conflicting economic activities at the coast itself or combined with marine sectors, are often managed by different administrations at several levels.

Step 1: Formulate an integrated plan. Integrated plans are spatial plans, business plans, action plans, management plans, engagement strategies, relevant knowledge, guidelines or good codes of practice. Use such an integrated plan as basis for sustainable development in the area or region.

TIP: Formulate conservation goals in an early stage of the policy process. By doing so, these goals can be reached more easily without losing the original intentions of the initiative or process. Goals should be: Specific, Measurable, Acceptable, realistic and Time-dependant (also known as SMART).

Step 2: Establish a managing authority for ICZM, especially for the long-term. However, this authority should be independent (versus State authority) and have the flexibility and the authorization for negotiation with stakeholders.

Step 3: The authority could design a regional or national strategic plan for improving and maintaining ICZM. A translation of the integrated plan from step 1 towards a strategic plan from step 3 results in more binding power.

EXAMPLE: Institutional coordination agreements between the Directorate General for Coasts and the Autonomous Communities in Spain aim to promote vertical integration in the framework of the Spanish Strategy for Coastal Sustainability The strategy is formulated to tackle the massive and unsustainable occupation of the coastal zone, deterioration of ecosystems, coastal erosion, climate change effects, lack of technical knowledge, uncoordinated decision-making, and lack of public participation in the decision-making. Tools to fulfill the agreements are a Joint Monitoring Commission with representatives from each administration to coordinate initiatives, to analyse the effects, to determine the activities of each administration and to coordinate economic distribution of each administration. The commission meets at least twice a year, just like the Technical Commission, which focuses on environmental, Legal and technical analysis of the activities. During all meetings, stakeholders can be invited to join. *Click here for the case in the OURCOAST Database*.

How to develop a legal framework

TIP: One way to develop a legal framework is by taking an existing Framework into account, e.g. the Water Framework Directive or Natura 2000.

EXAMPLE: European and Greek legislation (Water Framework Directive, Bathing Waters Directive) were the enforcement for the continuation of the monitoring programmes in the Thermaikos Gulf. Due to wastewaters, the Gulf is considered to be one of the most polluted coastal zones in Greece. Besides, the coast host the most productive mussel aquacultures. The quality of the marine environment is a vital issue for the health of people and ecosystems and according to the Water Framework Directive, it is an obligation. *Click here for the case in the OURCOAST Database*.

EXAMPLE: The impacts of the new port infrastructures in a Natura 2000 estuary in France lead to the adoption of environmental compensatory measures, due to the pressure from NGOs and the European Commission. These measures included ecological options and engineering operations such as the construction of artificial islands for birds, the preservation of an important biodiversity site and the restoration of mud-flats. Click here for the case in the OURCOAST Database.

TIP: Also support from a sound (integrated) national, regional or local policy/ legislation/plan/strategy regarding coastal areas might contribute to strong law enforcement. Competing authorities and fragmented policies affecting coastal areas should be prevented.

EXAMPLE: A case about an important wetland in Spain mentions the Natural Resources Zoning Plan (with conservation, improvement and sustainable utilization measures), the Natural Resources Management Plan (to achieve the objectives of the Zoning Plan, specifying the objectives, budget, period, etc.) and the Sustainable Development Plan (integrated plan by a mixed and inter-disciplinary team to coordinate the municipal activities). *Click here for the case in the OURCOAST Database:*

3.3 PARTICIPATION

One of the key differences between a sectoral and an integrated approach is participation. This implies that the interests of all relevant stakeholders are taken into account when decisions are being made in the coastal planning process. However, when the process is truly participatory, rather than consultative, it can be a large task.
Relevant aspects for successful participation are:

- Investing in respectful relationships;
- Sharing information;
- Transparent communication;
- Consensus building and informed decision-making.

The OURCOAST initiative has found many cases that show good examples of participation in practice. The cases show that public participation is more cost-effective and leads to less conflicts between the involved parties. Public participation concerns public collaboration, public input, public involvement, public information and communication with mass media.

Careful planning of public participation is required to raise awareness, increase receptiveness to new ideas and promote sustainable development.

TIP: The OURCOAST Thematic brochure on "Participation Practices in Europe" is dedicated to share experiences and best practices dealing with stakeholder and public participation, one of the key approaches for 'good territorial governance'. It discusses the stakeholder requirements for coastal management, participatory roles in ICZM and is illustrated by practical examples collected throughout Europe.

How to inform and communicate

TIP: Use information centers, websites, cooperate with newspapers, radio and TV in national language to inform citizens about possible coastal changes and public participation.

> EXAMPLE: In Spain a national travelling exhibition on Coastal Management has been carried out to provide citizens with the fundamental concepts on coastal zone management. The initiative is an information, education and social awareness tool. The exhibition includes 5 classrooms in which issues are dealt with in an easy, accessible and attractive way. Appealing and modern formats are used in order to capture the visitor's interest, such as scale models, plasma screens, glass floors with scale models underneath, collages Plexiglas and aluminum scale models, water screens and virtual people. A final summary on the current situation of the Spanish coast was presented by two experts. *Click here for the case in the OURCOAST Database.*

TIP: Take every stakeholder serious and be open for communication. Communicate in a simple non-technical, joint language.

TIP: Inform and communicate in an effective way, involving local authorities and preventing tension with the public e.g. farmers, tourism sector and the local community.

> EXAMPLE: The main coastal communication tools for a communication platform project in Latvia were developed in order to support coastal sustainability awareness-raising and active involvement. Via information materials like newsletters and diverse media publications with quarterly amendment updates, thematic coastal sustainability booklets and a web page with different information data banks. Furthermore series of education activities including seminars/trainings for various audiences and ongoing work to establish an eco-school e.g. school classes and coastal projects, eco-summer camps for regional schools and local experience-exchange workshops. Conflict resolution issues were also targeted, stressing the involvement of active citizens and all formal and non-formal citizen groups. *Click here for the case in the OURCOAST Database:*

How to set up the participatory group

TIP: point out a contact person; strong effective project leaders who play a key role in the ICZM process.

TIP: The first contact with stakeholders is important; an explanation of rationale of public participation is required.

TIP: Spend enough effort in keeping the group engaged throughout the whole process (not only during start-up or finalization) and be alert on signs of reduced interest with the group members.

TIP: See if it is possible to use already existing networks to form public participation groups. This can also be an important to avoid an overkill of participation groups (fatigue) on a variety of (often related) subjects.

TIP: A homogeneous background of stakeholders (same views, education, and language) ads that stakeholders are often inclined to share their opinions with each other, more lively and open discussions, contributes to an informal atmosphere.

TIP: Consultation and involvement with key sectoral stakeholders who identified specific strategic issues for their sector/wide-range of stakeholders from both the public and private sector and on all administrative levels. When unselected stakeholders are willing to join in the policy process, let them join in public sessions for example.

> EXAMPLE: Again the National Reserve of the Santoña-Noja Marshes in Spain, which is protected by several administrative bodies and shared between 11 municipalities with the consequent anthropogenic pressures. The Board of Trustees (BoT) is an administrative body to ensure the participation of all the relevant actors in the decision-making process. The BoT Plenary meets, at least once a year and as many times as necessary to achieve the assigned tasks. The Working Groups meet as much as needed to fulfill their tasks. The issues they deal with: planning, active management, basic management, public use and socio-economic development. The meetings strictly follow the agenda and a debate between the Trustees is promoted after each issue exposition to achieve a more participatory and consensus-based result. Amongst the documentation provided in the meetings is a questionnaire to make proposals for DG Biodiversity; these proposals are prioritized and ranked depending on the interest, budget availability or compatibilities with the aims of the Park. A factor that was helpful in achieving the objective was the existence of a legal framework (laws) promoting the integration, coordination and the creation of BoT in all the Natural Parks. *Click here for the case in the OURCOAST Database*.

How to involve stakeholders

TIP: Involve all stakeholders (also local communities) from the start to formulate common goals and joint planning. Relevant input will be given at relevant time steps and the expectations of the stakeholders will be harmonized. This way the reasoning behind decision-making can be clearly explained with local residents and communities helping to shape their future and to adapt to changing conditions.

> EXAMPLE: Public Participation aids waterfront regeneration in Scotland. The regeneration work will begin with an environmental clean-up. This work will involve collaboration with local businesses e.g. the oil and gas industry, environmental agencies, Scottish Natural Heritage and coastal ecologists and educators. The local community was embraced from the outset by hosting a number of practical workshops that explore the potential for local input e.g. local knowledge, expertise, and experience knowledge into the proposals. *Click here for the case in the OURCOAST Database:*

TIP: Start up focus groups. A focus group is generally a planned discussion among a group of six to eight people on a specific topic which lasts one to one and a half hours. In a relaxed atmosphere and with the guidance of a moderator, a group share their ideas and perceptions. The group members influence each other by responding to the ideas and comments of others. For the participants this methodology offers an excellent possibility to

learn from the experience of the other group members. The advantages of the group setting are that it is possible to obtain information more quickly because people can use the ideas of others to express their own opinion more clearly and information obtained is by social interaction.

EXAMPLE: In the Emajõgi river basin (Estonia) nine focus groups were used as a means of bridging the gap between major stakeholders concerning decisions of river basin management. The focus groups helped to collect public input into developing solutions of water management problems. They proved to be an effective approach that could be used especially at the planning stage to collect opinions of stakeholders about major issues in a river basin. *Click here for the case in the OURCOAST Database*.

EXAMPLE: The International Commission for the Protection of the Rhine (ICPR) is the operational body and is responsible for international co-ordination. The conference of Rhine Ministers takes decisions related to important political questions and provides the basis for coherent, complementary programmes of measures. Decisions are taken in annual plenary sessions. Working groups and expert groups with defined tasks work on all technical questions arising from the implementation of the convention on the protection of the Rhine and from European legislation. *Click here for the case in the OURCOAST Database.*

TIP: Develop coastal partnerships and multi-stakeholders platforms.

EXAMPLE: In the United Kingdom over sixty voluntary coastal partnerships have developed over the last twenty years and many provide excellent opportunities for public participation at the local level. The coastal Partnerships are formed from different groupings of government agencies, local authorities, private sector organizations and interested bodies working on coastal issues. Such partnerships are well placed to address the main requirements of stakeholders in relation to ICZM on local level as well as developing strong relationships and diverse networks with community user and stakeholder groups. *Click here for the case in the OURCOAST Database.*

EXAMPLE: The Wash estuary (United Kingdom) is shared by two sub-regional local authorities, Lincolnshire and Norfolk. A broad-based partnership has drawn up, by consensus, a management plan. The partners represent national and regional government and local authorities together with relevant stakeholders. Generally, there is a strong sense of achievement felt al local level with some important breakthroughs that will focus action and delivery on important social outcomes. There is now better dialogue, joint planning and more holistic policies. *Click here for the case in the OURCOAST Database.*

EXAMPLE: In the region Wieringen (The Netherlands) local people and entrepreneurs formed themselves into a Foundation to develop new services in the region. Its members receive support from a board and develop activities on a voluntary basis exemplifying the bottom-up approach. The Foundation has co-operated successfully with the Wadden Sea Foundation and its regional 'Wadden gold label' to help further promote and develop local products. It has also developed a number of activities related to the promotion of local products and tourism services to visitors. *Click here for the case in the OURCOAST Database.*

TIP: Voluntarily, contractual agreements and commitments of stakeholders are required, mainly on the long term. Keep stakeholders informed and involved in coastal management.

EXAMPLE: An agreement between several Administrations has been signed to ensure co-operation for the development and increase the value of the tourism activity in a mature Balearic tourist destination in Spain. A website for the Urban Consortium has been created to make all the related information available to any interested person, there are several workshops with hotel owners, commercial offers, etc. and both the Plan for the restoration of the tourist infrastructures and the Plan have been distributed among all actors. Several discussion sessions are carried out to achieve consensus-based proposals. *Click here for the case in the OURCOAST Database.*

How to coordinate public participation

TIP: A good moderator or chairman is necessary to coordinate the participatory process. A way to coordinate participation is via a citizen's jury, consisting of randomly selected citizens, who discuss, examine information and question witnesses. The initial selection of participants is of key importance to achieve a high commitment of stakeholders and to achieve the best results. The citizen's jury allows the participants to learn in depth about a number of issues, relevant for the public. Finally, the jury presents their recommendations. An important aspect of a citizen's jury is that it promotes political dialogue aimed at mutual understanding. Mutual understanding does not mean that people agree, but that they will be motivated to resolve conflicts by arguments.

EXAMPLE: In the Emajõgi river basin (Estland) a citizen's jury took place for two days with the participation of 14 randomly selected people. Before the jury, one pre-meeting also took place. The participants listened to presentations of witnesses from different sectors and stakeholder groups involved on the different issues The aim was to give an overview of the problem from different and even conflicting interests and organizations. After each presentation, the participants had an opportunity to put questions and give their own concerns and arguments. They then worked in groups to compile one page of recommendations. *Click here for the case in the OURCOAST Database*.

TIP: Create trust between stakeholders and authorities via transparent procedures and realistic expectations. Also enhance interactions with involved authorities.

EXAMPLE: The way the Donegal County Council in Ireland has developed her role in coastal development, results currently in a trusted relationship with her stakeholders. This is due to a co-operation for more than a decade and the more holistic approach for coastal development they have applied. Recently the Council has taken a proactive role in developing sectors that may contribute to addressing unemployment, in particular, marine and coastal recreation, tourism development and value-added food processing. Furthermore the Council co-operates informally with stakeholders. *Click here for the case in the OURCOAST Database*.

TIP: Explain roles and responsibilities of stakeholders. Decide in which stages which stakeholders could play a part. Public sessions could be open for every stakeholder, while expert meetings or focus groups are only meant for a specific group. Again, inform all stakeholders about the outcomes of these meetings.

EXAMPLE: In the Netherlands, a plan was drawn up to prevent the risk of flooding along the Rhine river, and its tributaries, to the year 2100 taking climate change factors into consideration. In order to maintain safety, yet create environmental and social benefits, a Strategic Environmental Assessment was integrated into the planning process. Public participation took place during both the early stage of planning and at a later stage. A first round focused on the information the SEA should contain, e.g. what alternatives to examine and what impacts to assess. A second round took place after the SEA and the draft plan were ready and focused on the quality of the SEA and the proposals in the draft plan. The responsible ministries also took a very open, transparent and participative approach to the development of the plan from the start. *Click here for the case in the OURCOAST Database*.

How to cooperate with neighboring regions

Cross-border cooperation between adjacent regions helps to develop cross-border social and economic centres. The formulation of common development strategies is a key element to success. Transnational cooperation can be complex because of unknown situations and language barriers.

TIP: Understanding natural processes, such as sediment movements or ecologic feedback mechanisms, and their influence on the socio-economic situation in different regions (fishery, agriculture, and tourism) is important for the development of an interregional integrated plan. In many situations, such physical understanding requires the input from acknowledged experts. This is particularly true in estuary type of coastal environments.

TIP: Stimulate innovative and creative discussions by minimizing the lack of knowledge about other situations in cooperating regions.

EXAMPLE: In the North-Livonia a Transboundary Master Plan was developed in 2006. The next steps were coherent policy, joint services, products and infra-structure for sustainable tourism development in the coastal region, involving neighboring regions and promoting private-public partnerships. Latvia and Estonia continued by forming a Transboundary Steering Group. The activities involved planning local infra-structure, ecological restoration, eco-tourism and setting up a cross-border monitoring system to manage transboundary RAMSAR areas. Click here for the case in the OURCOAST Database. Click

CHAPTER 4

Risk Adaptation

4.1 INTRODUCTION

The aim of this chapter is to illustrate the benefits of an ICZM approach in the process to adapt to (climate related) coastal risks. A number of practical tips are provided for the following four key approaches: Knowledge-based, Ecosystem-based, Socio-economic and Technical. Relevant tips related to the approaches Integration and Participation can be found in the previous Chapter 3. The tips and success factors are derived from circa 250 OURCOAST cases on risk adaptation, for example:

-Changing traditional coastal defence policy to stop erosion in Denmark,
-Working with Nature - soft protection interventions in a barrier-island lagoon in Portugal,
-Changing policy to halt the effects of beach erosion and to stimulate tourism in Poland,
-Protecting the coast from erosion using hard rock measures in Bulgaria,
-Improved water resource management in areas with acute water shortage in Malta,
-Renewable energy by harnessing tides in Northern Ireland.

Some existing EU policies and legislation contribute to the implementation of ICZM. The Communication on the prevention of natural and man-made disaster, the EU White Paper on the Adaptation to Climate Change and the Flood Risk Directive, create opportunities to achieve the policy objective 'Risk Adaptation '. The additional values and opportunities of these EU policies are mentioned below.

4.2 KNOWLEDGE BASED APPROACH

The knowledge-based approach refers to the types of knowledge that are available for ICZM decision-makers. This will include aspects such as:

- assessment/ evaluation;
- evolving with scientific knowledge;
- indigenous and local knowledge;
- language and comprehension;
- fragmentation of knowledge.

How to share information

The exchange of knowledge and information will save costs and raise awareness of stakeholders. A project could be built on experiences from other projects, e.g. the methods used and other practical advice. OURCOAST is an example on how to share existing experiences.

TIP: make information on experiences:

- Quantitative, or at least with some quantitative data;
- Sufficient and relevant;
- Consistent, excluding knowledge gaps and complex matters;
- Include local inputs. Locals can provide specific solutions and flexible measures;
- Clear and understandable with a good scientific basis;
- Centralized e.g. access to project outcomes via a user-friendly database or website, the OURCOAST database may help: http://ec.europa.eu/ourcoast/;
- Transferrable e.g. for educational purposes and knowledge spreading. Appropriate training and education would be the next step;
- Followed-up, this means that the database must be kept up to date. Data management maintenance needs must be recognized, including budget and responsibilities.

EXAMPLE: A communication strategy was developed in Germany to inform inhabitants about the risks of flooding, to raise awareness of the public and decision-makers. A strategy and exhibition was developed based on literature, best practices and user feedback. A booklet was produced, which met the needs of the people and stimulated them to think about flood risks. Feedback from potential users added to the literature and best practice analyses on how to convey information on the target groups, and how to design the information material. *Click here for the case in the OURCOAST Database*.

EXAMPLE: One of the existing, operational Coastal Information Systems in Europe is the Coastal Atlas (Belgium), which contains information and map material on different coastal aspects. This on-line communication tool collects diverse and complex information about the coast from a wide range of sectors, and presents it in an attractive and easy to use way. By including analysis and visualization tools and policy information it can be used as a simple policy supporting tool. *Click here for the case in the OURCOAST Database.*

EXAMPLE: The purpose of the Coordination Unit in Denmark is to coordinate national-level research activities on adaptation to climate change; to facilitate research synergies and identify knowledge gaps; to support transfer of knowledge to collate authoritative data on climate change and its impacts; and to foster national and international networks. It will thus coordinate research across the many research centres working with climate and also ensure updated data on the future climate. The key task is to develop and maintain a database of on-going research activities in Denmark and Europe. This database is geared to find synergies between and gaps in current research activities. At first this database will be for internal use only; however, this may later develop into a web-based application. *Click here for the case in the OURCOAST Database.*

Which European tools to take into account

The Flood Risk Directive steers to execute a *preliminary assessment* by 2011 to identify the river basins and associated coastal areas at risk of flooding. For risk zones countries need to draw up *flood risk maps* by 2013 and establish *flood risk management plans* focused on prevention, protection and preparedness by 2015. These tools could be taken into account to achieve the adaptation to risk objectives.

EXAMPLE: Europe initiated the development of the European Flood Forecasting System (EEFS) based upon the Delft-FEWS flood forecasting platform. The data management platform of the EFFS has been equipped with generic tools providing a variety of data handling tasks, such as data

validation, interpolation, aggregation and error correction in forecasts, including a variety of visualization and forecast dissemination options, to increase the warning time of a potential flood event and to standardize different operational flood warning systems. *Click here for the case in the OURCOAST Database.*

The EU White Paper on Climate Change established a *Clearing House Mechanism* as an IT tool and a database on climate change impacts and best practices, which contains useful information for risk adaptation.

The EC Communication on the prevention of natural and man-made disaster provides guidelines on the development of *knowledge-based disaster prevention policy* for all governmental levels. The guidelines stimulate stock-taking on disaster information, exchange of best practices, risks mapping and research activities.

EXAMPLE: A case in Greece mentions that the estimation of the risk of coastal flooding and flood hazard maps are essential for the successful implementation of a range of flood hazard mitigation measures (such as land use regulation, insurance, emergency measures and assessing damage potential) and are also important in controlling future development in hazardous areas. They may also help in informing the public, raising flood awareness and motivating mitigation activity. Flood hazard maps for coastal areas provide the residents of the selected regions with information on the range of possible damage and the disaster prevention activities and are used as a tool to establish a warning and a possible evacuation system. They are also used for planning purposes, to inform decisions regarding where to locate new developments (spatial planning). *Click here for the case in the OURCOAST Database.*

4.3 ECOSYSTEM BASED APPROACH

The ecosystem-based approach refers to the application of a management system that is based upon an integrated, science based approach aiming to sustain the health, resilience and diversity of whole ecosystems while allowing for sustainable use by humans of the goods and services these ecosystems may provide (ecosystem services). This includes aspects such as:

- Integrated management;
- Equitable use of resources;
- Promotion of conservation;
- Cultural diversity;
- Sediment management; and
- Adaptive management enforcement.

The analyses of the OURCOAST cases show that sustainable development is an important success factor for 96% of the studied cases. The combination of socio-economic development and nature conservation turned out to be very successful.

TIP: Restoration of natural processes through an integrated approach, for example coastal erosion, sediment balance etc. Also consider eco-technologies to reduce damage to ecosystems.

EXAMPLE: As a relatively new type of technology it is still in a process of development and its application examples from Europe are only recent. In that respect, the extensive research and innovation programme called “Building with Nature”, executed under the supervision of the foundation “Ecoshape”, is an example of continued research aiming for ecodynamic development and design. *Click here to go to the website.*

TIP: Consider the land and water management tools ‘Green and Blue infrastructure’. Connectivity of ecosystems, their protection and the provision of ecosystem services, while addressing mitigation and climate change, is strongly promoted in Europe under the name “Green and Blue Infrastructure”. The “Green Infrastructure” is a land management tool which contributes to minimizing natural disaster risks by using ecosystem-based approached for coastal protection through marshes/ flood plain restoration rather than constructing dikes. The “Blue Infrastructure” is based on rivers, lakes, ponds and grassland strips along these rivers, lakes and ponds.

EXAMPLE: Malmö (Sweden) is using blue and green infrastructure e.g. roof gardens and innovative surface water systems to meet the needs of neighborhood communities faced with the challenges of future climate effects. The community is looking at innovative ways of using the roof gardens for food production. Bee-keeping is one example cashing in on the longer flowering season of city gardens. *Click here to go to the case in the OURCOAST Database.*

EXAMPLE: A network of European partners facilitates the much needed exchange of knowledge and experience and the actual transfer of good practice on climate change adaptation strategies to local and regional authorities. The network represents a spectrum of municipal authorities, with various climate change challenges, all with varying degrees of strategic policy and experience. *Click here to go to the case in the OURCOAST Database.*

Which European tools to take into account

The Strategic Environmental Assessment (SEA) Directive and the Environmental Impact Assessment (EIA) Directive recognize and assess environmental impacts (correlated with natural processes) in an early stage of the process. The directives force mitigation and compensation before plans are accepted. SEA is a strategic framework for sustainable development of plans/programmes while EIA functions as a framework for projects.

EXAMPLE: Denmark has a statutory procedure for the conduction of Strategic Environmental Assessment (SEA) which includes a checklist of ’headline’ questions for screening whether or not a bill or governmental proposal should be subjected to an SEA. The checklist also includes sub-questions which are used in determining the scope of the environmental assessment. *Click here to go to the case in the OURCOAST Database.*

EXAMPLE: The National Water Institute of Portugal used a Strategic Environmental Assessment (SEA) to closely assist the preparation of the Portuguese Strategy for Integrated Coastal Zone Management). The SEA proved to act as a facilitator to enable the full integration of environmental and sustainability issues into the strategy development process, including identification of objectives, agenda setting, concept of the strategy and design of the implementation measures. SEA enabled the consideration of key strategic options to fine tune the strategy, and highlighted risks and opportunities

associated with the strategy, proving, in the end, to have strongly influenced the ICZM strategy. *Click here to go the case in the OURCOAST Database.*

4.4 SOCIO-ECONOMIC APPROACH

The socio-economic approach refers to benefits that accrue to society and to the economic development of that society as a result of the ICZM approaches taken. These benefits will, generally, have been determined in advance of the work being conducted and the potential results factored into the methodology used. This includes aspects as sustainable tourism, sustainable agricultural practices and will more widely embrace reducing market distortions; enhancing cultural diversity and natural heritage; ecosystems services and funding mechanisms.

TIP: The OURCOAST Thematic brochure on "Socio-Economic Benefits from ICZM" is dedicated to share experiences and best practices dealing with the socio-economic benefits of ICZM. It discusses the benefits throughout a range of sectors and activities in coastal management, what is needed to improve and implement and is illustrated by practical examples collected throughout Europe.

How to save costs

TIP: Decide in an early stage of the process upon financial responsibilities for the different involved parties. Consider durability of the finances, including follow-up finances and finances beyond the project scope. These actions will prevent unexpected financial struggles during the course of the coastal initiative.

TIP: Execute socio-economic analysis: cost-benefit analysis or contingent-valuation methods from a multi-sectoral perspective instead of a sectoral perspective to increase environmental awareness.

EXAMPLE: A political decision was made to protect ruins on a cliff-face with a hard sea-wall in Poland. When other economic factors (tourism) would not have been considered, this solution would be ten times cheaper than re-locating the ruins elsewhere. A Multi-Criteria Analysis indicated the most suitable option. The essence of a multi-criteria analysis is the application of various evaluation criteria of individual variants whose evaluation units are points, allocated in the least arbitrary way. These points substitute monetary units in the evaluation of the expenditures when the benefits and losses are not directly known. It allows benefits and losses which are difficult to measure in strict monetary values to be included in a more objective assessment. The study shows that decisions based solely on short-term economics, however well meant, may not lead to the optimal solution. *Click her for the case in the OURCOAST Database.*

TIP: Take cost-effectiveness of new measures, low maintenance costs and financial self-sufficiency of measures into account for a positive financial balance.

TIP: Learning by doing, the exchange of experiences will reduce the costs of required research on innovative techniques and potential impacts.

EXAMPLE: With help of a pilot project the coastline of West Jutland (Denmark) new hard and soft techniques were researched to prevent erosion with limited effects elsewhere. This case highlights there was flexibility in trying to do something new and untried to remedy a century old problem. A specially built vessel is used to draw in sand from the sea bottom ca. 5-10 km from the coast and transport it to the coast where it is coupled to a large rubber hose, after which the sand is pumped offshore onto a sand bar or onto the beach itself. The Danish Coastal Authority studied for a few years the sand transport. *Click here for the case in the OURCOAST Database*.

4.5 TECHNICAL APPROACH

The technical approach is mainly used in cases related to adaptation to risks. Methodologies to understand complex coastal behaviour and to design and implement technical measures are an essential part of this approach.

TIP: The OURCOAST Thematic brochure on "Information and Technology in ICZM" is dedicated to share experiences and best practices dealing with the technology and knowledge applied in ICZM. It discusses the benefits throughout a range of sectors and activities in coastal management, what is needed to improve and implement and is illustrated by practical examples collected throughout Europe.

Which technologies to use

TIP: Use models to understand processes, to improve the understanding of complex coastal issues and to decide about the best suitable measures e.g. decision support tool, ecosystem good and services, indicator approaches and climate change models. The understanding of physical phenomena can prevent unforeseen (often negative) outcomes.

EXAMPLE: Models were used to execute a storm flood risk assessment and recommendations for a typical Wadden sea island in Denmark. Scenario definitions were necessary to determine resulting flooding, thus the number of breaches at the same time, their location, and dimension as most important parameters. The flood simulation was based on calculations using a reservoir cascade model and a GIS description of the flooded area, leading to a rough scale of water depths and its impact on threatened objects. *Click here for the case in the OURCOAST Database.*

EXAMPLE: Detailed risk assessment studies were done for the sand barrier island Langeoog and the north western part of mainland East Frisia bordering the Wadden Sea and the mouth of the river Ems (Germany). The results were discussed with regional and local experts and adequate feedback was used to feed into the model. Several recommendations resulted from the study, however, stating uncertainties. The results can be used for evacuation plans and to develop long-term plans of integrated development. *Click here for the case in the OURCOAST Database.*

TIP: Use existing databases and data pools to exchange information. There is a large variety of so-called Coastal Information Systems operational in many Coastal member States, which can be used.

EXAMPLE: Existing cross-sectoral data from the North and Baltic Seas were integrated into one metadata base using existing data pools in Germany. The project team defined a metadata standard for the coastal zone and developed a corresponding editor for the internet. The database was based

on existing structures and developed involving users and data providers from coastal protection, water management, environmental protection, waterway engineering, and science. The standardized metadata improve data exchange between institutions and ease the presentation of data to the public. Since the data base is accessible via internet using open source, software data provision is easy. Maintenance, development and inclusion of future data sets, GIS-files, related reports and publications is enhanced. For more information check the OURCOAST database on 'NOKIS'. *Click here for the case in the OURCOAST Database.*

TIP: Use innovative techniques. Innovation is a key factor in modern policy, which has resulted in numerous innovative approaches to a variety of coastal problems or challenges. Before applying standard technology, it is often beneficial to find out about the latest related innovations.

EXAMPLE: A strategy towards a softer approach in defending the coastline and converting hard structures into gravel beaches has been developed in Italy. At Marina di Pisa this strategy prevents offshore dispersion of sediments, reducing wave reflectance, whilst it provides a gradual return to a more natural coastal landscape. Gravel beaches occurred to be particularly adequate for urbanized areas strongly protected with hard structures. Due to their high efficiency and lower costs, they are also an alternative when mass tourism needs to be redirected away from more environmentally sensible beaches. Marina di Pisa returned to have a beach again after many decades, and many of the local people are now re-using the area. *Click here for the case in the OURCOAST Database.*

TIP: Develop monitoring plans to monitor future impacts. In the last decades more effort has been made to understand and integrate natural processes in ICZM, especially the ones supported by existing EU frameworks e.g. Natura 2000, Environmental Impact Assessments and the Strategic Environmental Assessments.

TIP: The set-up of a monitoring programme can be defined as a success factor to follow-up and investigate the impacts in the future with the aim to implement the results in future projects and so contributing to the long term perspective of good management. A standard and repeatable approach is required.

EXAMPLE: UK carries out long-term monitoring programmes to provide up-to-date, relevant information in a format that can be understood by coastal managers to implement shoreline management. Long-term local coastal monitoring programmes have demonstrated considerable cost-savings, allowing greater confidence in efficient design of coastal works. *Click here for the case in the OURCOAST Database.*

EXAMPLE: In a situation when long-term monitoring programmes are missing, a good solution is a partnership between a local planning authority and a university research centre. In Ireland such partnership approach allowed tailored studies to be carried out by the research centre for the local authority. The authority in turn will use this evidence to make more sustainable erosion management decisions. *Click here for the case in the OURCOAST Database.*

Which European tools to take into account

As part of the actions included in the White Paper on Climate Change, Water Directors of EU Member States adopted in December 2009 a Guidance document on adaptation to climate change in water management to ensure that the River Basin Management Plans (RBMP) are climate-proofed. The guidance from this initiative can be consulted for climate change issues.

CHAPTER 5 Sustainable Use of Resources

5.1 INTRODUCTION

The aim of this chapter is to inform about the benefits of an ICZM approach for those who are seeking solutions within the policy objective "sustainable use of resources". Tips will be provided for four key approaches: Knowledge-based, Ecosystem-based, Socio-economic and Technical. Tips for the approaches Integration and Participation can be read in Chapter 3. The tips and success factors are derived from circa 300 OURCOAST cases, for example:

-Incorporating archaeology in coastal urban planning, Pafos coast in Cyprus,
-Managing rare and threatened species in an area of high tourist activity – Zakynthos in Greece,
-Strategies of uses of resources in Bay of Mont Saint-Michel and ICZM consequences in France,
-Handbook for integrated maritime spatial planning in Romania,
-Linking research and education to raise societal awareness about sustainability in Spain,
-A Port Authority and Environmental NGO collaborate to conserve nature during port expansion in a Natura 2000 area in Belgium

Some existing EU policies and legislation contribute to the implementation of ICZM. The Marine Strategy Framework Directive, Bird and Habitat Directive, EU Biodiversity Policy and the Sustainable Development Strategy (SDS) create opportunities to achieve the policy objective 'sustainable use of resources '. The additional values and opportunities of these legislations are mentioned in the related approaches below.

5.2 KNOWLEDGE BASED APPROACH

The knowledge-based approach refers to the types of knowledge that are available for ICZM decision-makers. This includes the same aspects as listed in Section 4.2 Tips and tools related to knowledge are derived to stimulate adaptive management during a gradual process and a solid scientific basis for sustainable use of resources.

How to share information

The exchange of knowledge and information will save costs and raise awareness of stakeholders. A particular project could be built on experiences from other projects, e.g. the methods used and other practical advice. Several requirements play a role in information sharing. Information on experiences should be:

- Quantitative, or at least with some quantitative data;
- Sufficient and relevant;
- Consistent, excluding knowledge gaps and complex matters;
- Include local inputs. Locals can provide specific solutions and flexible measures;

- Clear and understandable with a good scientific basis;
- Centralized e.g. access to project outcomes via a user-friendly database or website, the OURCOAST database may help: http://ec.europa.eu/ourcoast/;
- Transferrable e.g. for educational purposes and knowledge spreading. Appropriate training and education would be the next step;
- Followed-up, this means that the database must be kept up to date. Data management maintenance needs must be recognized, including budget and responsibilities.

Furthermore the use of social perception studies can sometimes help to identify the needs and ideas of the public or involved stakeholders.

EXAMPLE: The status of catchment and coast of the Elbe River (Denmark) were described and impacts of activities on each other and especially of eutrophication on the socio-economic and natural environment calculated. A major challenge in the project was the cooperation between quantitative models and qualitative social science research. The project design forced a strong quantitative research focus, which implied working with sometimes over-simplified system descriptions in models. *Click here for the case in the OURCOAST Database.*

EXAMPLE: At the Mareness-Oléron Pays, located on the marine front of west France, a method, which was applied to create a new dynamic process among stakeholders and allows, at the same time, a better coordination of actions whilst taking into account the issues of sustainable development. The approach has relied on (1) a common bibliographical data base; (2) indicators of sustainable development which might be structured by a Sustainable Development Observatory, to allow follow-up and coordinated planned actions. This initial common work was also designed to give an educational and awareness tool to the stakeholders (especially the local elected representatives) as regards the long-term impact of selected actions. *Click here for the case in the OURCOAST Database.*

5.3 ECOSYSTEM BASED APPROACH

The ecosystem-based approach refers to the application of a management system that is based upon an integrated, science based approach aiming to sustain the health, resilience and diversity of whole ecosystems while allowing for sustainable use by humans of the goods and services these ecosystems may provide. This includes the same aspects as listed in Section 4.3.

How to address the added value of sustainability

Sustainable development should have added value for socio-economic sectors and nature. In 69 of the 72 related OURCOAST cases where sustainable development played a part (22% of all cases), it turned out to be successful for all sectors.

EXAMPLE: In Ireland the management of marine environments on a cross-border basis for both conservation and development interests on an ecosystems-basis despite conflicting jurisdictions and political uncertainty is achieved through a dedicated management agency with specified legal responsibilities. Traditionally marine and coastal management is based on political boundaries where as in this instance both sea loughs are managed as geographic entities transcending standard

management structures. In relation to management of the fisheries resource, approaches are sufficiently flexible to adapt to changing environmental conditions and in this way can take the precautionary approach into account.

TIP: To be able to assess the level of success, it is required to have a clear long term perspective of the benefits.

EXAMPLE: The fishing industry in Lithuania has deep-rooted traditions. The main aim of the case was to address the incompatibility of the fishing efforts and the existing fishing rights, the insufficiency of income derived from the fishing activity to ensure business profitability, a need to modernize the obsolete Lithuanian fishing fleet. The Lithuanian government therefore restructured the entire coastal business sectors, following the long term perspective (precautionary principle). *Click here for the case in the OURCOAST Database.*

TIP: Consider the land and water management tools 'Green and Blue infrastructure'. Connectivity of ecosystems, their protection and the provision of ecosystem services, while addressing mitigation and climate change, is strongly promoted in Europe under the name "Green and Blue Infrastructure". The "Green Infrastructure" is a land management tool which contributes to minimizing natural disaster risks by using ecosystem-based approached for coastal protection through marshes/ flood plain restoration rather than constructing dikes. The "Blue Infrastructure" is based on rivers, lakes, ponds and grassland strips along these rivers, lakes and ponds.

EXAMPLE: Malmö (Sweden) is using blue and green infrastructure e.g. roof gardens and innovative surface water systems to meet the needs of neighborhood communities faced with the challenges of future climate effects. The community is looking at innovative ways of using the roof gardens for food production. Bee-keeping is one example cashing in on the longer flowering season of city gardens. *Click here to go to the case in the OURCOAST Database.*

EXAMPLE: A network of European partners facilitates the much needed exchange of knowledge and experience and the actual transfer of good practice on climate change adaptation strategies to local and regional authorities. The network represents a spectrum of municipal authorities, with various climate change challenges, all with varying degrees of strategic policy and experience. *Click here to go to the case in the OURCOAST Database.*

Which European tools to take into account

The Strategic Environmental Assessment (SEA) Directive and the Environmental Impact Assessment (EIA) Directive recognize and assess environmental impacts (correlated with natural processes) in an early stage of the process. The directives force mitigation and compensation before plans are accepted. SEA is a strategic framework for sustainable development of plans/programmes while EIA functions as a framework for projects.

Article 6.3 of the *Habitat Directive* states that any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to *appropriate assessment* of its implications for the site in view of the site's conservation

objectives. This article is also applicable to Special Protected Areas (SPA's) designated under the *Birds Directive*.

According to the *Marine Strategy Framework Directive* (MSFD), the marine strategies to be developed by each Member State must contain a *detailed assessment of the state of the environment, a definition of "good environmental status" at regional level and the establishment of clear environmental targets and monitoring programmes*. Recently the criteria and methodological standards on good environmental status of marine waters have been formulated (Commission decision of 1 September 2010 - 2010/477/EU).

Corporate Social Responsibility (CSR) is an opportunity for enterprises to combine economic, social and environmental objectives. The EU has also made progress in mainstreaming the *Sustainable Development Strategy* agenda into its external policies, for example through *Sustainability Impact Assessments* carried out in the context of the preparation of Free Trade Agreements and work on climate change.

The *Action Plan on EU Biodiversity Policy* can help to preserve coastal and marine environment, habitats and species. The Biodiversity Action Plan addresses the challenge of integrating biodiversity concerns into other policy sectors in a unified way. It specifies a comprehensive plan of priority actions and outlines the responsibility of community institutions and Member States in relation to each. It also contains indicators to monitor progress and a timetable for evaluations. The European Commission has undertaken to provide *annual reporting* on progress in delivery of the Biodiversity Action Plan.

5.4 SOCIO-ECONOMIC APPROACH

The socio-economic approach refers to benefits that accrue to society and to the economic development of that society as a result of the ICZM approaches taken. These benefits will, generally, have been determined in advance of the work being conducted and the potential results factored into the methodology used. This includes the same aspects as listed in Section 4.4.

TIP: The OURCOAST Thematic brochure on "Socio-Economic Benefits from ICZM" is dedicated to share experiences and best practices dealing with the socio-economic benefits of ICZM. It discusses the benefits throughout a range of sectors and activities in coastal management, what is needed to improve and implement and is illustrated by practical examples collected throughout Europe.

How to save costs

Economic measures are needed for achieving socio-economic benefits by providing guidance for decision-making. The instruments are valuable for sound use of resources and to improve competitiveness.

TIP: Execute socio-economic analysis: cost-benefit analysis or contingent-valuation methods from a multi-sectoral perspective instead of a sectoral perspective to increase environmental awareness. The execution of a coast-benefit analysis at the start of a project helps allocating the budget in a more efficient way.

EXAMPLE: for the Danuba Islands in Bulgaria, cost-benefit analysis was used to provide guidance for decision-making on sustainable management and to provide a basis for the monitoring of socio-economic impacts of land-use changes. The analysis provided an economic case for changing the previous policy of expanding poplar plantations on the Danube islands. It indicated that profits from poplar plantations should be raised through improved management of the existing ones, as well as through the exclusion from production of areas identified as unsuitable for poplar forestry which were causing economic loss. Recommendations were made to protect and restore natural forests, to introduce sustainable forestry practices with extensive management of close-to-natural forests, and to develop a basis for tourism and recreation on the Danube islands. Click here for the case in the OURCOAST Database.

TIP: Take cost-effectiveness of new measures, low maintenance costs and financial self-sufficiency of measures into account for a positive financial balance.

EXAMPLE: In the Odense River Basin (island of Fyn, Denmark), the implementation of the WFD has been developed and tested. To draw up as part of a pilot a river basin management plan, the Fyn County developed a cost-effective programme of measures to reduce nitrogen and phosphorus losses from agricultural activities to ensure that all water bodies meet the Water Framework Directive environmental objectives. An economic analysis identified the most cost-effective programme for the river basin. *Click here for the case in the OURCOAST Database.*

TIP: Develop economic or fiscal incentives (inclusive land purchase mechanisms) to stimulate sustainable development.

EXAMPLE: Extensive livestock farming is a pre-condition for high diversity systems as shown by the Island of Islay (Scotland) where nature values are influenced by land use and land use intensity. The Scottish Natural Heritage, a government body responsible to the Scottish Government, along with the Government's Rural Payments and Inspections Directorate, have been responsible for the development and implementation of a number of agricultural incentives and conservation management schemes to encourage farmers not to move towards intensification as a means of conserving flora and fauna. *Click here for the case in the OURCOAST Database.*

How to arrange financing

TIP: Decide in an early stage of the process upon financial responsibilities for the different involved parties. Consider durability of the finances, including follow-up finances and finances beyond the project scope. These actions will prevent unexpected financial struggles during the course of the coastal initiative.

TIP: Be sure that sufficient financial resources are available for all ICZM implementation stages: the plan, monitoring programme, measures, management and public participation. So organize financial support for model developments, not only for the pilot development phase but also for full-scale commercial development.

TIP: Make optimal use of successive funding projects and attract national and European funding (see Annex D).

EXAMPLE: International monetary support from the Netherlands and Germany has been used to enable NGOs in Central and Eastern Europe to buy and/or lease coastal land for conservation and sustainable use purposes. It is a pre-requisite of the funding organizations before any ICZM measures can be implemented. Several examples from central and eastern Europe show that land that had been abandoned can be put under a restoration management plan incorporating ICZM principles once the land had been purchased. In Poland an experienced Dutch NGO offered know-how whilst in Lithuania, exchange visits were made with Dutch farmers. Permanent international funding is not an answer to any scheme in which NGOs wish to conserve the natural values of land and give a socio-economic impulse to the local people. However, it can act as a kick-start after which either national or private funding occurs. *Click here for the case in the OURCOAST Database.*

How to get funding

In 40% of the analyzed cases, with available information about funding (83% of all cases), the funding was a joint venture of two or more partnerships, while 43% of the cases was financed by only one source. The national and regional/local funds are the financial source of 78% of the "one-fund" cases. Considering the cases financed by more than two funding sources, about 34% of these cases were co-financed by a European or international fund.

Mentioned European Union, international and nongovernmental organizations, relevant funds are: Interreg (EU-ERDF), Life/LIFE-Fund, Worldbank, SIDA, EAF (EECONET Action Fund) and WWF (Annex D). The most important European funds are the Structural Fund (ERDF) and Life/Life + Fund, together good for about 80% of the European Union funded projects. The ERDF Structural Fund promotes economic and social cohesion within the European Union by reducing imbalances between regions. Interreg is a Structural Fund with a focus on interregional cooperation. Life+ supports environmental projects on implementation and development of EU environmental policies and legislation that have added value for Europe. EAF funds semi- and non-governmental organization to buy or lease natural sites which contribute to the Pan European Ecological Network.

To conclude, one out of four OURCOAST cases has been financed or co-financed by European or international money. These figures demonstrate the importance of European and international funds in the implementation of ICZM.

TIP: Annex D gives a table of funding opportunities as these have been mentioned in the OURCOAST cases. A distinction has been made between European, international, national nongovernmental organizations, national and regional funds.

TIP: Use funds which are allocated to other initiatives. For example: The EU Cohesion Policy offers opportunities to fund actions via the structural funds to mitigate or adapt to climate change.

5.5 TECHNICAL APPROACH

The technical approach is mainly used in cases related to adaptation to risks. Methodologies to understand complex coastal issues and to implement technical measures are an essential part of this approach.

TIP: The OURCOAST Thematic brochure on "Information and Technology in ICZM" is dedicated to share experiences and best practices dealing with the technology and knowledge applied in ICZM. It discusses the benefits throughout a range of sectors and activities in coastal management, what is needed to improve and implement and is illustrated by practical examples collected throughout Europe.

Which technologies to use

TIP: Use models to understand processes, to improve the understanding of complex coastal issues and to decide about the best suitable measures e.g. decision support tool, ecosystem good and services, indicator approaches, climate change models. The understanding of coastal processes can prevent unforeseen (negative) outcomes.

> EXAMPLE: The EU instructed to draw up a list of indicators and assist in coordinating the definition of the way in which the Member States should calculate the indicators. One set of indicators should measure the progress of the implementation of ICZM and another set should be able to monitor sustainable development of the coastal zone. Using the two indicator sets together would give an indication as to whether progress was being made in the implementation of ICZM and whether that progress was actually leading to increased sustainability at the coast. The indicators measuring progress in achieving sustainable development of the coast will in turn feed back to give policymakers an indication of the need for further action in ICZM. *Check the OURCOAST Database for more information.*

TIP: Use innovative techniques. Innovation is a key factor in modern policy, which has resulted in numerous innovative approaches to a variety of coastal problems or challenges. Before applying standard technology, it is often beneficial to find out about the latest related innovations.

> EXAMPLE: The Ziemelsuseja river is 52 km long and the area of its basin is 491 km2. A feasibility study conducted between 2000-2001 concluded that the low standard of the drinking water and the pollution of the river were due to obsolete municipal waste water treatment (WWT) facilities. The poor quality of the drinking water was furthermore caused by the natural characteristics of the water (extensive level of iron), worn-out water supply systems and poor protection measures at the water extraction sources. The use of energy-effective technical means and mechanisms (pumps for wastewater treatment facilities and drinking water stations that consume less electricity and heat isolation for buildings; eco-engineering principles), to improve wastewater facilities in small, rural communities in Latvia, minimized the amount of construction materials and have a longer life-time in comparison to conventional technologies. At the same time, the new technologies are more effective and reduce pollution load with nitrate and phosphorus. Public involvement in the project activities has increased citizens' awareness about water sector problems thus eliminating possible pollution caused by adverse household practices. *Click here for the case in the OURCOAST Database.*

TIP: Develop monitoring plans to monitor future impacts. In the last decades more effort has been made to understand and integrate natural processes in ICZM, especially the ones supported by existing EU frameworks e.g. Natura 2000, Environmental Impact Assessments and the Strategic Environmental Assessments. The set-up of a monitoring programme can be defined as a success factor to follow-up and investigate the impacts in the future with the aim to implement the results in future projects and so contributing to the long term perspective of good management. A standard and repeatable approach is required.

CHAPTER 6 Sustainable Economic Growth

6.1 INTRODUCTION

The aim of this chapter is to inform about the benefits of an ICZM approach for those who are mainly dealing with the policy objective "Sustainable Economic Growth". To achieve this policy objective, tips will be provided for the four key approaches: knowledge-based, ecosystem-based, socio-economic and technical. The integration and participation approaches will not be repeated in this chapter. These tips can be read in chapter 4. The tips and success factors are derived from circa 250 OURCOAST cases on sustainable economic growth, some examples:

-Articulation of the harbour management and territorial plan of future, coastal activities in France,
-An Urban Consortium for the Restoration of the Tourist Areas on Gran Canaria in Spain,
-Online coastal education modules for ICZM in Germany,
-Co-management of reefs and lagoons with high natural values in France,
-Integration of European Directives and sectoral policies, from a maritime industry perspective in UK
-Developing a tourism market to improve trans-boundary competitiveness in Sweden and Finland

Some existing EU policies and legislation contribute to the implementation of ICZM. The Directive on Industrial Emissions, Europe 2020, EU Cohesion Policy, Sustainable Development Strategy (SDS) and EU Sustainable Tourism Policy create opportunities to achieve the policy objective 'sustainable economic growth '. The additional values and opportunities of these policies are mentioned in the related approaches.

6.2 KNOWLEDGE BASED APPROACH

The knowledge-based approach refers to the types of knowledge that are available for ICZM decision-makers. This will include the same aspects as listed in Section 4.2. Tips and tools related to knowledge are derived to stimulate adaptive management during a gradual process and a solid scientific basis for sustainable economic growth.

How to share information

The exchange of knowledge and information will save costs and raise awareness of stakeholders. A specific project could be built on experiences from other projects, e.g. the methods used and other practical advice. Several requirements play a role in information sharing.

TIP: Information on experiences should ideally be:

- Quantitative, or at least with some quantitative data;
- Sufficient and relevant;
- Consistent, excluding knowledge gaps and complex matters;
- Include local inputs. Locals can provide specific solutions and flexible measures;
- Clear and understandable with a good scientific basis;
- Centralized e.g. access to project outcomes via a user-friendly database or website, the OURCOAST database may help: http://ec.europa.eu/ourcoast/;
- Transferrable e.g. for educational purposes and knowledge spreading. Appropriate training and education would be the next step;
- Followed-up, this means that the database must be kept up to date. Data management maintenance needs must be recognized, including budget and responsibilities.

EXAMPLE: A bottom-up approach involving user groups led to the development of a free, on-line distance learning tool for ICZM, called CoastLearn, which is available in many different languages. It has eight modules which allow an easy-to-follow, comprehensive and enjoyable course which can be followed at the learner's own pace. Nearly 95% think that the tool is relevant to their country showing that the nearly impossible task of bridging cultures, socio-political contexts and natural conditions in countries as far apart as Estonia and Turkey or Great Britain and Romania, has been achieved. The tool is appropriate to the main target groups – coastal managers and NGOs – as well as to university staff and students. Click

EXAMPLE: The island Rügen (Germany) aimed to find a common definition for sustainable tourism development, to initiate a network for inter-island cooperation to exchange practical experiences, to define common quality checks and to identify limitations. The first step was to identify existing concepts of sustainable tourism and then define the current status. The next step was to create an intra-Rügen network for communication between stakeholders as basis for inter-island cooperation. The third step was to identify common existing sustainability criteria and new sustainable initiatives. The tourism projects were monitored for their compliance with strengthening local culture, reduction of pollution and the use of resources, the creation of long-term employment and marketing for the tourism service or product. *Click here for the case in the OURCOAST Database.*

Which European tools are applicable

The EU Sustainable Tourism Policy aims to improve the competitiveness of tourism in the European Union, which plays a crucial role in strengthening the sector with a view to dynamic and sustainable growth. The competitiveness is closely linked to its sustainability, as the quality of tourist destinations is strongly influenced by their natural and cultural environment and their integration into a local community. The sustainability of tourism covers a number of aspects: the responsible use of natural resources, taking account of the environmental impact of activities (production of waste, pressure on water, land and biodiversity), the use of 'clean' energy, protection of the heritage and preservation of the natural and cultural integrity of destinations, the quality and sustainability of jobs created, local economic fallout or customer care. These principles are largely reflected in tourism strategies introduced at national and regional level, although they find insufficient expression in specific actions: *increasing socioeconomic knowledge in relation to the environment; indicator system for the sustainable management of destinations; awareness-raising campaigns*

concerning the choice of destination and means of transport and identification and adaptation to climate change risks.

6.3 ECOSYSTEM BASED APPROACH

The ecosystem-based approach refers to the application of a management system that is based upon and integrated, science based approach aiming to sustain the heath, resilience and diversity of whole ecosystems while allowing for sustainable use by humans of the goods and services these ecosystems may provide. This includes the same aspects as listed in Section 4.3.

How to address the added value of sustainability
Sustainable development should have added value for socio-economic sectors and nature. In 68 out of the 72 related OURCOAST cases where sustainable development played a part, it turned out to be successful for all sectors.

> EXAMPLE: River catchment and coastal waters are considered as one (social-ecological) system, in the Elbe River case. This study aimed to provide a management tool to coordinate the river catchment's sustainable development according to the Water Framework Directive i.e. to achieve a good ecological and chemical status of freshwater systems and coastal areas and to reduce human impact as far as possible. Scenarios and models for catchment fluxes and coastal ecosystem models were combined in order to calculate the impact of socio-economic drivers, pressures on environmental factors of catchments and environmental state changes of coastal waters. Different policy response options in the catchment were used to assess different scenarios for the future. *Click here for the case in the OURCOAST Database.*

TIP: To be sure of the success, it is required to have a clear long term perspective of the benefits These perspectives, or goals, should be defined at an early stage of the coastal initiative in a "SMART" way, meaning: Specific, Measurable, Acceptable, realistic and Time-dependant.

Connectivity of ecosystems, their protection and the provision of ecosystem services, while addressing mitigation and climate change, is strongly promoted in Europe under the name "Green and Blue Infrastructure". The "Green Infrastructure" is a land management tool which contributes to minimizing natural disaster risks by using ecosystem-based approached for coastal protection through marshes/ flood plain restoration rather than constructing dikes. The "Blue Infrastructure" is based on rivers, lakes, ponds and grassland strips along these rivers, lakes and ponds.

Which European tools to take into account
The Strategic Environmental Assessment (SEA) Directive and the Environmental Impact Assessment (EIA) Directive recognize and assess environmental impacts (correlated with natural processes) in an early stage of the process. The directives force mitigation and compensation before plans are accepted. SEA is a strategic framework for sustainable development of plans/programmes while EIA functions as a framework for projects.

6.4 SOCIO-ECONOMIC APPROACH

The socio-economic approach refers to benefits that accrue to society and to the economic development of that society as a result of the ICZM approaches taken. These benefits will, generally, have been determined in advance of the work being conducted and the potential results factored into the methodology used. This includes the same aspects as listed in Section 4.4.

TIP: The OURCOAST Thematic brochure on "Socio-Economic Benefits from ICZM" is dedicated to share experiences and best practices dealing with the socio-economic benefits of ICZM. It discusses the benefits throughout a range of sectors and activities in coastal management, what is needed to improve and implement and is illustrated by practical examples collected throughout Europe.

How to save costs

Economic measures are needed for achieving socio-economic benefits by providing guidance for decision-making. The instruments are valuable for sound use of resources and to improve competitiveness.

TIP: Execute socio-economic analysis: cost-benefit analysis or contingent-valuation methods from a multi-sectoral perspective instead of a sectoral perspective to increase environmental awareness. The execution of a coast-benefit analysis at the start of a project helps allocating the budget in a more efficient way.

> EXAMPLE: In The Netherlands, where an economic valuation of gas exploitation in the Dutch Wadden Sea was conducted to determine the benefits and costs to society from a multi-sectoral point of view as opposed to a purely sectoral determination of the financial benefits. Proposals were made to begin gas extraction from a Natura 2000 site. The economic benefits from obtaining the gas were weighed against a number of other environmental factors to determine the true worth of the extracted gas. The study caused a modification to the way in which the extraction was eventually conducted. The economic valuation studies increased the awareness of policy makers about the potential economic losses of ecosystem services and thus affected the design of the gas exploitation infrastructure. Clear conditions were set with regard to possible unforeseen environmental impact that may occur in the future. *Click here for the case in the OURCOAST Database.*

TIP: Take cost-effectiveness of new measures, low maintenance costs and financial self-sufficiency of measures into account for a positive financial balance.
TIP: Learning by doing, the exchange of experiences will reduce the costs of required research on innovative techniques and potential impacts.
TIP: Develop economic or fiscal incentives (inclusive land purchase mechanisms) to stimulate sustainable development. Also take other economic instruments into account.

> EXAMPLE: Extensive livestock farming is a pre-condition for high diversity systems as shown by the Island of Islay Scotland) where nature values are influenced by land use and land use intensity. Various incentive schemes have been put into place to encourage farmers not to move towards intensification as a means of conserving flora and fauna. Detailed information about these incentives and other measures can be found in the OURCOAST Database: http://ec.europa.eu/ourcoast/

How to arrange financing

TIP: Decide upon financial responsibilities for the different authorities involved in an early stage of the process. Consider durability of the finances, including follow-up finances and finances beyond the project scope. These actions will prevent unexpected financial struggles or conflicting expectations on financial issues.

TIP: Be sure that sufficient financial resources are available for all ICZM implementation stages: the plan, monitoring programme, measures, management and public participation. Also use successive funding projects, attraction of national and European funding, optimally.

> EXAMPLE: International monetary support from the Netherlands and Germany has been used to enable NGOs in Central and Eastern Europe to buy and/or lease coastal land for conservation and sustainable use purposes. It is a pre-requisite of the funding organizations before any ICZM measures can be implemented. Several examples from central and eastern Europe show that land that had been abandoned can be put under a restoration management plan incorporating ICZM principles once the land had been purchased. In Poland an experienced Dutch NGO offered know-how whilst in Lithuania, exchange visits were made with Dutch farmers. Permanent international funding is not an answer to any scheme in which NGOs wish to conserve the natural values of land and give a socio-economic impulse to the local people. However, it can act as a kick-start after which either national or private funding occurs. *Click here for the case in the OURCOAST Database.*

Where to get funding

In 40% the cases, with available information (83% of all cases), the funding was a joint venture of two or more partnerships, while 43% of the cases was financed by one source. The national and regional/local funds are financial sources of 78% of the 1-fund cases. Considering the cases financed by more than 2 funding sources, about 34% of these cases were co-financed by a European or international fund. Often used EU, international and NGO funds are: Interreg (EU-ERDF), Life/LIFE-Fund, Worldbank, SIDA, EAF (EECONET Action Fund) and WWF (Annex D). The most important European funds are the Structural Fund (ERDF) and Life/Life + Fund, together good for about 80% of the European funded projects. The ERDF Structural Fund promotes economic and social cohesion within the European Union by reducing imbalances between regions. Interreg is a Structural Fund with a focus on interregional cooperation. Life+ supports environmental projects on implementation and development of EU environmental policies and legislation that have added value for Europe. EAF funds semi- and non-governmental organization to buy or lease natural sites which contribute to the Pan European Ecological Network.

To conclude 1 of the 4 cases has been financed or co-financed by European or international money. These figures demonstrate the importance of EU and international funds in the implementation of ICZM.

TIP: Annex D gives an overview of funding sources as these have been mentioned in the OURCOAST cases.

TIP: Use funds which are allocated to other initiatives. For example: The EU Cohesion Policy offers opportunities to fund actions via the structural funds to mitigate or adapt to climate change.

TIP: Use marketing tools like awards or labels to promote a coastal area or a coastal initiative.

> EXAMPLE: Quality Coast is the first such European quality label for coastal communities that is providing transparent information on aspects of sustainability to visitors and on their plans for future improvements. Visitors can take this information into account in choosing their holiday destination. QualityCoast is supporting both the Blue Flag and the Green Key Programme and is, therefore, complementary to them. The Award has the advantage that mass tourism destinations can also be granted QualityCoast status. Participating communities effectively join a European network to share the same values and practices on sustainable development and are willing to exchange their experiences and best practices in order to improve sustainability. *Click here for the case in the OURCOAST Database.*

Which European tools to take into account

The *European Economic Recovery Plan* for growth and jobs is part of the *EU Cohesion Policy*. The plan includes measures to boost demand, help restore confidence and promote employment and social inclusion and proposals for smart investment in tomorrow's skills and technologies to help yield higher economic growth and sustainable prosperity in the longer term.

Corporate Social Responsibility (CSR) is an opportunity for enterprises to combine economic, social and environmental objectives. The EU has also made progress in mainstreaming the *Sustainable Development Strategy* agenda into its external policies, for example through *Sustainability Impact Assessments* carried out in the context of the preparation of Free Trade Agreements and work on climate change.

Europe 2020 puts forward three mutually reinforcing priorities and seven flagship initiatives to catalyse progress under each priority theme:

- Smart growth: developing an economy based on knowledge and innovation: "Innovation Union", "Youth on the move", "Digital agenda for Europe"
- Inclusive growth: fostering a high-employment economy delivering social and territorial cohesion: "Agenda for new skills and jobs" and "European platform against poverty"
- *Sustainable growth:* promoting a more resource efficient, greener and more competitive economy: *"Resource efficient Europe"* and *"an industrial policy for the globalization era"*
- *"Resource efficient Europe"* to help decouple economic growth from the use of resources. The flagship initiative provides a long-term framework for actions in many policy areas, supporting policy agendas for climate change, energy, transport, industry, raw materials, agriculture, fisheries, biodiversity and regional development. *"An industrial policy for the globalization era"* to improve the business environment, notably for SMEs, and to support the development of a strong and sustainable industrial base able to compete globally.

6.5 TECHNICAL APPROACH

The technical approach is mainly used in cases related to adaptation to risks. Methodologies to understand complex coastal behaviour and to implement technical measures are an essential part of this approach.

TIP: The OURCOAST Thematic brochure on "Information and Technology in ICZM" is dedicated to share experiences and best practices dealing with the technology and knowledge applied in ICZM. It discusses the benefits throughout a range of sectors and activities in coastal management, what is needed to improve and implement and is illustrated by practical examples collected throughout Europe.

Which technologies to use

TIP: Use models to understand processes, to improve the understanding of complex coastal issues and to decide about the best suitable measures e.g. decision support tool, ecosystem good and services, indicator approaches, climate change models. The understanding of coastal processes can prevent unforeseen (negative) outcomes.

EXAMPLE: In 2005 an Oil Spill Identification System has been developed to detect oil spills from ships. The OSIS new surveillance system is helping to identify leaks and plan corrective action and it is already improving oil spill detection in the North Sea providing 24-hour online surveillance. The project demonstrates the viability of a permanently mounted sensor system to identify oil discharges from offshore installations in those parts of the North Sea designated as 'special areas' by OSPAR. The system allows improved and continuous monitoring that is more effective and less costly than the current use of aerial surveillance. OSIS is also cheaper and more accurate than systems based on conventional satellite imagery. *Click here for the case in the OURCOAST Database.*

EXAMPLE: Copenhagen Energi researched treatment techniques for combined sewer overflows were shown to improve discharges to receiving waters. It was shown that the treatment of overflow sewage waters could be achieved using several technical interventions depending on the expected overflow volumes, catchments and recipient water bodies. Additionally, treatment efficiencies were quantified regarding the most common polluting factors such as chemical oxygen demand (COD), suspended solids and E.coli. The Copenhagen plant was the first of its kind and the method was highly relevant in relation to large catchments in big cities located near bathing waters. *Click here for the case in the OURCOAST Database.*

TIP: Develop monitoring plans to monitor future impacts. In the last decades more effort has been made to understand and integrate natural processes in ICZM, especially the ones supported by existing EU frameworks e.g. Natura 2000, Environmental Impact Assessments and the Strategic Environmental Assessments.

TIP: The set-up of a monitoring programme can be defined as a success factor to follow-up and investigate the impacts in the future with the aim to implement the results in future projects and so contributing to the long term perspective of good management. A standard and repeatable approach is required.

TIP: the Eurosion project identified all sorts of causes for erosion problems and means to address these problems. *Click here for the EUrosion project website.*

Which European tools to take into account

In the *Directive on industrial emissions* (Recast) it is stated that the permit conditions include *emission limit values (ELVs)* who must be based on *best available techniques (BAT).* The impact of industrial activities on coastal ecosystems is being diminished by using these best available techniques and emission limit values. Furthermore the directive ensures further that the public has a right to participate in the decision making process, and to be informed of its consequences, by having *access to a permit applications in order to give opinions, permits, results of the monitoring of releases, the European Pollutant Release and Transfer Register (E-PRTR)* from 2007.

ANNEX A. OURCOAST Database

Which info is provided

The OURCOAST Database provides experiences and best practices in ICZM, presented in the form of case studies that can be searched by:

- Geographical Selection
- Themes
- Key Approaches, and
- Free search.

Each case study is described in a two page English summary. The source documents are referenced and, whenever possible, are downloadable in their original language. The information content of each case study summary is quality-checked by an expert or competent person associated with the case.

OURCOAST Database: http://ec.europa.eu/ourcoast/

OURCOAST, what else

OURCOAST is an ongoing initiative that will be continuously available on the European Commission Environment (ICZM) website. It is expected that ICZM case studies will be added, used and that the OURCOAST community will keep on growing. To this end, a functionality called “add your own case” will be included into the website.

Please provide your views, feedback and become active part in the implementation and development of ICZM in EUROPE.

ANNEX B. References

OURCOAST

- Comparative analyses of the OURCOAST cases
- OURCOAST website
- OURCOAST Database
- OURCOAST Brochure participation
- OURCOAST Brochure socio-economic benefits
- OURCOAST Brochure information and technology
- OURCOAST Inception Report (2009)

Existing guidances

- Stocktaking reports, http://ec.europa.eu/environment/iczm/pdf/stoktaking_wg.pdf
- Indicator Guidelines
- Reporting 2006-2010
- Guidelines for Integrated Coastal Zone Management
- Development of guidelines for ICZM in Germany
- Implementing ICZM at sub-national and local level – recommendations on best practice
- Planning Policy Guidance: Coastal planning (PPG20)
- Guidelines for preparing coastal zone management plans
- Policy Coast (Beleidslijn Kust)
- Managing coastal activities: a guide for local authorities
- Development of a Guidance Document on Strategic Environmental Assessment (SEA) and Coastal Erosion
- Guidelines for Implementing Local Information Systems at the Coast

ICZM

- Rupprecht Consult (2006). Evaluation of the Integrated Coastal Zone Management (ICZM) in Europe.
- EU ICZM Recommendation (2002)

Funding

- EECONET fund
- EC info on funding
- Life fund
- Eurosion project

ANNEX C. Overview relevant guidances

Summary of comparative analysis of existing guidance

A brief comparative study on existing ICZM guidance and guidelines resulted in an overview of related European guidances in the table below. Based on the study, some focal points could be distinguished within these existing guidances:

- *Stepwise approach and responsibilities:* A practical example is The Guidelines for Integrated Coastal Zone Management, formulated by Post and Lundin in 1996. Although the guidelines are developed 15 years ago, the stepwise approach on the formulation of ICZM programmes is definitely worth mentioning. Also the explanation about roles and responsibilities of governments and stakeholders could be useful when these principles are unclear to you. N.B. Roles and tasks might slightly differ per country or region.
- *Gaps and communication:* Another research-based example is the thesis of Nandelstädt 'Development of guidelines for integrated coastal zone management in Germany' (2008). Nandelstädt noticed gaps in the different policy phases of ICZM in Germany. Recommendations for national level and instructions for the regional and federal level are provided. Furthermore the guidelines emphasize the importance of communication and information exchange during the process.
- *Actions at local level:* Pickaver and Ferraira developed the best practice recommendations 'Implementing ICZM at sub-national and local level' in 2008, as part of COREPOINT. The recommendations focus on the local levels of North-West Europe and combine the eight ICZM principles with required actions and the degree of local implementation.
- *National governments:* Suggestions for good examples of national guidance and guidelines are 'Planning Policy Guidance: Coastal Planning (PPG2)' of Wales, United Kingdom, 'Guidelines for preparing coastal management plans' of New South Wales, Australia and 'Beleidslijn Kust'(Policy Coast) of The Netherlands. The reports use an explanatory approach to clarify coastal relevant policies, roles and responsibilities.
- *Sector-based guidance*: Many guidelines and guidances are based on specific sectors like recreation, coastal defence, information exchange, erosion, nature conservation etc. A selection of sector-based guidelines are 'Managing coastal activities' (Defra UK, 2008), 'Development of a Guidance Document on Strategic Environmental Assessment and Coastal Erosion' (EC ATKINS ,2004) and 'Guidelines for Implementing Local Information Systems at the Coast' (COREPOINT 2007).

The table of existing guidances, below, has been divided into four groups. The first group includes ICZM guidance on reporting and progress provided by the European Commission. The second group contains guidance based on research results. Last two groups include guidance provided by governments. One group has a focus on the implementation of ICZM in general and the other one focuses on specific issues related to ICZM.

Table 1

Guidance provided by the European Commission

Title	*Stocktaking reports*	*Indicator Guidelines*	*Reporting 2006-2010*
Source	EC	EC (DEDUCE project)	EC
Year / p.	2003 / 6p.	2007 / 95p.	2010 / 4p.
Target	Member States	Member States	Member States
Objective	Key issues to develop	adopt an indicators-	Updated set up for

	national stocktaking	based approach to evaluate sustainable development	Member States reports
Structure	Irrelevant	1) Introduction 2) Current coastal policy framework and the sustainable indicators 3) Methodological development 4) The usefulness of a methodological framework for indicators 5) Experiences from EU level to local level 6) Conclusions and recommendations	1) Introduction 2) Activities undertaken to support the implementation of ICZM 3) An assessment of progress in ICZM and the state of the coast 4) Outlook for further implementation of ICZM 5) Process
Approach	Stepwise, 3 case examples	Explanatory, case examples	Stepwise, detailed advice

Table 2

Guidance provided by research

Title	*Guidelines for Integrated Coastal Zone Management*	*Development of guidelines for ICZM in Germany*	*Implementing ICZM at sub-national and local level – recommendations on best practice*
Source	Post, J. and Lundin, G. (eds), Environmentally Sustainable Development Studies and Monographs Series. The World Bank, Washington DC	Nandelstädt, T. Thesis Environmental System Analysis group, Wageningen University	Pickaver, A. and Ferraira, F., EUCC The Coastal Union, (INTERREG IIIB) COREPOINT,
Year / p.	1996 / 28p.	2008 / 95p.	2008 / 15p.
Target	All authorities	All authorities, scientists	All authorities
Objective	To contribute to the practice of sustainable development, from a governmental policy perspective	Recommendations for ICZM implementation at national level and instructions for the regional and federal level	To provide recommendations and guidelines on the best practice implementation in North-West Europe at local level (as part of COREPOINT)
Structure	1) Triggering the Need for ICZM 2) Roles and Responsibilities in the Coastal Zone 3) Formulation of the Plan (stepwise)	1) Problem recognition 2) Identification of preconditions 3) Preparation of plan/strategy 4) Execution of measures	1) Introduction 2) ICZM implementation at sub-national / local level 3) Relevance of the ICZM principles

	4) Program Implementation 5) Monitoring 6) Evaluation and Enforcement 7) ICZM and National Development Plans, 8) Funding considerations and International Aspects	5) Evaluation 6) Establishment of ICZM coordination points 7) Definition of overall targets 8) Development of indicators 9) Bringing forward the paradigm shift of spatial planning	and actions measuring ICZM progress at local level *Broad holistic approach, long-term perspective, adaptive management, local specificity, natural processes, support of all stakeholders, participatory approach, combination* 4) Conclusions and recommendations
Approach	Stepwise, detailed advice on ICZM plans preparation	case examples, stepwise, detailed advice on ICZM plan preparation	Stepwise
Comment	It is likely that other, issue-specific guidelines (fisheries, agriculture, pollution) will be developed in future	Every step includes gaps and case study examples Important: communication and information-transfer	Association between 8 ICZM principles and required actions and an illustration of the degree of local implementation

Table 3

Guidance provided by governments about ICZM implementation in general

Title	*Planning Policy Guidance: Coastal planning (PPG20)*	*Guidelines for preparing coastal zone management plans*	*Policy Coast (Beleidslijn Kust)*
Source	Department of the Environment, Welsh Office, UK	State of New South Wales and the department of Environment, Climate Change and Water NSW, Australia	Ministry of Traffic and Water Quality, The Netherlands
Year / p.	1992 / 25p.	2010 / 22p.	2007 / 40p.
Target	Local authorities and others	Local authorities, consultants	All authorities
Objective	To set the general context for policy and identifies planning policies for the coast, policies for development that require a coastal location, guidance on how these policies should be reflected in development plans	To provide guidance on the preparation of a Coastal Zone Management Plan (CZMP). Specify the requirements related to coastal risk management, coastal ecosystems and uses	To clarify the roles and tasks of governmental levels in coastal management and to explain coastal planning policy and other relevant policies. To harmonize decisions on safety, planning and environment

Structure	1) Context for coastal planning *Introduction, Character of the coastline, The coastal zone, Designated areas, International dimension (EU), Existing planning policy guidance, Heritage Coasts* 2) Planning policies for the coast *Types of coast, Conservation policies, Policies for development, Policies for risks, Environmental assessment, Policies for improving the environment* 3) Policies for development at a coastal location *Tourism, Recreation, Major developments, Mineral extraction, Energy generation, Waste water and sewage treatment plants* 4) The coastal zone and development plans *Cooperation and coordination, Information, planning framework, Regional and strategic guidance, Strategic Planning Guidance for Wales, Structure and local plans*	1) Introduction *Purpose and structure of these guidelines and of a CZMP, Certification, Relationship to other guidelines, Principles* 2) CZMP preparation *Minimum requirements, Preparing* 3) Coastal risk management *Minimum requirements for coastal risks, Risks from coastal hazards, Other coastal risks* 4) Coastal ecosystem health *Minimum requirements for coastal ecosystems, Estuary health management, Other coastal ecosystems* 5) Community uses of the coast *Minimum requirements for community uses, Access, Amenity, Recreational use of the coastal zone, Cultural and heritage environment*	*1)* Scope of the Coastal Policy *2)* Status of document *3)* Government policy for the coast *Looking back, contents of current national coastal policy* 4) Roles and responsibilities of governments in assessing interventions and activities *Based on existing guidelines and laws, so each state responsibilities for a particular law* *5)* Administrative coordination *Negotiations between competent authorities, overlap, in water safety, liability for planning* *6)* Guidance to development policy for water safety and innovation opportunities
Approach	Explanatory policies, advice on coastal development plans	Explanatory, detailed advice on ICZM plan preparation	Explanatory, few case examples
Comment and tips	Replaced by the Planning Policy Statement 25 Supplement: Development and Coastal Change in 2010	Includes requirements for three issues: coastal risks, ecosystem health and community uses	Clear overview of regulations, policies and responsibilities in the coastal areas

Table 4

Guidance based on specific ICZM topics

Title	*Managing coastal activities: a guide for local authorities*	*Development of a Guidance Document on Strategic Environmental Assessment (SEA) and Coastal Erosion*	*Guidelines for Implementing Local Information Systems at the Coast*
Source	Defra: department for environment, food and rural affairs, London UK	EC, ATKINS	Stojanovic, T.A., COREPOINT (INTERREG IIIB) project, Cardiff University
Year / p.	2004 / 33p.	2004 / 59p.	2007 / 25p.
Topic	Coastal activities / recreation	Erosion	Information systems
Connect ICZM	Consultation and liaison with other management initiatives to ensure better coastal sustainable management	The EUrosion study pointed to the links between coastal sediment management and wider ICZM	network to exchange information and experiences on ICZM
Target	Local authorities and others	National SEA planners and decision-makers	Coastal practitioner groups
Objective	To provide guidance on regulation and options for developing management strategies and to encourage partnership arrangements	To encourage all countries to understand the potential of SEA and how, by addressing coastal issues in plans, populations may benefit	To create a network and to support a more effective approach based on distributed systems and group decision-making
Structure	1) Introduction 2) Organizations with coastal role 3) Voluntary approaches *Benefits of the voluntary approach, encouraging voluntary schemes, tools, zoning* 4) Byelaws (statutory approach) *Using bylaws, powers available, choosing byelaw power, making byelaws, advertising byelaws and holding them on deposit, applying for confirmation, date of operation,*	1) Introduction 2) Strategic Environmental Assessment (SEA) *What is SEA? Benefits of SEA? SEA requirements? What plans and programmes require SEA? Link to Other EC Directives?* 3) Planning for Coastal Erosion *Overview, The spatial and temporal scale of erosion and processes, factors influence cumulative erosion? SEA, coastal*	1) Introduction 2) Information Systems Fail 3) What Is A Local Information System? 4) Who Will Build And Implement An Information System? 5) What Will A Local Information System Look Like? 6) Some Starter Questions: *1 Do You Need An Information System? 2 What Amount Of Work? 3 What Types Of Information?* 7) Seven Key Action

	limitations 5) Designing a management scheme *Consultation, benefits and techniques, developing the scheme: 1. Understanding issues 2. Experience and options 3. Identify management options 4. Develop a scheme 5. Implementation, Monitoring* 6) Enforcement 7) Disseminating info	*erosion and ICZM, Erosion Matters into SEA* *Responses* 4) Incorporating Coastal Erosion Issues into SEA processes *Screening: what plans and programmes require SEA? Scoping: what should be in SEA? baseline environment related to erosion, links to other plans, and environmental objectives* *Prepare draft environmental report and consult, Monitoring* 5) Alternatives, prediction, evaluation, mitigation *Identifying alternatives , Predicting and evaluating the environmental impacts of alternatives, Mitigation of significant adverse env impacts* 6) Key Messages	for LIS development i. Justifying Information Systems ii. Create Your System With Clear Purposes iii. (How To) Involve Users From Beginning To End iv. (Begin To) Solve Technical Obstacles v. Deploy Appropriate Technologies vi. Check For Quality Assurance vii. Implementation And Training 8) Conclusions
Approach	Stepwise, detailed advice, case examples	Stepwise, explanatory, detailed advice, examples	Extremely stepwise, few examples, detailed advice
Comment and tips	Accent on options for the voluntary approach and the statutory approach	Visualize in tables and figures key approach or instrument per stage/step (p51)	Every key action contains “how” , “why” and a (visualizing) example

ANNEX D. Financial Funds

This Annex summarizes the funds which were mentioned as being useful in the 350 collected OURCOAST cases. This overview does not necessarily be complete. Some of the hereunder mentioned funds financed only a part of the case or co-financed cases jointly with other funds or finance sources.

EU funds	
Structural Fund (ERDF)	European Regional Development Fund, e.g. sustainable ports in the Baltic Sea Regio
EFF	EU Fisheries Fund, e.g. integrated management of mussel fishery and aquaculture under changing baselines due to regime shifts
EU - Life/ LIFE+ Fund	Financial Instrument for the Environment, e.g. participatory planning and management of wetlands along the Gulf of Finland migratory flyway
EU - FP	EU Research Framework Programmes
International funds	
ICPDR	International Commission for the Protection of the Danube River
IMO	International Maritime Organization, e.g. oil spill from ships preparedness and response
UNESCO	United Nations Educational, Scientific and Cultural Organization, e.g. management of the Giant's Causeway and Causeway coast world heritage site
UNDP-ACT	UN Development Programme - Action for Cooperation and Trust, e.g. network for a sustainable future: ICZM as a conflict resolution tool for building bridges among neighboring communities
UNEP - GPA	UN Environment Programme-Global Programme of Action for the Protection of the Marine Environment from Land-based Activities
Worldbank	e.g. high monetary land value and non-consultation with locals as major problems for implementing a "protected area" regime in potential tourism destinations
WWF	World Wildlife Fund, e.g. helping deltas cope with the effects of climate change
SIDA	Swedish International Development Cooperation Agency, e.g. process of establishing sustainable tourism and agriculture in a National Park
EAF	EECONET Action Fund, e.g. managing tourism in a coastal national park,
EUCC	Coastal & Marine Union, e.g. The Oder Estuary Coastal Information System
FZS	Frankfurt Zoological Society, e.g. NGO land purchase/lease for conservation management and socio-economic development
Other NGO	e.g. how fragmentation in decision and policy making among competent authorities can jeopardise ICZM approaches
International Embassies	e.g. Training coastal managers for cross-border regions
National NGO funds	
IUCN-NC (The Netherlands)	International Union for Conservation of Nature
STINAPA (Bonaire)	National Parks Foundation (Stichting Nationale Parken Bonaire)
RSPB (UK)	The Royal Society for the Protection of Birds

Trusts and Funds (UK)	e.g. regulated tidal exchange as part of a broader strategy for managing marsh habitat
Friedrich Ebert foundation's Baltic office	e.g. coastal partnership and communication in small harbour municipalities
National funds	
National government/ programmes	e.g. erosion policy options for the Costa da Caparica in Portugal
LITEAU national programme (France)	Research programme dealing with coastal environment
DEFRA (UK)	Department for Environment, Food and Rural Affairs
English Nature (UK)	e.g. regulated tidal exchange as part of a broader strategy for managing marsh habitat
Environmental Agency (UK, Sweden)	e.g. shoreline Management Plans in the UK
Environment Protection Fund (Latvia)	e.g. coastal partnership and communication in small harbour municipalities
ANB (Belgium)	Agency for Nature, e.g. habitat creation by a controlled, reduced tide at Hamme, Belgium
Regional and local funds	
Regional/ local administrations	e.g. linking sustainable agriculture and coastal nature to improve local economies
Waterwegen en Zeekanaal (AWZ) (Belgium)	e.g. controlled reduced tide to produce flood control area and new habitats in Belgium
LEADER II (West cork)	e.g. marine tourism as part of a wider regional image strategy to provide a competitive advantage in Ireland
Associated (British) Ports (UK)	e.g. noise management in European Ports
Coordination Centre on ICZM (Belgium)	e.g. Sustainable Beach Management by local governments and private organizations
Research centres/ universities/ National parks / consultancies	e.g. partnership to revitalise an urban waterfront in a coastal lagoon or e.g. Monitoring small cetaceans in the coastal and open waters of the European Atlantic and North Sea
Private funds (ex. landowners)	e.g. The needs and role of the maritime industry as a coastal stakeholder in ICZM
Others	
HELCOM	Helsinki Commission, Baltic Sea Programme (BSP), e.g. to base a regional Action Plan on the eco-system approach to address water quality of the Baltic Sea
OSPAR	Oil Spill Prevention, Administration and Response, e.g. the regional approach to data and information collection: marine litter in the North Sea