Report

Report on the use of the ICZM indicators from the WG-ID

A contribution to the ICZM evaluation
Version 1

Prepared by:
Françoise Breton
with contributions of Clive Gilbert, Xavier Marti and the members of the WG-ID

September 2006

European Topic Centre
Terrestrial Environment

Universitat Antònoma de Barcelona
Edifici C – Torre C5
4ª planta
08193 Bellaterrra (Barcelona)
Spain

Contact: etcte@uab.es

European Environment Agency

TABLE OF CONTENTS

1 CONTEXT AND OBJECTIVE OF THE REPORT

This report has two main objectives. Firstly it aims at analyzing the development of the indicators done as a common tool to support the ICZM process. This development has been based mainly on voluntary actions from motivated countries and regions that have tested the indicators and performed a first validation, producing first results.

The second objective is to assess how and in which extend these indicators have been used by countries in the framing of their National strategy on ICZM.

Through all the process, initiated in 2003, networking and information has made indicators transcend at other spheres. The synergetic effect is relevant to assess the success of ICZM indicators and their penetration in society.

On 30 May 2002, the Recommendation concerning the implementation of an integrated management of coastal zones in Europe (ICZM) was approved by the European Parliament and the Council. In this recommendation, the Member States were requested to report back to the Commission 45 months after the official approval, i.e. on 30 February 2006, about the experience gained with its implementation.

The European ICZM expert group, composed of all 20 coastal member States and two candidate States, was set up by the European Commission (DG-ENV) and had its first meeting in October 2002. It recognized the importance of indicators and set up an **"indicators and data" working group (WG-ID)**, lead by the ETC-TE (Chair woman: F. Breton), which began to work in February 2003 (kick off meeting). The WG-ID was 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.

End of 2003, after a steady review of all existing indicators for the coast and sustainable development, the WG-ID proposed that member States and candidate Countries employ **two sets of indicators:**

- An indicator set to measure the progress of implementation of ICZM ("progress indicators")

- A core set of 27 indicators (composed of 44 measures) to measure sustainable development of the coastal zone ("sustainability indicators").

The two indicators have been developed and discussed with the EU Expert Group. The list was accepted beginning 2004, with the instruction to have the indicators tested and validated during the next years.

For the ICZM Progress indicators a methodological guidelines was presented to the EU Expert Group in 2004 to populate the indicators and make the testing. Between 2004 and 2005, a number of tests were done by the members of the WG-ID in their countries and in some region to see how the indicator worked. Results of these tests are in **chapter 3**. Additionally some tests also took place inside the CoPranet project, in Germany, and in other places of the Baltic.

The Set of sustainability indicators at the coast: In 2004, the WG-ID decided, with the support of the EU Expert Group, to apply to an INTERREG project with the objective to get financial and organization support to produce the 27 indicators of the set in a standardized way, and to see if data and measurements can be compared amongst countries, regions and at local scale. DEDUCE kick off took place in 2005, and the project

will finish in April 2007. **Chapter 4** will be dedicated to make a state of the question on the DEDUCE indicators.

> Used together, the two sets should reveal the degree to which implementation of ICZM can be correlated with a more sustainable coast. That is, decisions using an integrated approach should see a positive improvement in the state of the coast with concomitant progress towards sustainable development. 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.

The status of indicator use, the testing done and the first results can be found in chapters 2 and 3. The evaluation of how the WG-ID indicators have been used in the ICZM National Strategies is the objective of Chapter 4. Moreover, The ICZM indicators have been also tested and used in different contexts and this additional use of the WG-ID indicators, their resonance, will be synthesized in chapter 5.

2 RESULTS OF THE TESTING OF THE ICZM PROGRESS INDICATOR

In 2004, first pilot tests have been done to over one hundred practitioners following Guidelines and questionnaire (**see annex 1**). The practitioners represented municipalities, regions and central governments; coastal and estuary partnerships; port authorities and other sectoral interests in England and Wales, Belgium, Holland and France.

By and large the **response of the practitioners to the progress indicator has been positive**. A number of criticisms were voiced at each test and, wherever possible, these have been incorporated in subsequent revisions of the indicator (see the WG-ID report to the EU ICZM Expert Group at Rotterdam meeting). Results have been taken into account to produce in 2004 a **Guidance Note for completing the Progress indicator**. This document has been sent to the EU ICZM Expert Group in July 2005. Since this date, and following the guidelines, the **progress indicator has been produced in eight countries**, members of the WG-ID group: Belgium, France, Greece, Italy (Adriatic Forum), Malta, Poland, South UK and Spain.

Member States have joined with practitioner groups and regional and local administrations, to organise national workshops (or regional workshops) whose principal aim was to complete the progress indicator questionnaire.

COREPOINT (CP) tests have also been done in **March 2005** in Germany, Finland and Lithuania and in Ireland **end 2005**. It is also being done in Brittany (France) in September 2006. No official report on results has been delivered so far.

Fig. 1: Status of implementation : General table

Maritime area	Country	date	Nº of assistants	Guidelines translated	Questionnaire translated	Test at national	Test at regional /local	Country report
Baltic Sea	Poland	29-30 sep 05	36	yes	yes	yes	yes	yes
North Sea	Scotland	planned						
	Belgium	November 05	10	yes	yes	--	yes	yes
Atlantic	South UK	February 04	18	--	--	--	yes	
	North UK	planned						
	France	September 05	20	yes	yes	yes	yes	yes
Mediterran.	Spain	July 05	8	yes	yes	yes	yes	
	Italy		14	no	no	--	yes	
	Greece		Bilateral contacts	no	no	yes	yes	
	Malta	December 05	20	no	no	yes	--	yes

As a number of results are still pending, we have focused on the questionnaires already completed within the WG-ID members (Belgium, France, Greece, Italy, Malta, Poland, Spain, and UK (South) to present first results.

Four countries, 2005, all levels

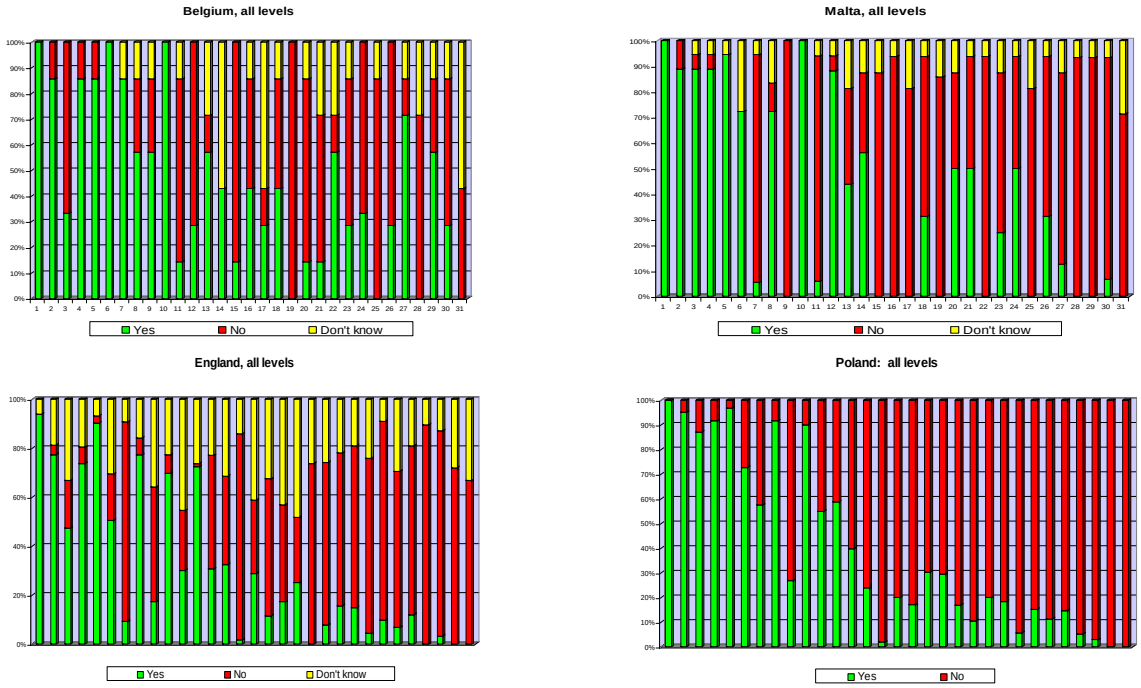


Fig. 2: Results ot the ICZM Progress indicator test: 4 countries, 2005, all levels

- All four countries show similar trends: “YES” are majority in the first questions (representing the implementation of first phase of ICZM) and diminish gradually in the second phase, replaced by a majority of “NO” in the last questions (3rd and 4rth phases).
- “Don’t know” are important affecting most of the questions, except in Poland where they decided not to apply “don’t know”.
- All level are mixed.

England: national, regional, local

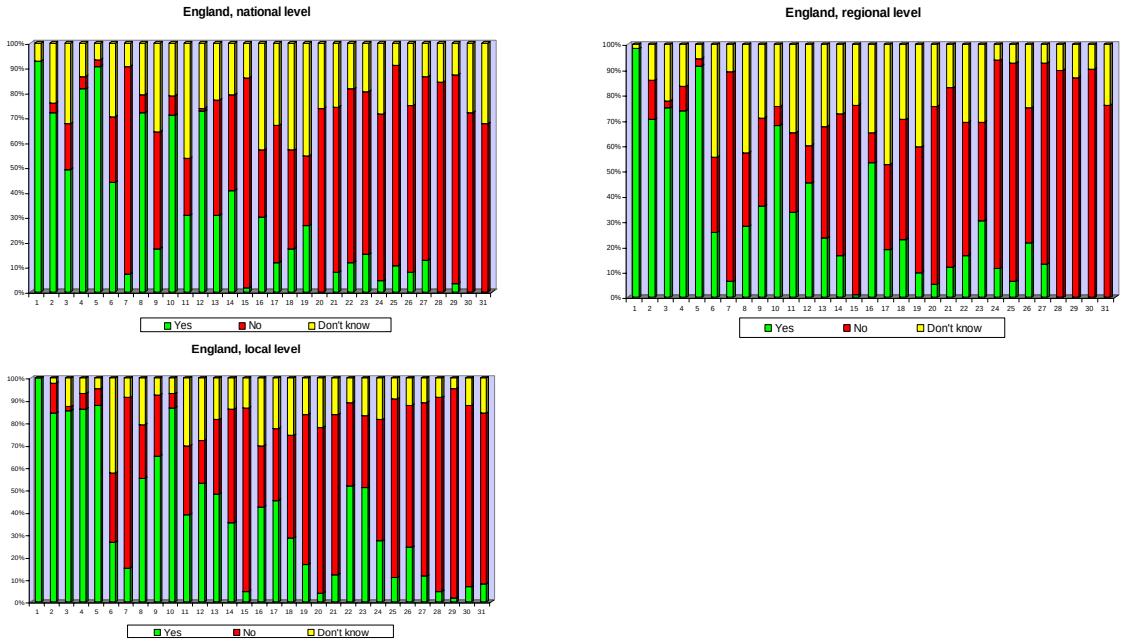


Fig.3: Results ot the ICZM Progress indicator test: Example from England

- More detailed information on the different levels(national, regional and local) is presented for England.
- In England, responses are a little different at each level showing more “YES” at local level, where the decline is slow and even rebound for some questions of the second and third phase
- At national level, first and second phases show high number of “YES” and a clear decline, replaced by higher proportion of “NO” in phases 3 and 4.
- “Don’t know” are fairly important at national and regional level.
- The combined observations show that ICZM is more understood, and probably more experienced, at local level in England.

Next figure shows the results of England by phase for all levels.

- Phase 1 is clearly well advanced (high number of “YES”)
- Phase 2 shows some fighting between “YES” and “NO”, with a higher number of “Don’t know”. Therefore it shows a mid level consolidation, but still with progress to be done
- Phase 3 presents a higher proportion of “NO” than “YES”, but “YES” and “don’t know” are quite relevant
- Phase 4 is dominated by “NO”, with very low proportion of “YES” and “don’t know”.

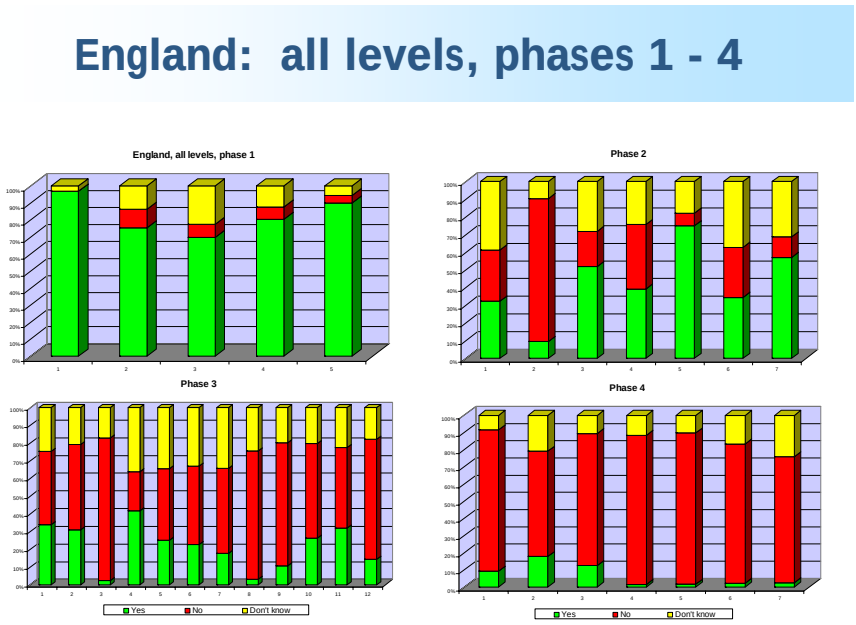


Fig. 4: Results ot the ICZM Progress indicator test:The 4 phases in England

In synthesis:

- 8 countries out of 20 coastal countries of the EU, have tested the ICZM Progress indicator, representing 40% of participation
- During the process, guidance and questionnaire have been translated in Flemish, Polish, French and Spanish.
- Following the guidance most Member States have organized ad-hoc workshops with representatives of different administrative levels and eventually sectoral stakeholders, except in Greece where results have been obtained through bilateral consultations.
- In Italy, it is the Adriatic Forum that participated, with results from the regions of Marche (9 persons), Abbruzzo (1 person) and Puglia (1 person).
- Some participants did not give answer for the year 2000, other did but remarked that this information can convey errors.
- Most of the participants felt that the 3 answers “Yes”, “No” and “do not Know” are not enough. They recommend to introduce another possibility “Started (but not completed)”.
- All participants highlight the usefulness of the questionnaire to get informed, discuss and get a better awareness of what is ICZM, about status of ICZM, and what is still lacking.
- There are some problems sometimes to understand some of the actions, giving play to different interpretations. This allows reviewing the questionnaire and the action names at the light of the problems encountered, and the comments and alternatives given by participants.
- Some countries show more advancement in ICZM at national level, some others at regional levels, depending on how coastal authority is organized (more centralized or more federative)
- Results need to be analyzed country by country more than in general terms, to see if they respond to a pyramidal organization structure or to a lack of communication between scales.
- Results show that between 2000 and 2005 there is a general trend of progress as it can be seen in the following table to summarize trends.

Phase	2000 status	2005 status	Trends and comments
1. **Planning and management are taking place in the coastal zone**	Elemental actions have been taken much. Sectoral plan exist, as well as monitoring.	This phase is completed in practically all the countries, even though sectoral is still preponderant	Good evolution
2. **A framework exists for taking ICZM forwards**	Only actions 6 and 9 are eventually put in place.	Actions 11 and 12 present more problems, but in general other actions are being implemented. Generally there are still sectoral, but with a view to go towards integration.	It is the phase which shows more progress during the period. Some countries have even begun clearly to work in the direction of integration. It is the case for France and Belgium. But the trends are general for all countries.
3. **Most aspect of an ICZM approach to planning and managing the coast are in place and functioning reasonably well**	Not developed	A number of positive answers are shown, even though different in every country. Still lot of work to do.	Some progress, but very significant in quality as it shows a real interest in the construction of ICZM. Actions tackled depend on priority given by each country. Effort should be done during next years.
4. **An efficient , adaptative and integrative process is embedded at all levels of governance and is delivering greater sustainable use of the coast**	Not developed	Not developed	The attainment of a real ICZM lies in this phase, which has to be the main objective for the next years.

Fig.5 : Summary results of ICZM indicator test

As the summary table on progress shows, ICZM progress has been general in all countries analyzed.

- Phases 1 and 2 have been completed successfully between 2000 and 2005. It is a very important asset, even though actions undertaken have been more sectoral than made within the integration concept. Results show that during the period the coast is becoming a real focus for actions.

- Phase 3 shows that a numbers of actions have been developed within an integrated objective, to foster ICZM planning and managing the coast. So the seed is planted, but still needs to grow up.
- This initial effort should be strengthen and continued to attain phase 4 which is still not in place.

With these first results, we have done a **stocktaking of ICZM situation**. Phase 1 and 2 shows good advancement. Therefore it is clear that for next years, focus should be oriented towards progress in phase 3 and 4. This information should help in the definition of next objectives.

Taking into account the suggestions done by participants, actions in phase 4 should concentrate on 5 main objectives:

- **The integration of the administration bodies** institutionally recognized and working
    - on the interface land and sea,
    - on the making of sectoral decision within an integrated context,
    - on the recognition of a number of integrated goals (perhaps the building of a specific authority for the coast in charge to make a specific agenda to attain ICZM objectives);
- **The integration of information for the decision making** (development of data service and indicators, perhaps the constitution of a coastal observatory open to all stakeholders and interactive),
- **The constitution of a good system of participation and governance**, including all stakeholders and the public (perhaps the constituency of a Coastal Forum),
- **A good system of financing ICZM planning and management**
    - well organized at different scales and along time,
    - with specific goals (linked to first objective)
    - with a good follow-up and quality checking (linked to objective 2)
    - with a clear diffusion of all the actions and results, in total transparency (linked to third objective)
- **A follow up of progress done on the sustainability of the coast and a critical revision of actions to be implemented** (Linked with all 4 objectives). In this last action proposed, there is a clear bridge with the other set of indicator, the one to measure sustainability at the coast.

Measuring the extent to which ICZM principles are being applied at local, regional and national levels help Member States respond to the EU Recommendation and provide a benchmark against which further progress can be measured in succeeding years.

3 THE STATUS OF THE SD INDICATORS (DEDUCE)

The table below shows the 27 EU ICZM indicators selected by the WG-ID and agreed by the EU ICZM Expert Group for measuring sustainable development at the coast.

Each of it is associated with a number of measurements to be done. Last column indicates the phases in which the measurement should be realised in the DEDUCE agenda (June 2005-June 2007). Work is now in the phase 4 of production. So, all indicators and measurements in phase 1, 2 and 3 have already been finished.

No	Indicator	code	Measurement	Phase
1	Demand for property on the coast	1.1.	Size and proportion of the population living in the coastal zone	1
2	Area of built-up land	2.1.	Percent of built-up land by distance from de coastline	1
3	Rate of development of previously undeveloped land	3.1.	Percent of new development on previously developed land	2
		3.2.	Area converted from non-developed to developed land use	2
4	Demand for road travel on the coast	4.1.	Volume of traffic on coastal motorways and major roads	2
5	Pressure for coastal and marine recreation	5.1.	Number of berths and moorings for recreational boating	2
6	Land take by intensive agriculture	6.1.	Proportion of agricultural land farmed intensively	**3**
7	Area of semi-natural habitat	7.1.	Area of semi-natural habitat	
8	Area of land and sea protected by statutory designations	8.1.	Area protected for nature conservation, landscape or heritage	2
9	Effective management of designated sites	9.1.	Rate of loss of, or damage to, protected areas	4
10	Change to significant coastal and marine habitats and species	10.1	Status and trend of specified habitats and species	4
		10.2	Number of species per habitat type	4
		10.3	Number of Red List coastal area species	4
11	Lost of cultural distinctiveness	11.1	Number and value of sales of local products with regional quality labels or European PDO/PGI/TSG	4
12	Patterns of sectoral employment	12.1	Full time, part time and seasonal employment per sector	2
		12.2	Value added per sector	
13	Volume of port traffic	13.1	Number of incoming and outgoing passengers per port	1
		13.2	Total volume of goods handled per port	1

		13.3	Proportion of goods carried by short sea routes	
14	Intensity of tourism	14.1	Number of overnight stays in tourist accommodation	**3**
		14.2	Occupancy rate of bed places	**3**
15	Sustainable tourism	15.1	Number of tourist accomodations holding EU Eco-label	2
		15.2	Ratio of overnight stays per number of residents	**3**
16	Quality of bathing water	16.1	Percent of coastal bathing waters compliant with the guide value of the European Bathing Water Directive	1
17	Ammount of coastal, estuarine and marine litter	17.1	Volume of litter collected per given length of shoreline	**3**
18	Concentration of nutrients in coastal waters	18.1	Average winter concentrations of nitrates and phosphates in coastal waters	2
19	Amount of oil pollution	19.1	Volume of accidental oil spills	**3**
		19.2	Number of observed oil slicks from aerial surveillance	**3**
20	Degree of social exclusion	20.1	Indices of multiple deprivation by area	2
21	Relative household prosperity	21.1	Average household income	**3**
		21.2	Percent of population with a higher education qualification	**3**
		21.3	Value of residential property	**3**
22	Number of second homes	22.1	Ratio of first to second homes	2
23	Fish stocks and fish landings	23.1	State of the main fish stocks by species and sea area	4
		23.2	Recruitment and spawning stock biomass by species	4
		23.3	Landings and fish mortality by species	**3**
		23.4	Value of landings by port and species	**3**
24	Water consumption	24.1	Number of days of reduced supply	4
25	Sea level rise and extreme weather conditions	25.1	Number of 'stormy days'	**3**
		25.2	Rise in sea level relative to land	4
26	Coastal erosion and accretion	26.1	Length of protected and defended coastline	2
		26.2	Length of dynamic coastline	**3**
		26.3	Area and volume of sand nourishment	**3**
27	Natural, human and economic assets at risk	27.1	Number of people living within 'at risk' zone	4
		27.2	Area of protected sites within 'at risk' zone	4
		27.3	Value of economic assets within 'at risk' zone	4

Fig. 6: WG-ID set of sustainable indicators and DEDUCE measurements

Indicators are developed at different scale by the different partners of DEDUCE:

- ETC-TE European scale

• IFEN	National scale
• Latvia University	National scale
• MEPA, Malta	National scale
• Gdansk Maritime Institute, Poland	Regional scale
• West Flanders, Belgium	Regional scale
• Gencat, Catalonia	Regional scale
• Municipality of El Prat	Local scale
• Municipality of Viladecans	Local scale

As an example of the work achieved, see the Standard Indicator Format (SIF) and the preliminary draft of the Indicator fact sheet (IFS) number 2, “Built up land” in **annex 2 and 3.**

In 2007, all these indicators will be produced and compared, giving a good image of sustainability of the coast for the different scales. It is a baseline as indicators can be calculated again in 2 or 3 years to see what have been the trends along time.

4 THE USE OF INDICATORS IN THE ICZM NATIONAL STRATEGIES

4.1 DOCUMENTATION

18 countries have sent to the DG-ENV a report on their national strategies in ICZM.

From this material and other additional information an external evaluation on the ICZM process has been made by Rupprecht, with a final report released 18 of August 2006.

All this documentation can be accessed at the web site
http://ts39060480.teamtreff.de/ICZM/default.aspx

Table of 18 countries and 1 region, and references on their reporting

	Country	Report presented
1	Belgium	yes
	Bulgaria	no
	Croatia	no
2	Cyprus	yes
3	Denmark	yes
	Estonia	No
4	Finland	Yes
5	France	Yes
6	Germany	yes
7	Greece	yes
	Ireland	no
A	Italy (Emilia-Romagna region)	yes
8	Latvia	Yes
9	Lithuania	Yes
10	Malta	Yes
11	Netherlands	Yes
12	Poland	yes
13	Portugal	Yes
14	Romania	Yes
15	Slovenia	Yes
16	Spain	Yes
17	Sweden	yes
	Turkey	no

18	United Kingdom	yes

4.2 COUNTRY ANALYSE

4.2.1 Belgium

Belgium dedicates all chapter 4 of its national Strategy to indicators, giving special importance to the role of indicators in the ICZM process.

An "indicator" has to give an indication of the degree of development of an element or condition in relation to an objective to be reached. However, the term "indicator" is used in a much wider sense in this chapter. A sustainability barometer is sometimes set up in order to monitor a complex issue like sustainable development. Such a barometer consists of a set of data or indicators, which enable complex phenomena to be described in a simple manner. The "sustainable character" of an area can be monitored by means of regular evaluation of these indicators.

Since 2000, Belgium felt the necessity to build a set of indicators on their own needs, and started the development of indicators in the context of the TERRA-CZM project (SAIL).
Belgium collaborated from the beginning with the WG-ID, and the experience of SAIL has been an important input for the set of Sustainable Development indicators of the WG-ID. Belgium has been from the beginning a very pro-active partner.

In the report they use the results of the progress indicators and of some of the SD indicators:

- **Ageing rate at the coast**
- **Extend of stay-over tourism**
- **Number of observed pollution accidents**
- **Residual waste**
- **Unemployment rates**

But Belgium has also set up a "Sustainability barometer" for the coast, where most of the EU ICZM indicators are developed and used. Belgium operates a web site where these indicators are accessible.

Moreover, the country has begun a process of evaluation of the indicators, including a SWOT analysis to ensure scientifically sound indicators and to boost the use of indicators amongst stakeholders.

Belgium makes a number of suggestions for coastal zone management in the future. Main priority is the use of indicators as scientific basis and policy support instruments. An important point to be worked out is the establishment of targets or threshold with the participation of all stakeholders, to define better "distance to target" in order to achieve acceptable sustainability levels. Finally, through this process, it is very important to directly involve stakeholders in ICZM and in the SD of the coast.

4.2.2 Cyprus

The National strategy in ICZM is done in Cyprus on the basis of a CAMP project from PAP/RAC (see Inception report, Coastal Area Management, CAMP CYPRUS, December 2005).

The Project is oriented towards the sustainable management of the whole coastal area of Cyprus, introducing and applying principles, methodologies and practices of sustainable development and Integrated Coastal Zone Management and related tools. The Activities which will be carried out will elaborate and demonstrate the application of principles of integrated coastal management (ICZM) as well as tools for environmental assessment, carrying capacity assessment and environmental fiscal instruments. The project also aims to introduce and elaborate the scope of such tools for raising public awareness. The Project will also address particular attention to socio-economic aspects of coastal management. The Project will elaborate the application of market-based instruments and environmental economics as a basis for the harmonization of coastal policies with private investment concerns.

A number of indicators have been used in the inception report tailored for the CAMP project, which are the following:

- Urban-Rural Population Distribution by District 2002
- The Cyprus Economy: Gross Domestic Product,1996-2201
- Main demand and supply components of the economy, 1996-2000
- Budget Expenditure of Coastal Municipalities 1997-2000
- Population growth and suburbanisation trends in Cyprus*
- Urban and Suburban Population growth by Area, 1982 – 2001*
- Coastal and Non-coastal Population Distribution, 2001*
- Coastal Population Increase in Cyprus 1982-2002*
- Development along the Coast (length of coastal land in km)*
- Number of Tourist Beds 1974-2001*
- Regional Distribution of tourist accommodation capacity at 31.12.2001*
- Population and No of tourist beds in coastal areas by District, 2001*
- Coastal Length, Population and Tourist Beds in Selected Coastal Areas*

The ones marked with an asterisk are included in the ICZM WG-ID indicator set.

The following figures for population growth in the period 1982-2001 clearly illustrate the coastalisation trend:

- 35% total population growth
- 46% total urban population growth
  - 55% coastal urban growth
  - 35% inland urban growth
- 15% total rural population growth
  - 45% coastal rural growth
  - 8% inland rural growth

It is clearly stated (p. 14) that indicators are essential for the follow up of ICZM and Sustainable development and that the building of indicators will be a clear output of the project. The CAMP project will take on board the Sustainable Development indicator set from the EU initiative (WG-ID and EU ICZM Expert

Group). Within the ICAM project, they plan to calculate them and use them for past and future projections. Indicators will also assess carrying capacity analysis.

4.2.3 Denmark

In 2003 the Danish government decided to make a structural reform of the Danish counties and municipalities. The reform has been under development and implementation since then and will be functional from 2007. The process of evaluating the existing practice of coastal zone management in Denmark has been influenced by this structural reform. The Danish regions will be abolished and larger municipalities are being created. The main effect of this on coastal zone management is that the responsibility for water management, nature conservation and spatial planning will pass from the regions to the municipalities. Some responsibilities will be centralized to the national level.
Denmark is thus faced with a new structure in the local management system. The new municipalities will have the challenge of managing the coastal zone and secure a balance between conservation of valuable landscapes and habitat and development of the urban areas, tourism, harbors, farming etc.

Denmark is envisaging its ICZM organization in 2007, after completion of the administrative restructuring. At present they have 12 case studies where ICZM is tested for implementation. At this stage, no further details are given on how this ICZM strategy will be and the **use of indicators is not mentioned so far.**

4.2.4 Finland

Report is not translated into English, and is difficult to analyse.

EU ICZM Indicators have probably been used as Finland was involved in the construction of these indicators in the WG-ID.

4.2.5 France

France gives a high importance to the construction of indicators and data. It is the theme of chapter 2.5.9. of France ICZM National Strategy. In the process of ICZM strategy, the compilation of scientific data and the construction of indicators are necessary for managing and assessing the coast.

The integrated management is based on a number of key information, such as data and indicators, tailored for the different coastal zones and the challenges that they face.

Data are information of the territory, environment and activities taking place in a coastal area. They describe reality and relate with certain scales (of time and space), with measuring strategies (permanent, periodical, occasional, survey…) and with methodologies (captors, filtering, integration, etc…). Data can be collected though networks (thematic or territorial), monitoring campaigns, inquiries, etc. Their number is virtually infinite (e.g. data on water (quality, quantity, fluxes…), data on use of land by human activity).

Indicators are tailored with the aim of assessing or for the decision making. They refer therefore to a goal (strategic or of management) or to a challenge judged as priority to be tackled. Since a data should not be associated with any qualitative judgment (“good”, “bad”…)an indicator refers itself to a standard (“value to be attained” for example) or an

objective (threshold value, tendency) well defined. For a determined project, only a small set of indicators is necessary and need to be used.

France makes distinction between management indicators and evaluation/assessment indicators.

The former give information directly linked to the efficacy of an action, and they are only used in relation to this action (decision, follow up…) and where this action is taken place. These indicators should be normalized to make their construction easier, and to allow comparison amongst different methods of management and identification of good practices.

The indicators used for assessment or valuation should be ordered in a coherent hierarchy: some could be produced at a certain level and aggregated at superior levels. This implies a standardized definition, and methods of production and aggregation normalized at national scale (indicators used to assess the national strategy), or even at European scale (for indicators used at EU level).

France makes a clear reference to the ICZM indicators of the WG-ID, as it participates in the construction of these indicators in the DEDUCE program and in their divulgation amongst French coastal stakeholders.

Les travaux menés par le groupe d'experts nationaux mis en place par la Commission Européenne ont produit une première liste d'indicateurs (voir annexe) ; ce travail devrait être poursuivi à l'échelle européenne ; la France devrait y participer à travers **l'Observatoire du Littoral**.
Le programme DEDUCE, mené dans le cadre INTERREG III C, contribuera au développement d'un jeu d'indicateurs de développement durable utilisables pour mesurer les effets de la gestion intégrée des zones côtières.

Un séminaire sur les indicateurs du développement durable a été organisé à Paris le 23 mars 2006 dans le cadre du programme DEDUCE, et réunissait une partie des lauréats de l'appel à projets pour un développement équilibré des territoires littoraux par une gestion intégrée des zones côtières DATAR – SG Mer réunis pour la première fois à Paris le 22 mars 2006.

Moreover, follow up of the ICZM French Strategy will be organized on the basis of a number of coastal observatories, one at national level, and others at regional (Observatoire des Maures (http://www.observatoire-marin.com/), Observatoire de l'Aquitaine (http://littoral.aquitaine.fr/)) and local levels (at project scale).

The national observatory of the coast has been created in 2003, regional and local observatories are collaborating through an agreement with the State, reinforcing local, regional and national networks in the construction of indicators for the coast.

L'Observatoire du Littoral (http://www.ifen.fr/littoral) est mis en oeuvre dans le cadre d'une convention cadre regroupant les Ministères en charge de l'environnement et de l'équipement, la DIACT, le Secrétariat général de la mer et l'Institut français de l'environnement, opérateur technique de l'Observatoire. Il est intégré à l'Observatoire des territoires piloté par la DIACT. Ses missions sont de suivre l'évolution du littoral, de mutualiser les efforts de connaissance et de diffusion de l'information et d'apporter un appui à l'aide à la décision.

All the information produced and maped is available at the IFEN web site http://www.ifen.fr/

They have worked on priority on the coastal information that is needed to build reference data:

- Coverage with ortho-photo of the French Coast
- Maps of benthic habitats (REBENT project, IFREMER)
- Sensibility map of coastal environments (e.g. Atlas of the fauna and flora of the coasts)
- The construction of a geographical reference specific for the coast and accessible to every body (IFREMER, SHOM and CNIG have worked since 2000 on this reference basis and a Commission for a coastal GIS has been created).

Sur la base des travaux de cette commission, le Conseil National de l'Information Géographique a conclu à la nécessité de **développer un référentiel géographique littoral** (RGL), couches d'information destinées à constituer la base de tout système d'information littoral, conçu comme une spécialisation sur le littoral du référentiel à grande échelle (RGE).
Dans le prolongement de cette recommandation, le Comité Interministériel de la Mer de 2003 avait demandé à l'Institut Géographique National (IGN, organisme français de référence en matière cartographie terrestre), et au Service Hydrographique et Océanographique de la Marine (SHOM, organisme français de référence en matière de cartographie marine) de s'associer pour développer la couche « topographie continue terre-mer » de ce RGL ; le projet « Litto3D », encouragé par le Comité Interministériel de la mer de 2003 et soutenu par le CIADT de septembre 2004 a ainsi vu le jour, et devrait être déployé sur toutes les côtes française dans les années à venir.

Moreover, France is working on an electronic tool to manage the coast, a geo-portal.

Un site pilote de ce géo portail est prévu pour la mi-2006. Cette étape permettra en outre de préparer la France à la mise en oeuvre de la directive européenne « INSPIRE » en 2007, organisant l'échange des données géographiques liées à l'environnement.

France has taken on board the EU Expert Group and WG-ID SD indicators set. **Most of these indicators are produced in the Observatory of the coast for France in the framework of the DEDUCE project. This ensure future update of the indicators and the construction of long time series.**

Moreover, France has organized a number of workshops to test the "ICZM Progress indicator".

At national level, they are building ahead a good geographic system that needs to be consistent with the EEA GIS and Spatial Data Infrastructure.

4.2.6 Germany

In its national strategy, Germany emphasizes the need for monitoring and indicator building, to get a comprehensive and continuous follow up of the programs developed in regional planning and environmental quality.

For this reason, they make an extensive capture and availability of statistical data regarding the social and economic mainstay of sustainability (see "Integrated Coastal Zone Management in Germany, Assessment and steps towards a national ICZM strategy", p.8)

However, further steps are meaningful, such as formulation, operationalization and application of ICZM indicators and better coordination of monitoring programmes

Germany national strategy put development of ICZM indicators in the four priority actions to be developed:

With respect to the existing set of tools and activities the national strategy envisages four areas in which further steps should be pursued:

- Further optimization of the set of legal instruments according to the basic

ICZM principles

- Creation of the basis for continuation of the dialogue process
- Best practice projects and their evaluation
- **Development and application of ICZM indicators**

The German Strategy does refer to the enhancement of livelihood and employment by securing and developing the necessary frameworks. Moreover the country is developing **proposals for coastal sustainability indicators tailored to the German situation, for which the set of EU SD indicators is taken into accounts.**

However, strategies do not provide quantitative objectives or indicators of progress, making it difficult to monitor progress, but Germany would like to be involved in the testing and bettering of this indicator.

4.2.7 Greece

In its report "Coastal Management in Greece", Greece does not mention specifically the indicators, but instead makes use of some indicators in presenting the problematic and principal issues of the coast. For example, they present a typology of wetlands with their main characteristics, a number of indicators on protected areas, population, etc.

Number per type	% of total number	Area (str)*	% of total area	Length (km)

Number of protected areas	Area (str)*	% of total area

Number of inhabitants	Coastal versus inland population	Population density : coast versus inland

Area of coastal area (2 km from coastline)	Area of coastal region (50 km from coastline)	Population density by coastal regions

In the chapter "Coastal policy" one of the actions presented is "monitoring". Even if they do not detailed the indicators they use, some of them are presented in the text to describe the Greek situation.

The total urbanized coastal area is estimated around 1315 sq.km, that is 1.31% of the total land. This demonstrates a high utilization of land considering the geomorphology of the country. Prospects about coastal urbanization indicate a further increase in the mid and the long term (year 2025). The share of urban coastal population is expected to rise from 59.37% in 1985 up to 86.47% according to the worst scenario. Urbanization in

coastal areas is not expected to be lower than 67.84% by the year 2000 (University of the Aegean, 1993).

In an additional document, Greece presents the tests done with the EU ICZM Progress indicator, which has been used in 13 regions and at national level.

4.2.8 Latvia

The Latvian national report on ICZM (Statement on the progress of implementation of The EC Recommendation 2002/413/EC on Integrated Coastal Zone Management, Latvia, May 2006) refers to the monitoring as an important action to follow up ICZM progress and the sustainable development at the coast. However, it does not mention any indicators.

Following the report, Latvia based its ICZM strategy on a number of key European projects which are strategic in nature to impulse ICZM and sustainable development at the coast.
Some of the most relevant projects are:

- LIFE-Nature project "Protection and management of coastal habitats in Latvia" (2002-2006). http://www.piekraste.data.lv
- LIFE-Environment project "Livonian green coastal region-21 2001-2003), with the aim to ensure integration of principle of sustainability in all sectors http://www.zalaisnovads21.lv
- INTERREG III B project "Integrated Coastal Zone Management in the Baltic Sea/BALTCOAST, a valuable initiative towards implementation of ICZM Recommendation covering the all Baltic sea 82002-2005). It involves 7 countries. It is a pilot initiative for the support of ICZM process and the sustainable development of the Baltic coast.

In these different projects, a number of indicators has been used and can be found at the different web-sites. There are indicators tailored for the aim of the project and there is no use of the EU SD and progress indicators. However, they have used in some project Natural capital indicators from OECD countries.

4.2.9 Lithuania

We found difficulty to read the report written in Lithuanian language. There is apparently no use of indicators in the document .

4.2.10 Malta

In the Malta "Coastal Strategy Topic Paper", there is an important willingness to monitor land and natural resources, land use and economic activities and the status of cultural heritage. The word "monitoring" comes very often, but not associated explicitly to a set of indicators, at least in the text.

This is a kind of contradiction, as Malta has been very active since the beginning in the WG-ID and has helped to develop and build SD indicators and Progress indicators. The country is participating actively in DEDUCE project to build indicators for the Malta coast.

4.2.11 Netherlands

In its report on ICZM national Strategy "EU Recommendation concerning the Implementation of Integrated Coastal Zone Management in Europe. Report on implementation in the Netherlands", **Netherlands give a very high importance to**

indicators, both indicators of sustainable development and ICZM Progress Indicators, making up to 28 references to them in the text.

Indicators used in the report:

- **Sand nourishment operations since 1991 and evolution of basal coastline**
- **Urbanization of coastal zone 1850, 1950 and 2000**
- **Average house prices in the coastal provinces 2005**
- **Proportion of second houses in the coastal provinces, 2004**
- **Tourist nights I the Netherlands (1997-2004)**
- **Guide value for bathing water quality**

These indicators are from the SD indicator set, being indicators or sub-indicator.

Moreover, Netherlands has produced the 27 European sustainability indicators for the Dutch coast using the indicator set of the WG-ID (Annex 1 of the NDL report) (See: *Lescrauwaet A.K,Vandepitte L., Vanden Berghe, E & Mees J.(2006) Europese duurzaamheidsindicatore voor kustgebieden in Nederland: een eerste inventarisatie, VLIZ Special Publication 31. Vlaams Instituut voor de Zee (VLIZ), Oostende, België*).

The report developed, under the form of fact sheets, analyzes for each indicator the data existing in Netherlands and the methodology. The book is a real feasibility study or a test too see which of the indicators can be produced and which not. It has 7 chapters which coincide with the 7 challenges of the ICZN Recommendations. It has been published in March 2006. **The work has been done with the support of Belgium, which have done previously a similar exercise for its coast**. It is a very good piece of work that demonstrates that ICZM indicators are easy to produce, and allow to make a number of very sharp assessment on the tendencies at the coast.

See:

> 8 Duurzaamheidsindicatoren voor de Nederlandse kust (Sustainability indicators for the Dutch coast). Vlaams Instituut voor de Zee, March 2006 – forthcoming.

Significance and future use of indicators

The differences between the individual coastal provinces are frequently greater than those between the coast and inland areas. For example, there are huge differences between the more heavily urbanised and inhabited coast of North and South Holland and the emptier and more natural coastal areas in the north of the country. The set of indicators is, of course, open to improvement. For example, flood protection is not included in this set of sustainability indicators, but is regularly assessed in the Netherlands on the basis of careful monitoring of the coastline and other information (see box on Preservation of the Basal Coastline on page 6).

In selecting a set of indicators for future use, the availability of the necessary information will be an important criterion. Whether or not identical to the present set, the chosen indicators can provide the basis for a regular national reporting system, based so far as possible on data which are simple to collect.

Another important aspect is the identification of the land/sea interface which is absolutely crucial for coastal planning an management. A number of new indicators should be also derived from this information and mapped.

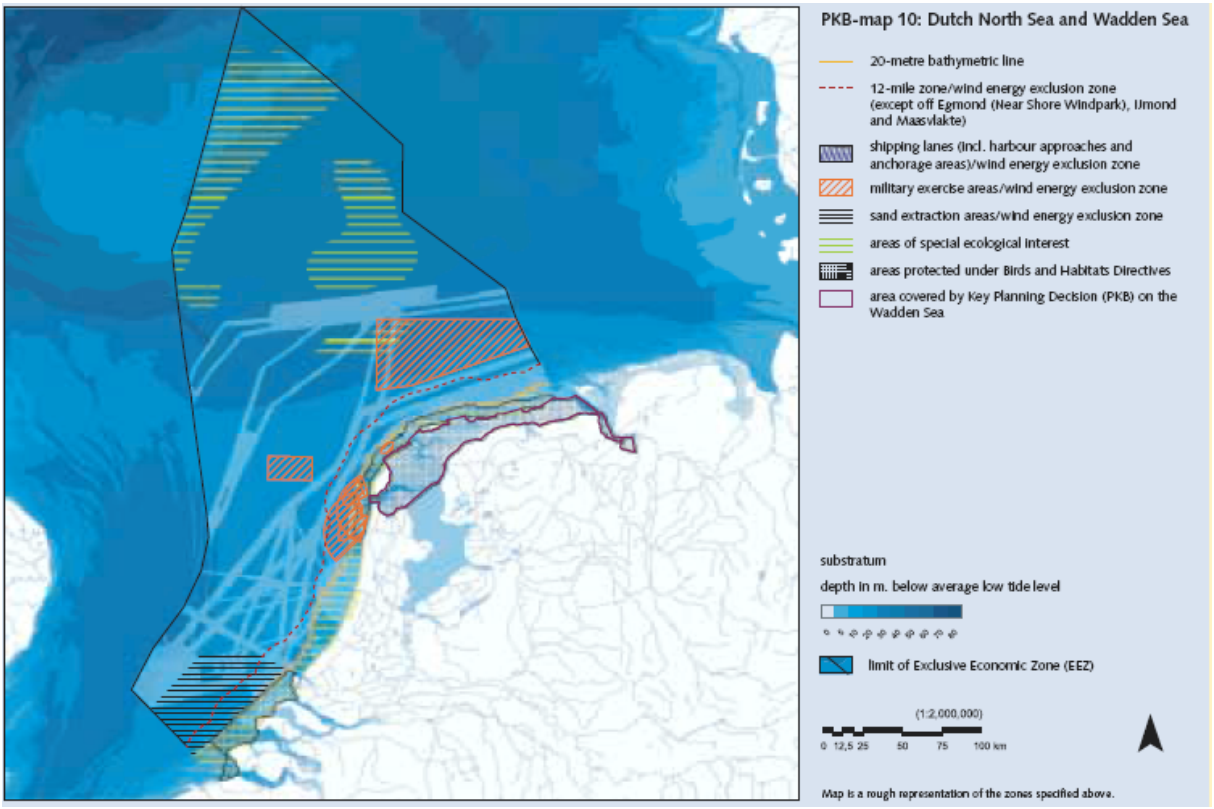


Fig. 7: Dutch map on the uses in the land-sea interface of North Sea and Wadden Sea

4.2.12 Poland

In the Polish report "Towards a National Strategy of Integrated Coastal Zone Management" (November 2005), indicators of ICZM have been used in some chapters.

One of the actions envisaged in the strategy is to provide easily accessible, understandable, reliable and full information about the Coastal Zone. The model followed is the EU ICZM set of SD indicators.

The range of monitoring should agree with the SD indicator set developed by the Working Group "Indicators and Data" established by DG Environment (p.10).

Poland has also participated in the testing of the ICZM Progress indicators.

Though its participation in BALTCOAST project, Poland has a convenient view to integrate land and sea in planning practices. A number of indicators should be build to make a follow up of land-sea integration in planning and management.

4.2.13 Portugal

In its report, Portugal indicates **that they used the indicators of the WG ID, especially the indicators to measure sustainable development.**

È feita a caracterização do território continental, nas suas componentes biofísicas, socioeconómicas e ambiental com base na lista de Indicadores de Sustentabilidade desenvolvidos pelo "Work-Group on Indicators and Data" (WG-ID), da Agência Europeia do Ambiente (AEA). A caracterização realizada mostra que, ainda que a zona costeira do território nacional continental apresente grandes potencialidades e valor estratégico do ponto de vista social, económico e ambiental e conservacionista, esta encontra-se sujeita a grandes pressões, fruto de uma litoralização crescente que se verifica com maior expressão desde a segunda metade do século XX.

Moreover, they also used and tested the ICZM Progress indicators, whith the following results:

> Considerando a análise do sistema de planeamento e políticas que foi realizada, com especial destaque para os últimos anos, foi feita uma avaliação do seu grau de integração horizontal, recorrendo para tal à lista de indicadores de progresso, do WG-ID/AEA. Esta análise teve como suporte informação recolhida através das Comissões de Coordenação e Desenvolvimento Regional. As conclusões a retirar indicam uma evolução positiva, mas ligeira, em relação ao grau de implementação da GIZC em Portugal.

In the complementary document "Projecto Relatório Grupo Trabalho "Bases para a Gestão Integrada da Zona Costeira". 23 Janeiro 2006", Portugal clearly includes the use of indicators for monitoring the national ICZM programme in their national strategy:.

> Assegurar a Gestão Integrada da Zona Costeira (GIZC), através do estabelecimento de novas formas de relacionamento institucional, da definição de opções de aplicação de fundos estruturais específicos e da aplicação de critérios técnicos ajustados à realidade europeia e da adopção de um sistema de indicadores;

4.2.14 Romania

The report "Outline Strategy for the Integrated Management of the Romanian Coastal Zone, Towards implementation" has been written in 2004 in the framework of the project "Implementation of the WFD and ICZM in transitional and coastal waters in Romania". Therefore, the Romanian strategy was designed when the indicator work done by the WG-ID was in progress.

Anyhow, the document makes a diagnosis of the coast with main problems mapped in the figure below.

The document gives a number of strategic priority actions and highlights the importance of monitoring both the trends and the efficacy of the actions. Monitoring is mentioned 18 times. But there is no mention at all of the use of any indicators.

However, Rumania has participated in the WG-ID since the beginning, and is aware of the importance of indicators.

The gap is probably due because the document they have used as "National Strategy reporting" has been written at a moment when the indicators were still in development. The positive thing is that under monitoring actions, a number of indicators can be chosen and produced.

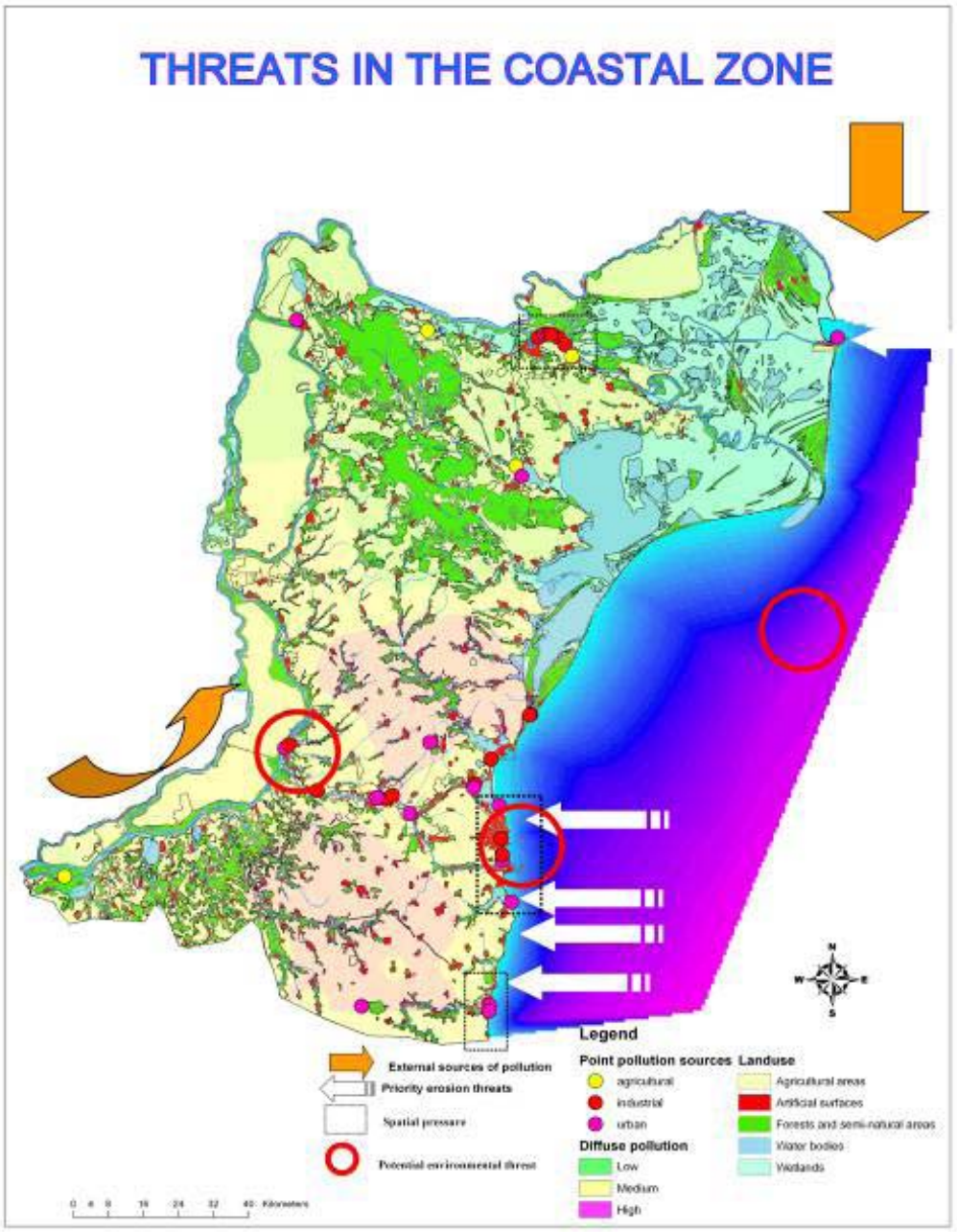


Fig 8: Main threats in Romanian coastal zone

4.2.15 Slovenia

Having into account the short coastline of Slovenia, ICZM has been integrated in a Regional Development Strategy (RDS) for South Primorska region.

ICZM in Slovenia has been boosted by PAP/RAC and CAMP project (2002-2006). They have used the set of sustainable indicators developed by the Blue Plan, prior to the development of EU WG-ID indicators. Some of the CAMP indicators have been taken on board in the EU sustainable development indicators set for the coast.

In the CAMP framework a Systemic and Prospective sustainability Analysis project has been finished. In this project a set of sustainability indicators have been agreed, past development trends and future development scenarios have been formulated and assessed, a desirable scenario was identified and most important strategic actions were proposed. The whole process was based on a participative approach; on five workshops more than 50 stakeholders from various ministries, municipalities, business and NGOs participated.

Chapter 3.3.4 of the RDS project on Primorska region (2002-2006), there is a short list of indicators, basically socio-economic indicators.

Indicators have been used and will be used to follow up the actions at regional level, with a clear potential to introduce EU ICZM indicators to complete the set that they have, based on their regional needs and on the follow up of the CAMP programme during 2007-2013.

4.2.16 Spain

In the Spanish Final Report on "Gestion Integrada de Zonas Costeras en España" (2006) Spain has performed a very complete use of the UE ICZM indicators, developing the 27 SD indicators for Spain, some being compared amongs regions (Comunitats Autònomas). See pp. 70-79 the presentation of the preliminary results.

See the following figures presented as examples.

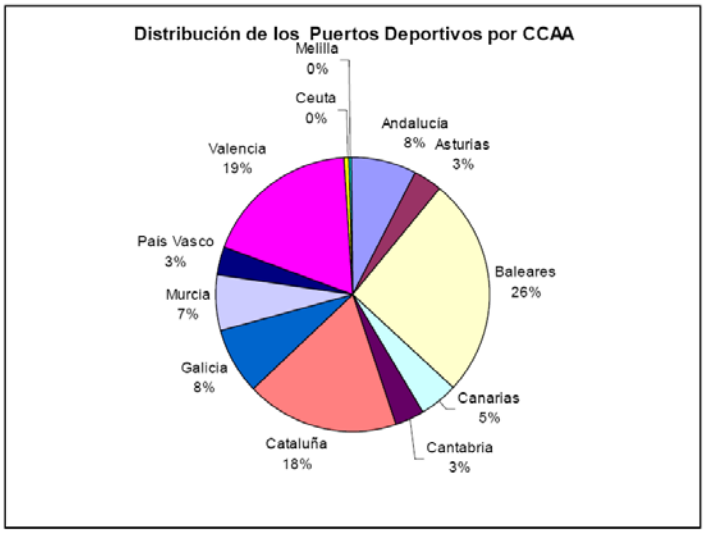


Fig.9: Distribution of marinas by NUTS 2 in Spain

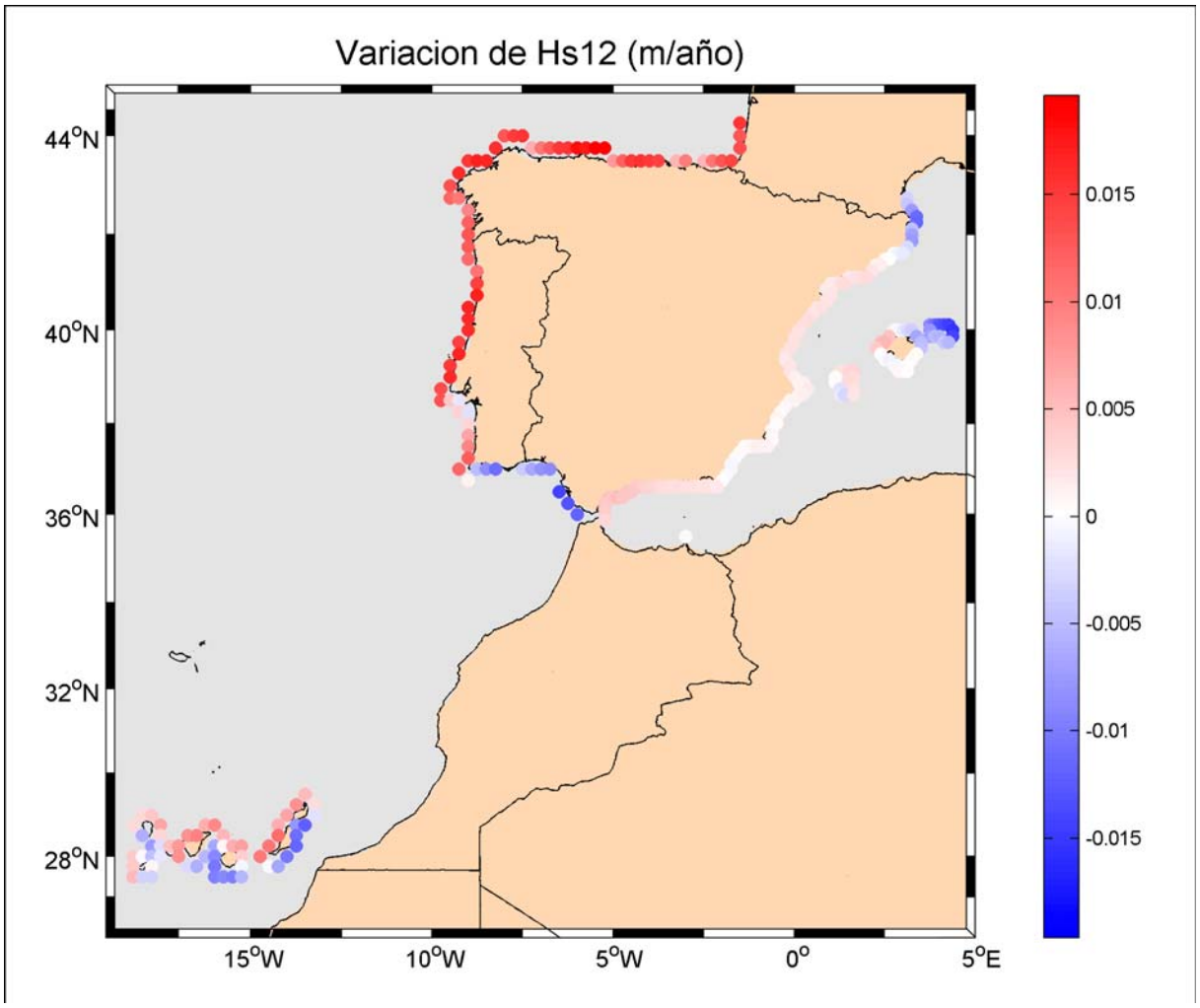


Fig. 10: Wave height distribution along Spanish coast

They have also tested the ICZM Progress indicator with a result that show clear progress between 2000-2005 (See chapter 2 for more information).

Moreover Spain plans to continue with the use of the WG-ID indicators and develop them, together with other indicators, in the Observatorio del Desarrollo Sostenible para el Litoral (ODSL).

4.2.17 Sweden

The document is in Sweden and we had problems to understand.

Sweden has based its ICZM strategy mainly on spatial planning and makes reference to indicators to follow up the planning actions in a transparent way. They are indicators tailored for their own needs. As far as Swedish can be understood, there are no references to the EU ICZM Indicators.

I planeringen skall ett indikatorbaserat arbetssätt användas/jfr DPSIR-modellen/för att kunna följa upp miljöförändringar och föreslå korrigerande åtgärder. Spridning av goda exempel i form av en "kokbok" har föreslagits. Planeringsprocesser med underifrånperspektiv rekommenderas varför"transparenta processer" är viktiga.

Sweden participates in different EU projects such as MESSINA, PURE, SEAREG and ASTRA. In most of these projects, indicators to follow up trends and efficacy of responses are tailored. It is to be seen if they will be only applied on the regions where projects are developing or if they will serve at national level.

4.2.18 United Kingdom

UK is constructing is ICZM strategy with a view to connecting river basins, the coastal zone and the sea.

They use and will continue to build and use indicators to evaluate the implementation and application of the community legislation and policies that have impact on coastal areas.

- WFD
- Bathing Water Directive
- Shelfish Water Directive
- Urban Waste Water Directive
- The Nitrates Directive, defining nitrate vulnerable zones,
- The Integrated Poluution prevention and control Directive
- The Environmental Impact Assessment
- The Stategic impact assessment, the Habitat Directive and the Birds Directive.

Moreover, they plan to work with the sets of EU ICZM indicators as reported below:

Each of the UK administrations will review progress against the strategies on ICZM and other related activities on a regular basis, and undertake further action where necessary. Through these strategies we are reviewing the work of the Working Group on Indicators and data, set up by the EU's ICZM expert group, including an ICZM progress indicator, and indicators of sustainable development. We are exploring how indicators might be applied within the different parts of the UK.

UK has participated also to the testing of ICZM Progress indicators, organizing a number of specific Workshops. Results are presented in chapter 2 of this report.

4.3 SYNTHESIS TABLE

Countries:

Group 1: Denmark and Italy have no report on ICZM strategy, so no analysis on indicators can be performed.

Group 2: Document written in national language and no possibilities of translation. Even if some results are marked, they are not included in the final number, nor in the analyses in order to avoid misunderstandings.

Therefore only a total of 14 countries are analyzed.

Columns have been organized with 3 levels indicated by 3 colours:

first level: Indicators used with the aim to measure ICZM or sustainable development in a specific country or region based on their monitoring needs, including the use of indicators from ICZM projects such the PAP/RAC CAMP indicators.

second level: EU Indicators used for measuring SD and ICZM progress. Countries and region which have used, constructed, tested the set of EU indicators from the WG-ID and have used them directly (or plan to used them) in the implementation of their national strategy. The 2 last columns support the use of these indicators with added information :"the national strategy takes into account the land-sea interface", and "participation of the country in the WG-ID or in DEDUCE", which indicate a long voluntary effort since 2002 from these countries to support the making and testing of EU ICZM indicators: the 27 indicators to measure Sustainable development at the coast and the ICZM progress indicator.

	Use of specific tailored indicators for National needs	Use of a number of indicators from EU SD or other e.g.CAMP indicators	Developping all the EU SD indicators in books, webs, observatories	Testing of ICZM progress indicators	Land /Sea data/mapping	Participation in WG-ID & DEDUCE	Summary
Belgium	yes	Yes (SAIL)	yes	yes	yes	WGID+D	☺☺☺
Cyprus	yes	yes(CAMP)	Plan to do	Plan to do	Only marine reserves		☺☺
Denmark	---	---	---	---	unknown		
Finland					unknown	WGID	
France	yes	yes	yes	yes	yes	WGID+D	☺☺☺
Germany	yes	yes	Plan to do	Plan to do	yes	WGID+D	☺☺...
Greece	yes	yes		yes	Only marine reserves	WGID	☺☺...
Italy (reg. Emilia-Romagna)[1]	yes	yes		yes		WGID	

[1] We show results in general table, but there is no specific chapters as it is a region, not a MS

Latvia					yes	D	
Lithuania							
Malta	yes	yes	yes	yes	Marine reserves	WGID + D	
Netherlands	yes	yes	yes	Plan to do	yes	WGID (seasonal)	
Poland	yes	Yes, BALTCOAST	Plan to do	yes	yes	WGID+ D	
Portugal	yes		yes	yes			
Romania						WGID	
Slovenia		Yes, (CAMP)					
Spain	yes	yes	yes	yes	yes	WGID+ D	
Sweden	yes	Yes (SEAREG Messina…)					
UK	yes	yes	yes	yes	yes	WGID (seasonal)	
	11	11	7 +3 (plan to do)	8 + 3 (plan to do)	11	10+6	

Fig 11: Summary of the ICZM indicator development and use by country

Yellow level shows that a high number of countries (11 upon 14) have expressed their need to tailor specific indicator to measure trends in their countries or/and to make a follow up of their ICZM strategy (11 out of 14). Some of them have used available indicators built on different projects.

Green level shows the countries which have undertaken a specific test and use of the EU ICZM indicators (7 from 14 have used the SD indicator set, 9 0f 14 have used the ICZM progress indicators). The number of countries working on a voluntary basis at the WG-ID is also 10. 7 of these countries are involved as DEDUCE partner in the building of indicator at national/regional levels.

This shows the importance that the WG-ID has had to support and straighten the use of ICZM indicators in the different countries.

The lack of data for Finland because no translation in English has been possible so far probably hide another country that is highly involved in indicator development and has participated actively since 2003 in the WG-ID.

The synthesis table of results shows a quite good progress towards the use and "planning" of use of ICZM indicators. Five countries are building these indicators on a normal basis in their observatories and using them or willing to use them in a normal basis (Belgium, Netherlands, UK, France and Spain). Four countries are really doing efforts to implement ICZM indicators and to use them (Germany, Malta, Poland and Greece). Two more countries are following the pace with willingness (Portugal and Cyprus).

In total 11 countries out of 14 are making good progress in the implementation and use of the EU ICZM indicators.

Three more countries are at the beginning of the process, all three are new Member States (Latvia, Romania and Slovenia).

Another question is for what countries want to develop and use these indicators. Some hints are given in the national reports. The four functions are:

- Data collecting/monitoring
- Communication
- Assessment for policy or management evaluation
- Support to decision making

MONITORING, data collection often included in a GIS, appears to be the main function of the indicators when used, basically to know the trends along time and collect information about coastal processes.

Most of the countries say that they use the indicators for **COMMUNICATION** (raising awareness…).This is specially reported for the use of the ICZM Progress indicator.

Some countries (Belgium, France, Germany, UK and Netherlands) need to use the indicators for **ASSESSMENT** in policy or management evaluation. They mention the difficulty then to establish "distance to target".

The function of indicators to **SUPPORT DECISION MAKING** is reported in few countries. Germany and France expressed openly this need.

In general, the potential of indicators is still not fully understood. Indicators have not penetrated the practices and are still used at a low level. It remains a technical instrument, but there are weaknesses in other kind of uses. Therefore, as it role is not still well understood, the application of indicators is still weak, and needs to improve.

However, progress are evident since 2002, and are mainly due to the work done around the ICZM Recommendation, and building motivation by networking, informing and raising awareness of Member States to step into the ICZM process.

5 OTHER RELEVANT USES OF THE WG-ID ICZM INDICATORS

5.1 COST-ESF PROJECT (2005)

A sponsored COST-ESF expert Workshop on Sustainability Indicators for the Coastal Zones of Europe took place the 25th and 16th of April 2005 in Howth, Ireland. See: *Cummins V.,O´Mahony C, Gault J, & O¨Sullivan G (2005): "Report of the COST_ESF sponsored expert Workshop on Sustainability Indicators for the Coastal Zones of Europe", Marine Institute, Dublin.*

Successful environmental policies need to be underpinned by relevant and reliable information. The main aim of COST-ESF Indicator Workshop was to identify a suite of robust indicators for the sustainability of the coastal zones in Europe in order to provide reference points against which changes in the coastal zone system could be quantified for political and regulatory use and public information.

Specific objectives of the workshop were to:

1. Identify a suite of usable Sustainability Indicators for use in the Coastal Zone.

2. Identify key projects (model projects) developing and/or testing the applicability of Sustainability Indicators for use in the Coastal Zone

3. Identify data issues that must be addressed in order to make sustainability indicators more usable by the coastal practitioner community

4. Identify the main issues (methodology/science, data and application) that need to be solved in order to have a suite of robust and user friendly Sustainability Indicators for Coastal Zone

5 Outline the core issues to be addressed, with related possible methodologies, to solve the above in order to deliver such Sustainability Indicators.

Outcomes of the Workshop:

- A great deal of effort is currently underway in relation to coastal indicators in Europe.
- HELCOM has established a range of 17 ecological indicators under the headings of
    - Eutrophication
    - Hazardous substances
    - Biodiversity and nature conservation

As tools to measure HELCOM's vision of a healthy Baltic Sea environment.

- From the EU perspective, progress has been made by the European Environment Agency (EEA) and by the EU Working Group on Indicators and data (WG-ID), established in October 2002. The work of both, EEA and WG-ID, should reveal if Member States are moving towards a more sustainable future for European coasts.
- The WG-ID, co-ordinated by the European Topic Center for Terrestrial Environment, have produced a suite of WG-ID progress indicators to measure how far ICZM has been implementes, and a suite of WG-ID Sustainibility indicators to measure the success of coastal management initiatives. The WG-ID indicators have the potential to be implemented at a variety of scales.

- The EUROSION project, completed in 2004, developed indicators to establish the Radius of influence of coastal erosion (RICE).
- SAIL project (socio-economic indicators)
- Coastwatch project: coastal indicators based on EO data
- COPRANET project (indicators for sustainable coastal tourism destinations)

It was generally agreed by the workshop participants that a significant amount of preparatory work in indicator identification has been done, particularly by the WG-ID. The emphasis in going forward shoud be on testing the suitability of these indicators to establish appropriate scales and methods for their implementation and refinement. Particular attention should be given to the indicators identified by the WG-ID as these should be endorsed by the EU Expert Group on ICZM which was established by the European Commission and covers representatives of 20 EU coastal Member States.

Since April 2005, an important work has been done and the EU ICZM indicators have been tested (see chapter 3 and 4).

5.2 MEASURING SUSTAINABILITY ON THE COAST: THE BELGIAN 'SUSTAINABILITY BAROMETER' (2005)

The sustainability barometer is accessible on www.kustbeheer.be/indicatoren. The information is only available in Dutch. However, the SAIL partnership is compiling a similar set of indicators for the Southern North Sea as a whole
As they become available, they will be posted on the SAIL website.

The SAIL partnership has contracted the Flanders Marine Institute (VLIZ) to draw up and calculate a set of indicators of sustainable development of the Southern North Sea coastal area. The initial target is to present a 'state of the coast' report to the second Southern North Sea Forum (http://sailcoast.org).

5.3 NETHERLANDS BOOK ON "EUROPEAN SUSTAINABILITY INDICATORS FOR COASTAL ZONES IN THE NETHERLANDS: A FIRST INVENTORY" (2006)

Netherlands has launched in 2006 a very nice publication with the development of the 27 EU ICZM indicators and their measurements for the coastal zone of the country. The book published by the Vlaams Instituut voor de Zee (VLIZ), present for each indicator a fact sheet with maps and tables shoing results and short messages saying what does the results mean, what does the measurement show, why monitor this parameter and what are the implications for planning and managing the coast.

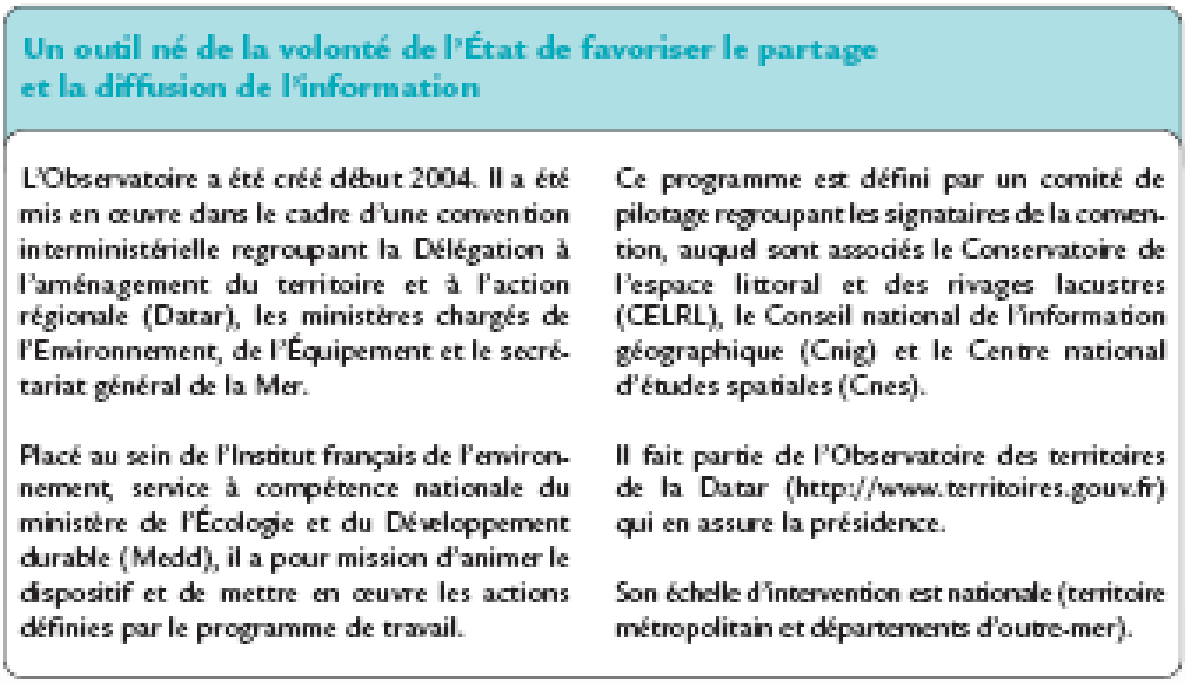
Lescrauwaet A.K,Vandepitte L., Vanden Berghe, E & Mees J.(2006) Europese duurzaamheidsindicatore voor kustgebieden in Nederland: een eerste inventarisatie, VLIZ Special Publication 31. Vlaams Instituut voor de Zee (VLIZ), Oostende, België)128p. ISBN 90-81008-14-5

5.4 NATIONAL OBSERVATORIES AND ICZM INDICATORS TAKEN ON BOARD

A number of national observatories have been launched since 2002 and are today functioning and producing.

- L'Observatoire du littoral (IFEN, FRANCE): http://www.ifen.fr/littoral/index.htm

The coastal observatory, created in 2004, depends upon a framework agreement between the ministries in charge of the environment and public works/Equipment, la DIACT, the General Secretariat of the Sea and the French Institute of Environment (IFEN), which operates technically the observatory. This observatory is included within the observatory of land/territories, l'Observatoire des territoires, piloté par la DIACT. Its mission is to follow the evolution of the coast, to diffuse to all the stakeholders the efforts of management initiatives and knowledge, bringing a support tool for decision making.



Un outil né de la volonté de l'État de favoriser le partage et la diffusion de l'information

L'Observatoire a été créé début 2004. Il a été mis en œuvre dans le cadre d'une convention interministérielle regroupant la Délégation à l'aménagement du territoire et à l'action régionale (Datar), les ministères chargés de l'Environnement, de l'Équipement et le secrétariat général de la Mer.

Placé au sein de l'Institut français de l'environnement, service à compétence nationale du ministère de l'Écologie et du Développement durable (Medd), il a pour mission d'animer le dispositif et de mettre en œuvre les actions définies par le programme de travail.

Ce programme est défini par un comité de pilotage regroupant les signataires de la convention, auquel sont associés le Conservatoire de l'espace littoral et des rivages lacustres (CELRL), le Conseil national de l'information géographique (Cnig) et le Centre national d'études spatiales (Cnes).

Il fait partie de l'Observatoire des territoires de la Datar (http://www.territoires.gouv.fr) qui en assure la présidence.

Son échelle d'intervention est nationale (territoire métropolitain et départements d'outre-mer).

The Observatory participates in the WG-ID and in the DEDUCE project, Its work is therefore fully coordinated with the EU work on indicators and ICZM.

There is also an Observatory for wetlands, but also for socio-economic issues such as society and employment.

L'observatoire du Littoral produce a number of relevant data, maps and 14 indicators on the cost can be downloaded from its website. They publish also a newsletter with the most recent products, maintaining a dynamic network.

Moreover, IFEN produces a set of indicators measuring sustainable development at national level.

- El Observatorio de la Sostenabilidad (Ministry of Environment, Spain) http://www.sostenibilidad-es.org/Observatorio+Sostenibilidad/esp/acercade/

El Observatorio de la Sostenibilidad en España (OSE), creado en 2005, es un proyecto independiente en funcionamiento desde febrero de 2005, con sede en la Universidad de Alcalá (Alcalá de Henares). Inicia sus actividades como resultado de un convenio suscrito por el Ministerio de Medio Ambiente, la Fundación Biodiversidad y la Fundación General de la Universidad de Alcalá.

Its principal objective is to measure sustainability in Spain and in its Autonomous Communities through indicators, to produce a yearly report on the trends and situation.

Fig. 12: Web site of the Spanish observatory on sustainability

ETC-TE is participating in this observatory ensuring that data monitored at nacional and regional levels c¡is compatible with the European scale. As ETC-TE is leadering the WG-ID, bridges are constructed between OSE and WG-ID.

Spain announces in its ICZM National Strategy that they will launched in a near future the Observatory for the coast.

Other Observatories can be found in the different Autonomous Communities of Spain, an example is the catalan Observatory of Landscape which is also interested by coastal

landscapes and the development of indicators for the coast http://www.catpaisatge.net/esp/index.php.

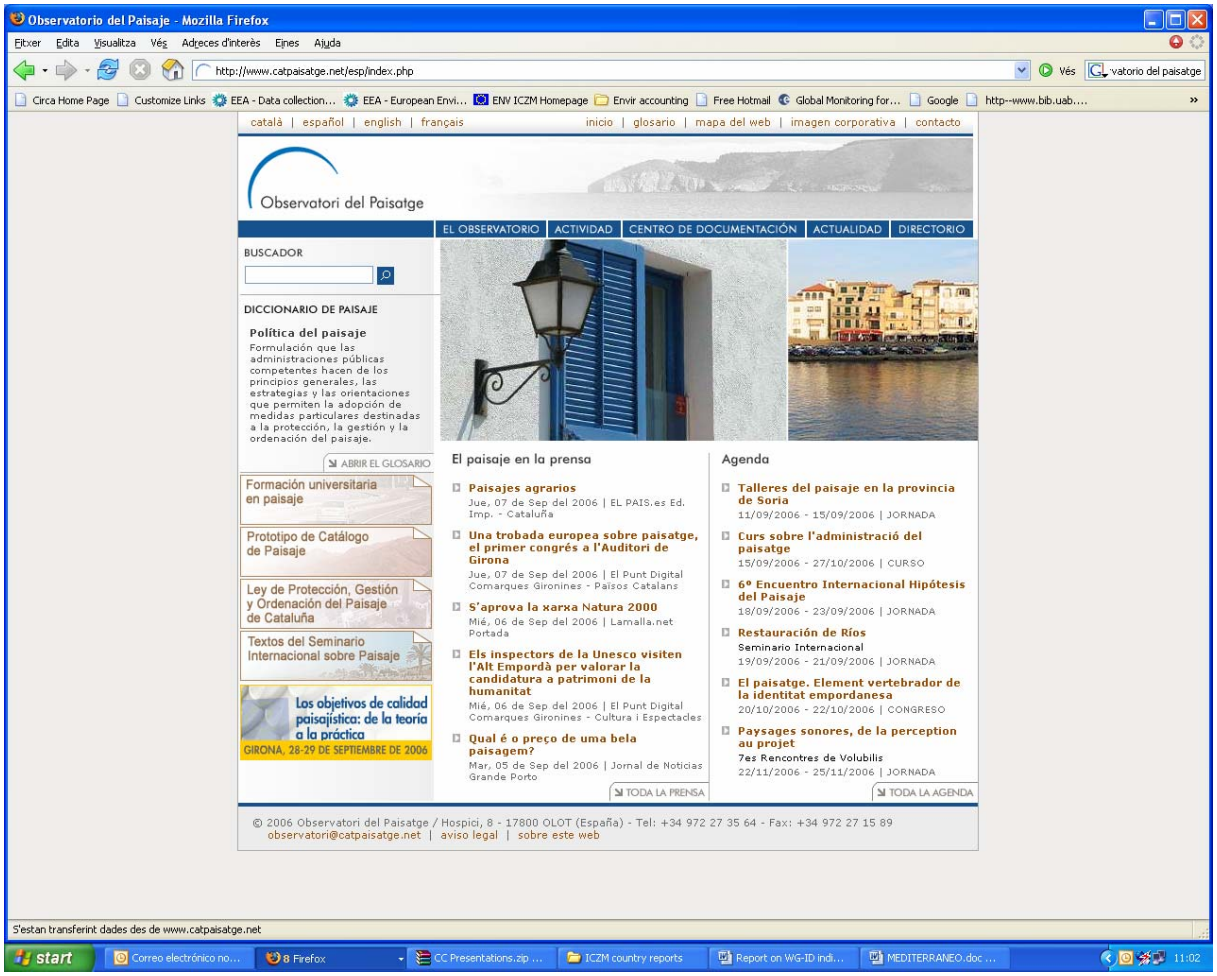


Fig 13: website of the catalan observatory on landscape

5.5 SYNERGIES WITH THE ICZM PROGRESS INDICATOR

5.5.1 Corepoint project

Has performed a number of tests of ICZM progress indicators, and we are pending of results. http://corepoint.ucc.ie/

5.5.2 Coastman project

A report on ICZM Progress marker has been issued from the Coastman project. The harbor of Hamburg wanted to use the ICZM progress indicator to follow and monitor to which extends the harbor was going towards ICZM or not. This initiative gave way to a very constructive criticism of the indicator.

The COASTMAN project presented also an analysis of how the ICZM progress marker could be best used to steer the ICZM process. See Lucius, I., Leal,W., Krahn, D. (2006), Application of the European ICZM Progress Marker: Investigation for Hamburg within the Interreg IIIB BSR project "COASTMAN", EUCC Deutschland & TuTech Innovation Gmbh http://www.coastalmanagement.net/cms/?page=publications

5.6 THE EUROPEAN DIMENSION: EEA REPORT ON THE CHANGING FACES OF EUROPE'S COASTAL AREAS

In June 2006, the EEA has launched a new report entitled "The changing FACE of Europe's coastal areas", which can be freely downloaded at http://reports.eea.europa.eu/eea_report_2006_6/en

This report provides information on the state of the environment in the coastal areas in Europe, and provides evidence of the need for a more integrated, long-term approach…The specific objective of this work is to contribute to the review of the Recommendation of the European Parliament and the Council concerning the implementation of Integrated Coastal Zone Management in Europe (2002/413/EC).

This review requires information on existing trends and on the effects of policies and financial instruments directed towards coastal management.

The EEA intends to contribute to the review by promoting spatial analysis and enhancing the integration of relevant environmental data with related socio-economic data to the extent current available information allows. At the same time, the report aligns itself to the wider context of ecosystems and human well-being set up by the Millennium Ecosystem Assessment (2005). By linking ecosystems and human well-being, this approach focuses in particular on "ecosystem services", i.e. the benefits people obtain from ecosystems.

Climate change and its impact on coastal zones is yet another important analytical framework that is taken into account while analyzing the state of the coasts. The increasing vulnerability of the coastal population and ecosystems becomes a challenge for the ICZM approach, which should achieve a reduction of these vulnerabilities through the coherent spatial organization of coastal zones and by increasing the resilience of coastal systems. (EEA, 2006,p.7).

Policies for the EU coast have a long history but have not been implemented in an integrated manner so far. The situation today presents a great challenge, It also offers opportunities to promote the integration of river basins, coastal zones and marine regions and enhance cooperation with the Water Framework Directive, European Marine Strategy and preparation of the European Maritime Policy. This should be seen within a sustainable development framework and the EU's ICZM Recommendation with the national ICZM strategies (EEA, 2006, p. 9).

The report is the first one in presenting spatial information, and ICZM indicators, to support integrated coastal policy framework. It represents a baseline to monitor the coast and should be updated in 2010 in accordance with the EU's ICZM strategy.

6 CONCLUSIONS:

6.1 STATUS OF ICZM INDICATORS

From the information compiled in this report it appears clearly that:

- Since the ICZM Recommendation in 2002:
    - Important progress has been done in the development of ICZM indicators (both for measuring sustainable development at the coast and progress in ICZM). This development has been supported mainly by Member State, by some regions (especially in federal governments) and also by ETC-TE and EEA in the framework of the EU ICZM Expert Group and its WG-ID.
    - In the application of these indicators for monitoring, countries such Belgium, Netherlands, France and Spain have already developed the EU SD indicator set for their ICZM National strategies. Countries such as Poland, Malta and Latvia are doing it in the DEDUCE program. HELCOM will also use the EU SD indicators in its ICZM strategy.
    - The EU SD indicator set has been recognised by different EU projects such as COST-ESF, CorePoint, Deduce, etc as a good ICZM indicator basis. Some "critics" expressed the need of testing these indicators. In 2006, it can be said that the testing has been done at different scales for the 27 SD indicators and the ICZM progress indicator, showing very interesting results and allowing strong assessment.
    - Some countries, understanding the importance of data gathering and processing and indicator building for the coast, have launched national observatories of the coast (France (2004), Spain (2005)…),
    - All these related developments are positive because they ensure that indicators and data are compiled and build in different countries and at different scales but under a **standardised form** (agreed set of indicator, knowledge of data availability and gaps, a**greed methodology of measurement, etc)** assuring comparability around Europe and allowing to identify and put more **effort on the monitoring of data needed**.
    - At the same time, **this institutionalization of "observatories" or similar allows the updating of indicators along time,** with a potential of long time series.
    - **In this sense, the work of the EU ICZM Expert Group and of its WG-ID has been the motor of the all process.**
    - Moreover, **ICZM progress indicator shows a clear progress between 2000 and 2005 in the implementation of actions towards ICZM implementation**. First and second phases of the process underwent great progress, Phase 3 and 4 needs now major effort to arrive to a fully implemented process. But clearly, process is going on at a pace that can be still quicker if it is supported by the body of existing policies for the coast with much more integrated visions and actions, within the frame of a strong EU ICZM guidance.
    - There is a great potential for indicators application, but still important weaknesses are observed:
        - There is no enough recognition and awareness of the functions that indicators can play

- So far the context of their construction is still far much too technical and do not show the political pertinence they should have.
- Used mainly for monitoring and communication, indicators should be much more oriented towards assessment and evaluation of policy, and in the decision making process.
- To be resonant at European level,
  - ICZM indicators needs to have an agreed set and to be standardized in their methodology. That's done. This first step, worked out within the WG-ID since 2003, will be fully implemented in 2007 with the DEDUCE results.
  - ICZM indicators needs to have different functions, from monitoring and communication to assessment and political support and decision making. There are still lots of efforts to do in this direction. But when countries will understand how this can function, they will really need to develop and use ICZM indicators.

6.2 FUTURE STEPS

6.2.1 Actions proposed in the country reports to update the SD indicator for the coast

- Update scientific basis of indicators with scientist participation
- Establishment of targets or thresholds, and evaluation of the "distance to target" which should be done with participation of stakeholders to build more stringent "policy assessment" and "management" indicators
- Involve more directly stakeholders in the use of ICZM and SD indicators as a tool to overpass conflicts on the one hand and to be more and more present in the decision making process on the other hand.
- Review the set with possible inclusion of new indicators judged necessary for the implementation of national strategies.

6.2.2 Actions proposed

- On the basis of main results, each EU SD indicators give a diagnosis for an issue or a theme. Results for individual indicators should be compiled and cross analysis should be done. Looking at how much 2 or 3 different indicators can bring together more light on some integrated and cross cutting issues, on the assessment of different coastal policies, with a long term view.
- Moreover, the results obtained on the measure of sustainability trends for the coast should be narrowly compared with the development of the ICZM and the progress assessed. Therefore both sets of indicators are complementary and should make synergies between them, helping to review management and policies.
- Most of the ICZM indicators should be represented in space and integrated in the Land and Ecosystem Accounts (LEAC) developed by EEA, reformulating statistical data in standard grids and in a number of fluxes. This will lead to a powerful database organised spatially and in time scales, and will give a powerful frame to go from diagnosis towards prospective analysis.

- Advance towards thresholds and limits can also be expressed in different scenarios, and through a SWOT analysis, assess if it is or not possible to attain the objective in the relevant time frame.
- Both systems, SWOT analysis on a number of scenarios and the inclusion inside LEAC would greatly help to see in which direction initiatives should go and where the risks are. Indicators need to be useful to assess planning decisions and new ways of managing the coast, to assess also impacts of structural funds, etc.
- Therefore indicators would clearly serve to:
    - Impulse a series of actions oriented to objectives, in a determined scenario
    - Measure the "distance to objective" and review actions, impulsing new directions for evaluation of policy and decision making.
    - Formalize a framework of analysis whose indicator results could be expressed in term of opportunity (best corridors for mobility, green corridors, etc) and risk (socio-economic, environmental, biodiversity and landscape degradation, climate change, technological risks, etc)

- There is also a need to have indicators with different functions:
    - Indicators for monitoring, assessing trends, diagnosis
    - Prospective indicators to help in the decision making
    - Spatial indicators to understand how the territory behaves in time and in function of the different decisions taken.
    - Indicators to assess concrete policies such as structural funds, ESPON (development strategies), etc
- An important step has been done since 2002, but efforts need to be continued. Momentum cannot be lost.
- Recognizing the importance of the work done by the WG-ID to steer indicator development and indicator use in countries and regions and amongst coastal practitioners, its task, together to the EU ICZM Expert Group, should continue to fully support the continuity of ICZM process.

ANNEXES

ANNEX 1. GUIDELINES AND QUESTIONNAIRE ON ICZM

EU Working Group on Indicators and Data
Measuring Progress in the Implementation of Integrated Coastal Zone Management
Guidance Notes for Completing the Progress Indicator

A little background

An EU ICZM Expert Group was set up in 2003 to look at ways of helping Member States carry out the EU *Recommendation concerning the implementation of Integrated Coastal Zone Management* (2002). The Expert Group, which includes representatives from all 20 coastal Member States and from two Candidate Countries, established a Working Group on Indicators and Data (WG-ID) to advise it on how countries can assess whether they are moving further towards, or away from, a more sustainable future for their coasts.

After twelve months of looking at different possibilities, the WG-ID suggested that Member States and Candidate Countries should adopt two sets of indicators:

- An indicator to measure progress in implementing ICZM (the 'progress indicator').
- A core set of 27 indicators of sustainable development of the coastal zone (the 'sustainability indicators').

These two indicator sets are directed related. That is, the greater the penetration of ICZM into all levels of governance and activity in the coastal zone, the greater the likelihood that there will be a positive improvement in the state of the coast. And the more the coast is seen to improve, the greater will be a willingness to introduce further and more sophisticated aspects of ICZM. Thus the indicators should mutually reinforce one another to the long-term benefit of the coastal zone.

The progress indicator was road tested during 2004 by coastal practitioners in a number of countries and some revisions made to the original proposal. On the basis of those tests, the Expert Group recommended that all Member States and Candidate Countries should use the revised indicator to make a baseline assessment of how far ICZM is being implemented as part of the roll-out in 2006 of the national coastal strategies required by the EU ICZM Recommendation.

These Guidance Notes have been written to help Member States, Regional Authorities and Coastal Partnerships complete the assessment recommended by the EU ICZM Expert Group.

They include a brief introduction to the thinking behind the indicator, some notes which help explain the meaning of the 'phases' and 'actions', and guidance on how to fill in the indicator table.

Introduction to the progress indicator

Some studies in the past have tried to measure how far ICZM has been implemented in a particular country, region or regional sea by counting the number of ICZM initiatives or coastal actions. Other exercises have gone further *quantitatively* and attempted to measure the length of coast supposedly managed by an ICZM programme.

Both methods are useful in that they help identify who is doing what on the coast and are important building blocks in a stocktake of ICZM activity, but they do not say anything about the *quality* of any particular initiative.

The Working Group on Indicators and Data approached the problem by looking at a number of studies of coastal planning and management from the past two decades. These studies broadly agree that the ICZM process is both *stepped* and *cyclical*. This means that, first, implementation will be phased in over a number of years, and that, second, each turn of the management (or budgetary) wheel over those years will repeat the phases but each time in greater depth and complexity, *assuming that there has been a positive response in the state of the coast*. In other words, the incremental implementation of ICZM will occur only if the process is seen by decision-makers to lead to an improvement in the physical or economic condition of the coastal zone, or a greater ease in its effective planning and management. If there is little perception that the coast is moving towards a more sustainable future, or that the necessary changes in working practices demanded by the ICZM process is more trouble than they are worth, practitioners will struggle to move the ICZM agenda forward and each phase will be repeated but in a weakened state.

The research community generally agrees that there are four phases through which the ICZM process passes:

1. Planning and management are taking place in the coastal zone.
2. A framework exists for taking ICZM forward.
3. Most aspects of an ICZM approach are in place and functioning reasonably well.
4. **An efficient, adaptive and integrative process is embedded at all levels of governance and is delivering greater sustainable use of the coast.**

The WG-ID has adopted these phases and then sub-divided each of them into a number of actions. *It does not follow that all of the actions listed in the indicator table will be implemented in each phase*. Rather, it means that the actions are ones typically found in that particular stage of the development of an ICZM process.

Practical experience suggests that during the first time period or cycle, pioneering authorities or regions might reach into phase 3 of the ICZM process but leave a number of actions uncompleted in phases 1 and 2. During the second cycle, they might complete those actions without necessarily moving on to phase 4. Just as with the diffusion of any other concept or product, more coastal areas will join in as the process becomes understood more widely and ICZM is seen to be having an effect.

What the indicator tries to do is capture the degree to which ICZM is being implemented for a particular place and at a particular point in time.

Completing the progress indicator table

Working together

We know from tests carried out already that coastal practitioners differ in the way that they fill in the progress indicator table. Civil servants working in central government departments, for example, will not necessarily have much idea about what is going on locally. Similarly, local practitioners will have restricted knowledge about what is happening at regional or national levels. Even people working in the same organisation often differ from their colleagues in their assessment of whether a particular action is being fully implemented or not.

We therefore think it best to bring together coastal and marine practitioners from different administrations, organisations, agencies and interest groups to complete the table *jointly*. In this way, we should gain a more accurate picture of how far ICZM is being implemented at all three spatial levels – national, regional and local.

In fact, the act of completing the progress indicator is an important step in helping stakeholders to comprehend better exactly what ICZM is! The debate necessary to decide on an answer, even one as apparently simple as 'yes' or 'no', leads to an exchange of opinions about which organisations and agencies are doing what on the coast, and to what effect.

The Working Group on Indicators and Data recommends that all countries organise a workshop (or, preferably, a number of regional workshops) which bring together stakeholders from all administrative levels to complete the progress indicator table and provide a baseline for reporting under the EU ICZM Recommendation.

Experience has shown that the most effective way of organising a workshop is for someone to first give a general explanation of the purpose of the indicator and what the indicator table represents, and then for participants to split into small groups of about ten persons each. As far as possible, there should be practitioners from all administrative levels in each group. ***Although working in groups, the tables should still be completed on an individual basis***. This is because it is probable that only one or two people at the workshop will be familiar with the same local area. Hence a completed indicator table could show a collective decision for the country and regional levels, but an individual decision for the locality.

Completing the indicator table

Here are the steps you should take to complete the indicator table:

1. Read this section through first and then read ***Phases and actions: some explanatory notes***, which accompany the table. The notes will help you understand what is meant by each phase and each action.
2. Print the indicator table in colour, if possible; this will help you distinguish between the phases.
3. The indicator table is divided into four phases and 31 actions. Alongside each action is a statement about whether or not that particular action is being carried out. You are asked to agree or disagree with the statement. If you think that the action has been implemented, or is being implemented, enter YES. If you think that the action has not been carried out, enter NO.
4. We want to assess how far ICZM has progressed at each level. Hence we want you to enter YES or NO for all three levels in 2005 - national, regional and local. (In some countries, there is no regional planning system – everything is done at the municipal level. In such cases, you would answer NO for regional and either YES, NO or DK for local).
5. We want to try and identify a trend through time; if you can, try and enter YES and NO for each level for the year 2000 also.
6. Continue until you have entered YES or NO for all 31 actions.

It is that simple! However, there are some rules that you must observe:

- Only enter YES if you are sure that the action described is actually taking place or has happened *in full*. If it has been implemented only partly, you must enter NO.
- If you are not sure whether an action is or is not being carried out, enter DK (Don't Know).
- Each YES or NO or DK that you enter must refer to the *same region* and the *same locality* for all 31 actions. Before filling in the indicator table, decide on your region and your local area. This is important

because ICZM initiatives can vary remarkably from one municipality to another - even close neighbours can differ considerably in their approach to coastal planning and management. 'Regional' could be a standard region (Catalunya, Bretagne, Emilia-Romagna, for example) but it could also be somewhere around the size of a province (like a French department, a Swedish län and a Greek prefecture), or somewhere as big as the Wadden Sea, the Gulf of Finland or the Azores. 'Local' could be a municipality, a sedimentary cell or an estuary.

- Please write the names of your chosen region and local area at the top of the indicator table so that we know which places you are thinking about.
- Remember! There are no right or wrong answers. You can only enter YES or NO or DK according to what you know about your local area or your region.

When you have completed the indicator table, it will look something like this:

Phase	Action	Description	National		Regional		Local	
			2000	2005	2000	2005	2000	2005
Planning and management are …	1	Decisions about …	Yes	Yes	Yes	Yes	Yes	Yes
	2	Sectoral stakeholders …	No	No	No	Yes	DK	Yes
	3	There are spatial …	Yes	Yes	Yes	Yes	Yes	Yes
	4	Aspects of the …	Yes	Yes	DK	Yes	Yes	Yes
	5	Planning on the ….	No	Yes	No	Yes	No	Yes
A framework exists for …	6	Existing instruments …	DK	DK	Yes	Yes	No	Yes
	7	Adequate funding …	DK	No	DK	No	No	DK
	8	A stocktake …	No	Yes	No	No	Yes	Yes
	9	There is a formal …	No	Yes	No	No	No	Yes
	10	Ad hoc actions …	DK	Yes	No	No	No	Yes
	11	A sustainable …	Yes	Yes	DK	Yes	No	No
	12	Guidelines have been …	No	Yes	DK	Yes	No	No
		etc., etc., etc.						

Next steps

The workshop organiser must collect all completed indicator tables and send them to the Working Group on Indicators and Data at the address below.

The WG-ID will compute the responses from each workshop or group assessment and keep a running account for each Member State or Candidate Country.

We will send the results of the group assessment to your workshop organiser (and to you if you enter your email address at the end of the Indicator Table).

Results will be presented to the EU IZCM Expert Group on an ongoing basis.

We welcome any comments that you may have about the progress indicator and the way that it is being used. In particular, we want to know about any problems you encountered in understanding the Actions and filling in the Indicator Table and any changes you would recommend (either to the description of the actions or to the explanatory and guidance notes).

EU Working Group on Indicators and Data, European Topic Centre for the Terrestrial Environment, Autonomous University of Barcelona, Edifici C –Torre C5 4a Planta, 08193 Bellaterra, Spain

clive.gilbert@sailcoast.org; francoise.breton@uab.es

+44 7748 634907 +34 93 581 3549

Phases and actions: some explanatory notes

These notes will help you understand the precise meaning of each *phase* and each *action* in the Indicator Table. The notes describe what it is we are looking for with each action. Sometimes they do this by adding something to the *description* of the action, sometimes by commenting on the particular role of the action in the ICZM process.

You should read the notes before you begin to fill in the table and then refer to them as you consider each action.

Phase 1: Planning and management are taking place in the coastal zone

In this phase, the coastal zone is being treated in the same way as anywhere else in the municipality or region. Spatial planning and development control is taking place but the coast is not regarded as a special place requiring a different approach to its planning and management. However, existing instruments could be developed into the basis of an ICZM approach.

Action 1

The coastal zone is not a free-for-all. There are general rules and regulations (of varying degrees of strictness) which guide or determine development. There may be local laws which regulate specifically coastal activities such as boating, sea bathing or fishing. Access to certain areas is restricted to protect wildlife or landscape. We are looking to see whether such general rules and regulations operate in your chosen region and in your chosen locality.

Action 2

Stakeholders meet to discuss specifically coastal issues but there is no cross-sector engagement; sectoral interests speak only to themselves and not to each other.

Action 3

'Spatial development plans' include (i) broad strategic plans typical of provincial or regional planning, and (ii) development controls typical of municipal or local planning.

Action 4

Is any monitoring taking place? Gathering information about aspects of the coastal environment and economy often leads to the coast being identified as a special place requiring special treatment.

Action 5

The significance of the coastal zone for nature conservation is recognised and confirmed by special protection measures.

Phase 2: A framework exists for taking ICZM forward

In this phase, the building blocks of an ICZM approach to coastal planning and management are being put into place. The coastal zone is recognised increasingly as an entity which requires a different approach to elsewhere. Sectoral stakeholders have been identified and brought together to discuss issues of common interest. Actions are beginning to flow from this joint approach; dedicated funding is sometimes allocated for coastal projects.

Action 6

New instruments specially devised for the coastal zone have not been introduced yet but there is a willingness to adapt existing rules and regulations to the reality of planning and managing the coast (for example, zoning inshore waters for different recreational uses).

Action 7

Coastal actions during phase 2 are rarely funded from base budgets. Rather, they receive support from one-off grants or special project allocations.

Action 8

A stocktake is an indispensable first step along the ICZM road to coastal management. Has one been completed that includes your chosen locality or region, perhaps as part of a Local Agenda 21 exercise? Most stocktakes in this phase restrict themselves to identifying those stakeholders who exercise some sort of legal responsibility in the coastal zone. We are not referring here to a more detailed and extensive state of the coast report – this comes in the next phase (cf. Action 14).

Action 9

Having identified a range of interests through the stocktake, the next step is to bring stakeholders together on a regular basis to discuss common issues. Is this happening?

Action 10

What we are looking for are actions which involve a reasonable degree of collaboration between sectoral interests such as coastal defence and nature conservation, or fishing and aggregates extraction.

Action 11

Most Member States (as well as many coastal regions or cities) have produced sustainable development strategies highlighting environmental, economic and social concerns. But do these strategies include specific references to *coastal* phenomena?

Action 12

This action reflects a concern for coastal well-being on the part of national and regional governments. Such concern is expressed through a process whereby provincial or local planning authorities are steered towards the desired outcome via 'planning policy guidelines'.

Phase 3: Most aspects of an ICZM approach to planning and managing the coast are in place and functioning reasonably well

In this phase, a fully-functioning ICZM-based planning and management system is in place. It is characterised by a degree of permanence – in staffing and in funding – and by a fairly sophisticated network of coastal practitioners at all administrative levels. Plans recognise the special nature of the coast and the land/sea interface has largely ceased to be an obstacle to rational management.

Action 13

Here, sectoral interests, which usually have some sort of statutory or legal competence, are joined by non-statutory organisations and interests such as coastal communities, NGOs and pressure groups. The core of this action is that a process exists whereby *all* coastal and marine interests can become involved in discussing coastal issues, should they want to.

Action 14

The ad hoc or partial monitoring typical of earlier phases is succeeded here by a comprehensive study with a commitment to repeat the exercise at a specified future date.

Action 15

Management plans primarily related to one sector, such as coastal defence, recreation or nature conservation, are common. But having a single sector plan is not enough. Here we are looking for plans which are genuinely multi-sectoral and committed to an integrated approach.

Action 16

Strategic Environmental Assessments are an important addition to the ICZM toolbox because they assess policies rather than proposed developments. They can be used, therefore, to push for an integrated approach at an early stage.

Action 17

Non-statutory coastal management strategies are wide-ranging and may include statutory plans. The crucial aspect to look for is whether an action plan has been drawn up and is being implemented.

Action 18

This action reflects the need for joined-up government when dealing with coastal matters, both horizontally (between administrations at the same level) and vertically (between administrations at different levels), from municipalities to central government ministries.

Action 19

Coastal management is cursed by 'temporaryness'; an ICZM approach stresses permanence, not least in terms of someone at each administrative level with just one responsibility – the integrated management of the coastal zone!

Action 20

This action reflects the increasing vogue for marine spatial planning – but is the *terrestrial* part of the coast included?

Action 21

'Sea areas' here could refer to a bay or coastal cell (local), the entire coast within an administrative area (regional) or territorial waters (national).

Action 22

Responsibility for planning and managing the coast is usually (and traditionally) exercised by local or regional planning authorities, with varying degrees of enthusiasm. Elsewhere, competence can be vested in sectoral interests such as port authorities, environment and nature conservation agencies, flood defence organisations, and so on. Recently, however, non-statutory groups of coastal stakeholders have often taken the lead in developing strategies and carrying out innovative, dynamic and charismatic actions (often freed from the constraints of statutory authorities).

Action 23

In most Member States, statutory authorities consult a prescribed list of local and regional authorities, organisations and interest groups about development proposals (including their own planning schemes). Are coastal partnerships and other interest groups also *routinely* consulted?

Action 24

A precept of ICZM is that coastal communities participate in the decision-making process. (Note the verb 'participate' – this is very different to being 'consulted'!)

Phase 4: An efficient, adaptive and integrative process is embedded at all levels of governance and is delivering greater sustainable use of the coast

In this phase, integration between stakeholders is embedded in working practices at all levels and coastal management of the coast is mature, flexible and responsive to new challenges. Information-rich partnerships comprising representatives from the statutory, private, voluntary and public sectors take the lead in both policy development and delivering actions on the ground.

Action 25

Political support in earlier phases could have blown hot and cold. What we are looking for here is constant and effective political leadership at all administrative levels.

Action 26

This action reflects the need for agencies, authorities and interests to collaborate when necessary across administrative, local, regional and international boundaries, including marine ones (such as is intended when the Water Framework Directive is implemented).

Action 27

Goals have been set and progress towards achieving them is being monitored using a set of comparable indicators (such as those developed by the EU Working Group on Coastal and Marine Indicators and Data).

Action 28

'Long term' means a minimum of five years.

Action 29

This action is about ensuring that the huge amount of information on coastal and marine issues is made available to practitioners when they need it and in a form that they can readily use. It implies that end users have been part of the information gathering and disseminating process from the beginning.

Action 30

ICZM is a cumulative process. Each revolution of the management cycle is concluded by an assessment of progress at all levels of governance and a re-evaluation of where best practice lies.

Action 31

Implementing ICZM is not an end in itself. Its purpose is to deliver greater sustainability of the coastal zone: this action attests to whether or not it is achieving success and will be linked closely to the evidence gathered in Action 25.

An Indicator for Measuring Progress in the Implementation of ICZM

Country: **Region:** **Local area:**

Phase	Action	Description	National		Regional		Local	
			2000	2005	2000	2005	2000	2005
Planning and management are taking place in the coastal zone	1	Decisions about planning and managing the coast are governed by general legal instruments.						
	2	Sectoral stakeholders meet on an ad hoc basis to discuss specific coastal and marine issues.						
	3	There are spatial development plans which include the coastal zone but do not treat it as a distinct and separate entity.						
	4	Aspects of the coastal zone, including marine areas, are regularly monitored.						
	5	Planning on the coast includes the statutory protection of natural areas.						
A framework exists for taking ICZM forward	6	Existing instruments are being adapted and combined to deal with coastal planning and management issues.						
	7	Adequate funding is usually available for undertaking actions on the coast.						
	8	A stocktake of the coast (identifying who does what, where and how) has been carried out.						
	9	There is a formal mechanism whereby stakeholders meet regularly to discuss a range of coastal and marine issues.						
	10	Ad hoc actions on the coast are being carried out that include recognisable elements of ICZM.						

	11	A sustainable development strategy which includes specific references to coasts and seas is in place.						
	12	Guidelines have been produced by national, regional or local governments which advise planning authorities on appropriate uses of the coastal zone.						
Most aspects of an ICZM approach to planning and managing the coast are in place and functioning reasonably well	13	All relevant parties concerned in the ICZM decision-making process have been identified and are involved.						
	14	A report on the State of the Coast has been written with the intention of repeating the exercise every five or ten years.						
	15	There is a statutory integrated coastal zone management plan.						
	16	Strategic Environmental Assessments are used commonly to examine policies, strategies and plans for the coastal zone.						
	17	A non-statutory coastal zone management strategy has been drawn up and an action plan is being implemented.						
	18	There are open channels of communication between those responsible for the coast at all levels of government.						
	19	Each administrative level has at least one member of staff whose sole responsibility is ICZM.						
	20	Statutory development plans span the interface between land and sea.						
	21	Spatial planning of sea areas is required by law.						
	22	A number of properly staffed and properly funded partnerships of coastal and marine stakeholders have been set up.						
	23	Coastal and estuary partnerships are consulted routinely about proposals to do with the coastal zone.						

	24	Adequate mechanisms are in place to allow coastal communities to take a participative role in ICZM decisions.						
An efficient, adaptive and integrative process is embedded at all levels of governance and is delivering greater sustainable use of the coast	25	There is strong, constant and effective political support for the ICZM process.						
	26	There is routine (rather than occasional) cooperation across coastal and marine boundaries.						
	27	A comprehensive set of coastal and marine indicators is being used to assess progress towards a more sustainable situation.						
	28	A long-term financial commitment is in place for the implementation of ICZM.						
	29	End users have access to as much information of sufficient quality as they need to make timely, coherent and well-crafted decisions.						
	30	Mechanisms for reviewing and evaluating progress in implementing ICZM are embedded in governance.						
	31	Monitoring shows a demonstrable trend towards a more sustainable use of coastal and marine resources.						

If you are happy to do so, please add your name and email address (we will only contact you if we want to clarify the exact location and extent of your chosen locality).

Name:

Email address:

Thank you for your participation!

ANNEX 2. STANDARD INDICATOR FORMAT (SIF)- DEDUCE

Indicator	
2	Area of built-up land
Measurement	
2.1	Percent of built-up land by distance from the coastline
What should the measurement tell us?	
We want to know the extent to which the coast has been built-up over the past several years because this will indicate the degree of pressure on the coast and the likelihood of further changes in the future. We also want to know whether development on the coast has been greater and more intense than in the wider region. This is why it is necessary to look at the area of built-up land in non-coastal areas as well as on the coast itself. Doing this should also help us uncover what the *pattern* of development has been. For example, has development been characterised by building in a relatively narrow coastal strip, or has it spread a considerable way inland?	
Parameters	
(i)	Area of built-up land (1) in hectares in coastal NUTS 5 as a proportion of the area of built-up land in hectares in the wider reference region.
(ii)	Area of built-up land in hectares in non-coastal NUTS 5 as a proportion of the area of built-up land in hectares in the wider reference region.
(iii)	Percent of built-up land by distance from the coastline in 0-1 km and 0-10 km buffers.

Coverage	
Spatial	**Temporal**
Coastal NUTS 5; 0-1 km and 0-10 km buffers from the coastline	Corine Land Cover datasets: 1990 and 2000
Coastal NUTS 5	National land use surveys: at least three sampling points

Data sources
Data are available from the Corine Land Cover datasets for 1990 and 2000. However, CLC does not cover all countries. There was no coverage in 1990 for Finland, Sweden, UK, Cyprus, Malta and Turkey. By 2000, coverage had extended to all of those countries with the exception of UK and Turkey. Nevertheless, the lack of cover in 1990 means that comparisons with the past cannot be made using CLC and in such cases national datasets must be substituted. For national land use surveys that deliver datasets in shape format, steps 1-12 can be followed. When only numerical datasets are available, the products of step 1 and step 10 can be calculated using the same methodology. However, map 2 and graph 2 cannot be produced.

	Methodology Steps	Products
1	For the wider reference region [(2)], overlay NUTS 5 boundaries with CLC data for both 1990 and 2000, and clip polygons labelled 1.1, 1.2 and 1.3 for each *coastal* NUTS 5. Add up (using GIS statistics function) the area of the polygons	Area of built-up land in hectares within *each* coastal NUTS 5 for CLC 1990 and 2000
2	Repeat for each non-coastal NUTS 5	Area of built-up land in hectares within *each* non-coastal NUTS 5 for CLC 1990 and 2000
All of the following steps should be taken for CLC 1990 and again for CLC 2000		
3	For each coastal NUTS 5, divide the product of step 2 by its total area and multiply by 100	Percent of built-up land within *each* coastal NUTS 5
4	Add together the area of built-up land for every coastal NUTS 5	Total area of built-up land within *all* coastal NUTS 5
5	For each non-coastal NUTS 5, divide the product of step 3 by its total area and multiply by 100	Percent of built-up land within *each* non-coastal NUTS 5
6	Add together the area of built-up land for every non-coastal NUTS 5	Total area of built-up land within *all* non-coastal NUTS 5
7	Add together the products of step 4 and step 6	Total area of built-up land within the wider reference region
8	Divide the product of step 4 by the product of step 7 and multiply by 100	Built-up land in coastal NUTS 5 as a percentage of all built-up land within the wider reference region
9	Divide the product of step 6 by the product of step 7 and multiply by 100	Built-up land in non- coastal NUTS 5 as a percentage of all built-up land within the wider reference region
10	Overlay buffers of 0-1 km and 0-10 km distance from the coastline with CLC data and clip polygons labelled 1.1, 1.2 and 1.3 for each buffer. Add up (using GIS statistics function) the area of the polygons labelled 1.1, 1.2 and 1.3 in each buffer	Total area of built-up land within the 0-1 km and 0-10 km buffers
11	Overlay buffers of 0-1 km and 0-10 km with CLC data and obtain the total area of land for each buffer	Total area of land within each buffer
12	For each buffer, divide the product of step 10 by the product of step 11 and multiply	Percent of built-up land within each buffer

	by 100	
Presentation of the data		
Map 1	For the wider reference region, the percent of built-up land in each coastal NUTS 5 and in each non-coastal NUTS 5, for both CLC 1990 and 2000.	
Map 2	For the wider reference region, the percent of built-up land in the 0-1 km and 0-10 km buffers, for both CLC 1990 and 2000.	
Graph 1	Pie charts showing the percent of built-up land for the coastal and non-coastal NUTS 5 in 1990 and 2000 (or at equivalent sampling points if using national datasets).	
Graph 2	Bar chart showing the percent of built-up land for the 0-1 km and 0-10 km buffers, for both 1990 and 2000 (or at equivalent sampling points if using national datasets).	
Aggregation and disaggregation		
The same methodology can be used to aggregate data at the provincial (NUTS 3), regional (NUTS 2) or national NUTS 0 levels.		
Adding value to the data		

Notes

(1) Built-up land is defined by the Corine Land Cover classification as follows:

- 111 continuous urban fabric
- 112 discontinuous fabric
- 121 industrial or commercial units
- 122 road and rail networks and associated land
- 123 port areas
- 124 airports
- 131 mineral extraction sites
- 132 waste sites
- 133 construction sites

(2) For many countries the Corine coastline does not coincide with the coastline defined by NUTS. In some cases the difference can be as much as two kilometres. It is possible to adjust CLC for this discontinuity.

2. Area of built-up land

Key message

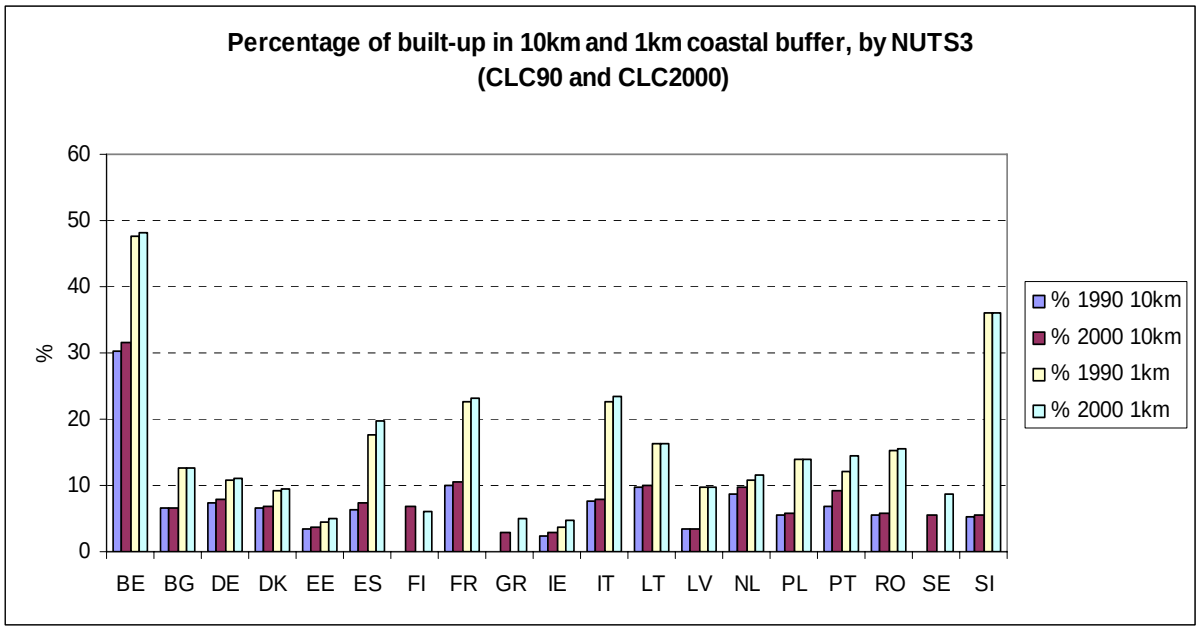
☹ **Over the past decades built-up area has been steadily increasing all over Europe. Most dramatic changes occurred in Western Europe countries, where area of built-up land is increasing at a faster rate than the population. Built-up show an extreme development near the coastline, which is touching the beaches and the more interesting biotops of the coast, such as dunes, coastal forest, wetlands and beaches, and represent on the one hand and important barrier to the fluxes between land and sea. On the other hand the proximity to the sea of this built-up give an extreme vulnerability to the settlements in front of sea storms, floods and other exceptional events.**

Cala del Mal Pas, Benidorm(Alacant), Spain

Why monitor the percent of built-up land by distance from the coastline?

The land, and the way it is managed, affects the entire environment. It is important to monitor changes in land use, especially facing rapid urbanization and urban sprawl. There is a continual need to reconcile the requirements for additional land for important uses such as housing, industry, commerce and retailing with a desire to protect the countryside and agriculture, especially in the fragile European coastal habitats and landscapes.

Europe



Source: EEA, ETC-ET (2005)

What does the indicator show at European level?

During the last decade important land use and land cover changes can be observed in the 10 kilometres coastal strip in the five European regional seas. In general terms, the artificial use of the coastal zone has grown intensively especially in the Mediterranean (804 km^2), and in the Atlantic (690 km^2). The North Sea shows a smaller growth of artificial surfaces (235 km^2), together with the Baltic Sea (142 km^2) and the Black Sea with the lowest value of change (11 km^2). However, in relative term, in relation with the total area of the assessed coastal zone, change to artificial surfaces is almost 15% in the Atlantic, 10% in the Mediterranean, 8% in the North Sea, and 5% in the Baltic Sea. Black sea changes to artificial surfaces represent ca 2.5%. Gains in artificial surfaces represent the highest individual and cover change in the coastal zones of regional sea catchments.

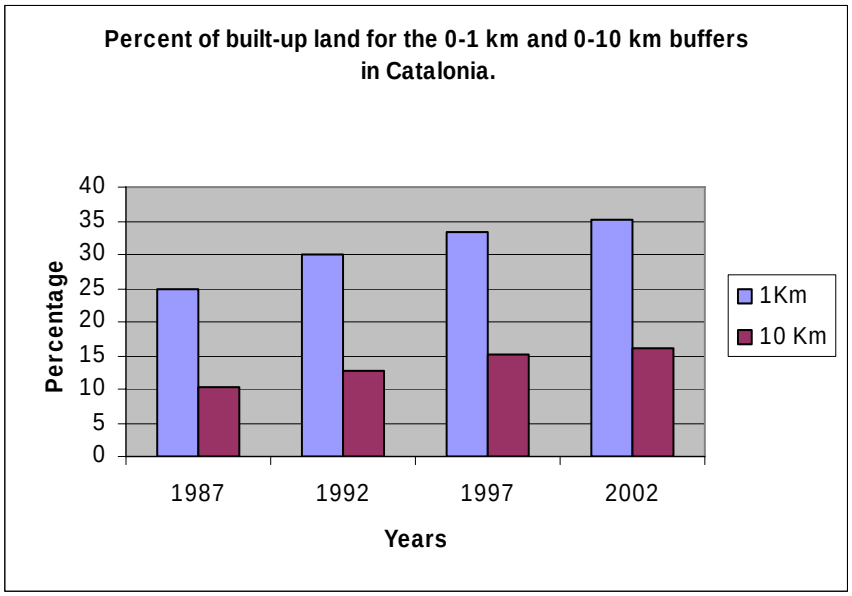
Growth of urban artificial surfaces on the coastal zone of Europe has continued. Projected on the basis of annual growth rate observed during 1990-2000, by 2004 the 1990 levels are exceeded by 12%. The fastest development has occurred in Portugal (34%), Ireland (27%), Spain (18%), followed by France, Italy and Greece. The most affected regional seacoast is the Western Mediterranean.

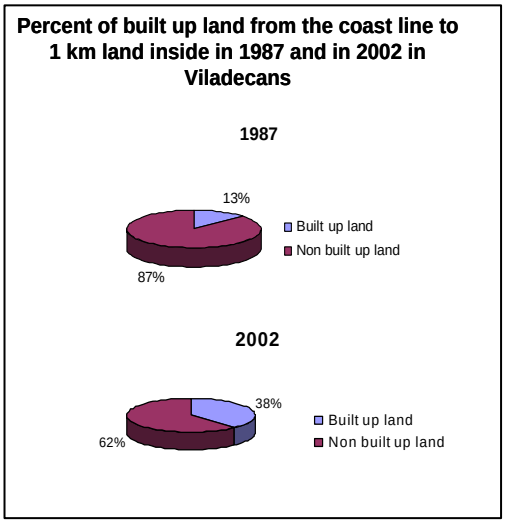
Inside 10 km coastal zone, urban surfaces are dominant on the first kilometre from the shoreline. In several coastal regions of Belgium, Italy, France and Spain the coverage of built-up areas in the first kilometre coastal strip exceeds 45%. In these areas further development is sprawling to the coastal hinterland.

In 2000 the share of area covered by artificial surfaces was 25 % higher on coasts than inland. During 1990-2000, trends in European coastal zone show that growth rate of artificial surfaces on coast has been about 1/3 faster than inland

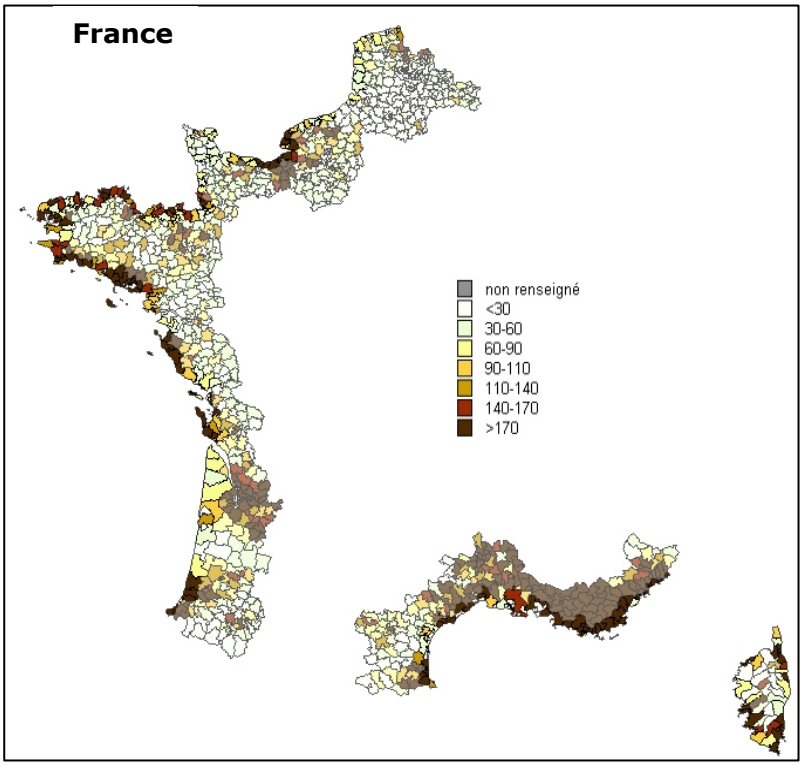
DEDUCE regions

Analyzing the built-up land by distance from the coastline in the Deduce regions, it becomes apparent, that urban surfaces are far more present on 1 km from the coastline. Therefore the immediate coastal strip (first kilometre from the coastline landwards) is the area receiving most pressures, which are really intense in some areas of the coast especially in the Mediterranean coast (Catalonia, Viladecans Malta where the rate of increase in built up land for the 0-1km for 1990 and 2000 period was 3%)



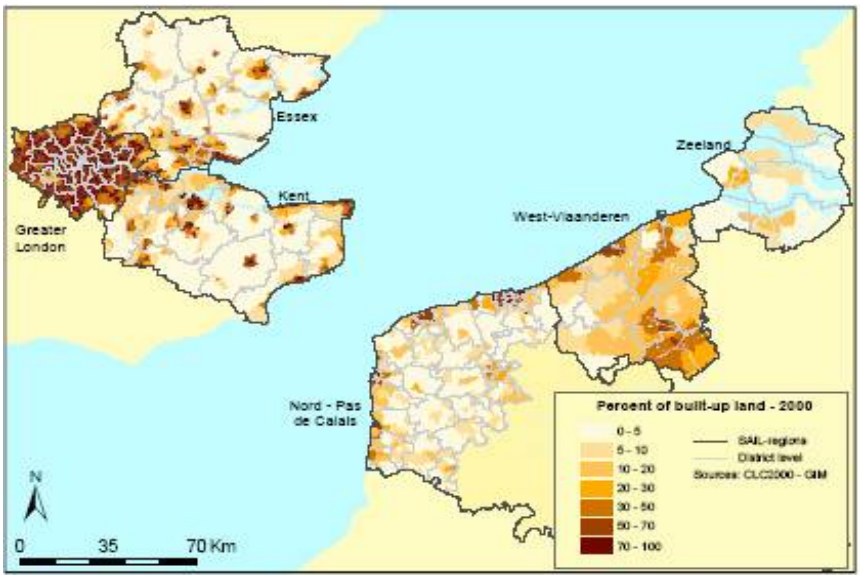


In the Atlantic, the entire French coast is also intensively occupied, even the wild coast of Brittany. However, trends show that the new constructions are sprawling farer from the coastline, provoking a shift of more occupation of the second and third development front of the coast. the near coastline is reserved for the seasonal tourist whether coastal hinterland becomes the home place of the yearly residents, which continues most of them to work in the coastal cities or in tourist activities.



Many North Sea coasts are also very intensively built-up. The coastal zone of the southern North Sea is on average more urbanized than the inland areas (16 % versus 10 %) in 2000. There is considerable difference between sub-regions. Essex and Zeeland are the less urbanized (10 % and 4 % respectively).

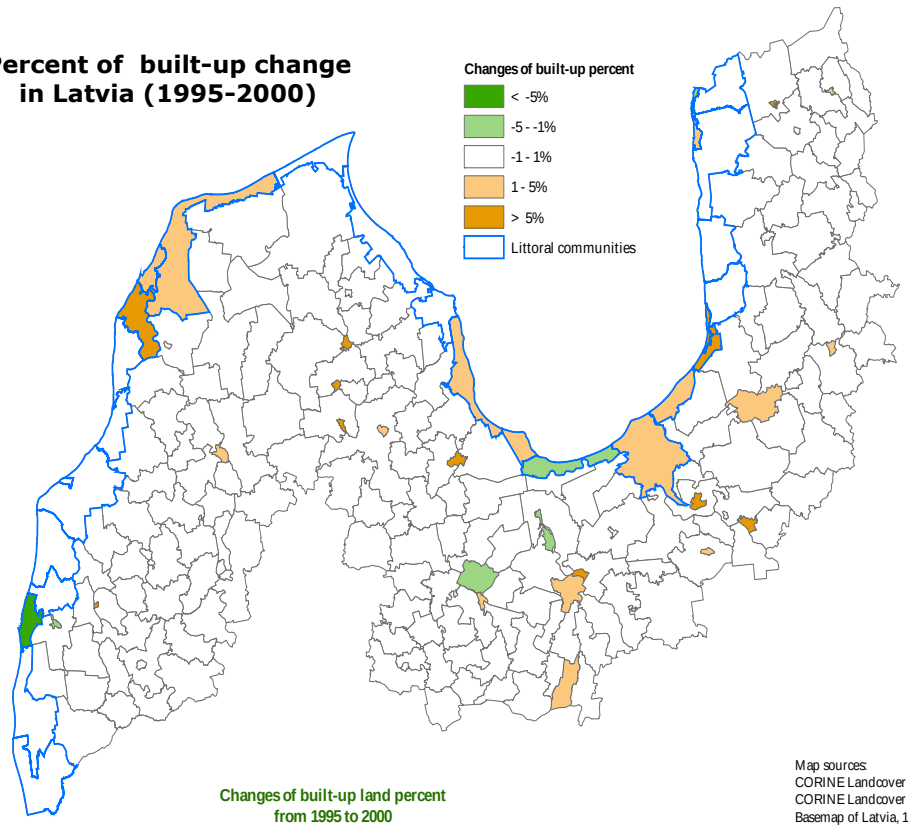
Province of West-Flanders (and local network of partners)



The average percent of built-up land in the hinterland of Zeeland is higher (7 %) and more rapidly increasing, compared to the hinterland. The coastal zones of West-Vlaanderen (27 %) and Nord-Pas de Calais (26 %) are highly urbanized. The rate of urbanisation in the coastal zone is still 1,32 times higher than in the hinterland.

On the contrary, in the Deduce regions located in the Baltic Sea the situation is different due to the reduced share of built-up land located in the coastal areas in comparison with the Mediterranean and even with the Atlantic.

Percent of built-up change in Latvia (1995-2000)



Changes of built-up land percent from 1995 to 2000

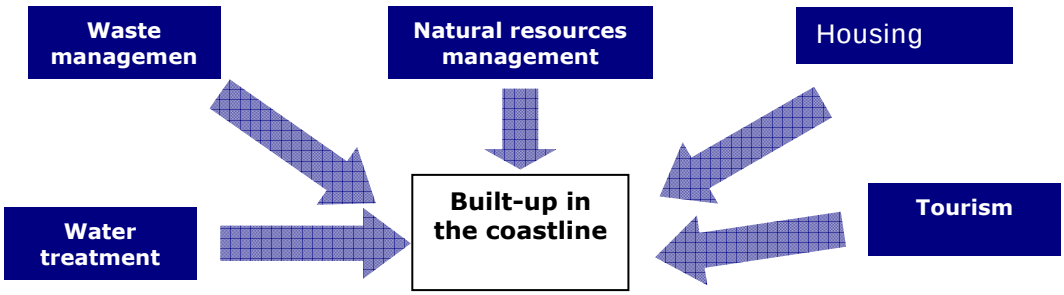
Map sources:
CORINE Landcover Latvia 1995,
CORINE Landcover Latvia 2000,
Basemap of Latvia, 1:200 000
J.K.Kartes, 2005

What are the implications for planning and managing the coastal zone?

Europe is one of the most urbanised continents and today some 70% of its population is urban, while urban areas (with a population density 117.5 people per km2) account for some 25% of the EU's territory. By 2020, around 80% of Europeans will be living in urban areas. As a result of Europe's increasing urban population, the phenomenon of urban sprawl – which occurs when the rate of land use conversion and consumption for urban uses exceeds the rate of population growth for a given area over a specified period - is a major issue for land use policy-makers.[1]

During the last century, coastal urbanization has grown dramatically and coastal cities have expanded rapidly, strongly influencing marine and coastal ecosystems, and missing the preservation of the coastal environment for sustainable development as a major urban planning issue

This indicator brings important information to improve the planning, management and the land use of Europe's coastal zones - often the most vulnerable area from environmental point of view.



Further work needed

Spatial assessment on European level is severely limited by availability of harmonized European data sets. Better coverage of data is needed in all aspects:

- temporal coverage (as a minimum 2 dates for change analysis),
- spatial coverage (maximum coverage of European countries)

Data sources

Europe: **Corine Land Cover 90- 2000 (EEA)**

West-Flanders (and local network of partners):

- **West-Flanders: Corine Land Cover 90- 2000 (EEA)**
- **Nord-Pas-de-Calais: Corine Land Cover 90- 2000 (EEA)**
- **Zeeland: Corine Land 90-2000 (EEA) and additional dataset from Centraal Bureau voor de Statistiek CBS (Statistics Netherlands) : Land use 1989-1993-1996.**
- **Kent, Essex and Thames: Corine Land Cover 90- 2000 (EEA)**

Malta:

- **Base map – 1988 (Malta Environment Planning Authority)**
- **Area of urban development 1994 to 2004 (Malta Environment Planning Authority)**

Catalonia:

- **Basic digital data on built-up areas were obtained from the Land use map of Catalonia. (1987, 1992, 1997 and 2002)**
- **The administrative boundaries (from Nut 5) were obtained by the Cartographical Catalan Institut (ICC).**

Pomeranian Voivodship**:**

- **Corine Land Cover 90- 2000 (EEA)**
- **Administrative units from Wojewódzki Ośrodek Dokumentacji Geodezyjno-Kartograficznej (Voivodship Centre for the Geodetic-Cartographic Documentation) in Gdansk.**

References

1. European Environment Agency, 2006, “The Urban Environment in its Broader Territorial Context” Background Paper for the Informal Meeting of Ministers for the Environment, Eisenstadt, 19-21 May 2006