# *Report of the Working Group on Indicators and Data*

# *to the EU ICZM Expert Group*

**Rotterdam, 24 November 2004**

## Background

Growing concerns about the state of the coast in Europe prompted the European Commission to establish a 'Demonstration Programme' in 1996 to ascertain best practice in arresting and reversing decades of economic, social and environmental decline. Among other things, the Demonstration Programme concluded that the **lack of relevant, credible and reliable information** was impeding effective coastal planning and management. Hence the *Recommendation concerning the implementation of Integrated Coastal Zone Management*, (2002), calls for an **integrated approach to monitoring and measuring** the sustainable development of the coastal zone.

The EU ICZM Expert Group established a Working Group on Indicators and Data (WG-ID) in 2002 to advise it on ways in which Member States, and the EU as a whole, can assess whether they are moving further towards, or away from, a more sustainable future for their coastal zones, and at what pace. And because it is an axiom of the Recommendation that **greater sustainability is directly related to the penetration of ICZM** at all spatial scales, the Expert Group asked the WG-ID to propose a method for measuring the extent to which ICZM is being implemented around Europe.

The WG-ID, led by the European Topic Centre on the Terrestrial Environment, subsequently drew up two indicator sets:

- an indicator measuring progress in implementing ICZM (the **'progress indicator'**)
- a set of 27 indicators of sustainable development of the coastal zone (the **'SD 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**.

At its meeting of 22 April 2004, the Expert Group (with the exception of Sweden) **accepted both sets of indicators** but suggested **further testing** of the progress indicator and **calculation** of some of the SD indicators. **This has now been done**.

## Testing the progress indicator

The progress indicator **has been tested by over one hundred practitioners** on three separate occasions. 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.

The WG-ID recommends that, following a few minor alterations to the indicator and the addition of a set of guidance notes, **Member States join with practitioner groups over the following year and organise national workshops** (or regional workshops) whose principal aim is to complete the progress indicator questionnaire.

To support this action COREPOINT project foresees to have tests done end of **March 2005** in Germany, Finland and Lithuania and in Irlande **end 2005**. WG-ID is also planning the test of the Progress indicators in France and Belgium in the **first semester 2005**.

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

## Choosing the SD indicators

Many hundreds, if not thousands, of indicators have been suggested for monitoring the state of the coast. Those in the WG-ID set were chosen first and foremost to **reflect the breadth of coastal interests and concerns** around Europe. As such they had to be **user driven, easy to understand and policy-relevant**. They also had to be **scientifically sound** and statistically valid, capable of providing **factual, quantitative information**. By and large, the indicators **allow comparisons to be made** between countries and between regions. Critically, they will **enable Member States to undertake a baseline audit** of their coasts and then evaluate, every few years or so, the effect that their coastal strategies are having on coastal sustainability.

The indicators are divided into seven groups. Taken together, the indicators in each group will help the European Commission, Member States and coastal partnerships monitor progress towards **achieving the goals for coastal sustainability set out in the EU Recommendation.**

## Measuring the SD indicators

So that comparisons can be made more easily between Member States and between coastal regions, the WG-ID has specified precisely which indices should be used to measure each indicator. As far as possible, the **measurements reflect the availability of existing data** (see Annex 1).

**Some measurements are easy to come by**: *Percent of coastal waters compliant with the guide value of the European Bathing Water Directive*, for example, is collated by the European Environment Agency annually from data collected from tens of thousands of point sources around Europe. EUROSTAT has for many years brought together figures collected by Member States on the *Number of incoming and outgoing passengers per port* and *Total volume of goods handled per port*. Information is readily available on the *Value of fish landings by species* for almost every harbour in Europe.

**Other measurements are more difficult to make**. Information about the *Value of residential property*, for example, the *Number of days of reduced water supply* or *Occupancy rate of bed places* is **often available but is not pre-packaged for the coastal zone**. Of course, the coastal zone itself will vary according to what is being measured and for what purpose. Yet other measurements demand data which is **collected only partially** (*Volume of*

*litter collected per given length of shoreline*, for example) or **hardly at all** (*Value of economic assets at risk from coastal erosion*).

**Calculating the SD indicators**

The WG-ID has responded to the request of the Expert Group and has begun **calculating the indicators at different spatial scales**. Attention has focused primarily on developing a **common blueprint** for creating an inventory of datasets, using GIS to manipulate and demonstrate spatial data, building a metadata profile, and so on.

Annex 2 describes the indicators calculated to date:

| European level | | National level | | Regional level | |
|---|---|---|---|---|---|
| **Calculated** | **In preparation** | **Calculated** | **In preparation** | **Calculated** | **In preparation** |
| **6** | **2** | **5** | **3** | **11** | **4** |

It is anticipated that **12 out of the 27 indicators will be calculated** for all their parameters, at all spatial scales, where it is appropriate to do so, and for at least 12 Member States, **by the end of 2005.**

**Next steps: sharing information between countries, regions and coastal communities**

As the indicators are measured, the WG-ID will **act as a clearing house** to help disseminate the results between Member States, regional authorities, coastal and marine agencies, and local communities, in a series of **'indicator fact sheets'**, examples of which are appended in Annex 3. Appended to each fact sheet will be a **metadata file** which will assist regions and localities to calculate the indicators for their own areas. The fact sheets will build over two years into a comprehensive inventory of datasets necessary for calculating the SD indicators at all spatial scales.

To facilitate this process, and to **bring together other organisations and interests** working in the indicator field, the WG-ID convened two workshops, in Malta in June 04 and in Poland four months later. A third is planned for March in Barcelona to coincide with the **launch of DEDUCE**, an INTERREG IIIC project which itself aims at calculating the SD indicators in collaboration with the WG-ID.

A further task will be to work on an **inventory of data and information available for the coast at regional, national and EU level**, to present at the end of 2005 a map of data status for the coast, and an analysis of the gaps. So, that, WG-ID can require from other projects the lacking and needed information, giving to the EU Expert Group a relevant place as user of projects such GMES for example. One of the first action will be to bring together the various aspirants via the INSPIRE initiative to ensure a degree of comparability and harmony in **generating a user-led spatial platform for coastal information.**

The WG-ID is a voluntary initiative, hence the necessity to work alongside other agencies and organisations in delivering calculations of both the progress indicator and the SD indicators.
**WG-ID needs as well to dynamize the debate** on how to connect and analyse results from the two sets of indicators (Progress in ICZM and SD indicators for the coast), to see in which extend connections between both are really happening and how they should be interpreted.

A well of expertise is thus increasingly **available to help Member states in setting up their own SD and ICZM Progress indicator programmes**, concentrating initially on the all-

Europe list and developing further measurements , indicators and consistent data sets, comparable over space and time **to reflect local and regional diversity**.

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**Annex 1: Indicators of sustainable development of the coastal zone – availability of data**

Black: data widely available. Blue: data widely available but needs manipulating for the coastal zone. Red: data largely absent

| GOAL | No. | INDICATORS | MEASUREMENTS |
|---|---|---|---|
| To control, as appropriate, further development of the undeveloped coast | 1 | Demand for property on the coast | • Size and structure of the population living on the coast |
| | 2 | Area of built-up land | • Percent of built-up land by distance from the coastline |
| | 3 | Rate of development of previously undeveloped land | • Area converted from non-developed to developed land uses |
| | 4 | Demand for road travel on the coast | • Volume of traffic on coastal motorways and major roads |
| | 5 | Pressure for coastal and marine recreation | • Number of berths and moorings for recreational boating |
| | 6 | Land take by intensive agriculture | • Proportion of agricultural land farmed intensively |
| To protect, enhance and celebrate natural and cultural diversity | 7 | Amount of semi-natural habitat | • Area of semi-natural habitat |
| | 8 | Area of land and sea protected by statutory designations | • Area protected for nature conservation, landscape and heritage |
| | 9 | Effective management of designated sites | • Rate of loss of, or damage to, protected areas |
| | 10 | Change to significant coastal and marine habitats and species | • Status and trend of specified habitats and species<br>• Number of species per habitat type<br>• Number of Red List coastal area species |
| | 11 | Loss of cultural distinctiveness | • Number and value of sales of local products with regional quality labels or European PDO/PGI/TSG |
| To promote and support a dynamic and sustainable coastal economy | 12 | Patterns of sectoral employment | • Full time, part time and seasonal employment per sector<br>• Value added per sector |
| | 13 | Volume of port traffic | • Number of incoming and outgoing passengers per port<br>• Total volume of goods handled per port<br>• Proportion of goods carried by short sea routes |

| | | | |
|---|---|---|---|
| | 14 | Intensity of tourism | • Number of overnight stays in tourist accommodation<br>• Occupancy rate of bed places |
| | 15 | Sustainable tourism | • Number of tourist accommodations holding EU Eco-label<br>• Ratio of overnight stays to number of residents |
| To ensure that beaches are clean and that coastal waters are unpolluted | 16 | Quality of bathing water | • Percent of bathing waters compliant with the guide value of the European Bathing Water Directive |
| | 17 | Amount of coastal, estuarine and marine litter | • Volume of litter collected per given length of shoreline |
| | 18 | Concentration of nutrients in coastal waters | • Concentration of nitrates and phosphates in coastal waters |
| | 19 | Amount of oil pollution | • Volume of accidental oil spills<br>• Number of observed oil slicks from aerial surveillance |
| To reduce social exclusion and promote social cohesion in coastal communities | 20 | Degree of social cohesion | • Indices of social exclusion by area |
| | 21 | Relative household prosperity | • Average household income<br>• Percent of population with a higher education qualification<br>• Value of residential property |
| | 22 | Second and holiday homes | • Ratio of first to second and holiday homes |
| To use natural resources wisely | 23 | Fish stocks and fish landings | • State of the main fish stocks by species and sea area<br>• Recruitment and spawning stock biomass by species<br>• Landings and fish mortality by species<br>• Value of landings by port and species |
| | 24 | Water consumption | • Number of days of reduced supply |
| To recognise the threat to coastal zones posed by climate change and to ensure appropriate and ecologically responsible coastal protection | 25 | Sea level rise and extreme weather conditions | • Number of 'stormy days'<br>• Rise in sea level relative to land |
| | 26 | Coastal erosion and accretion | • Length of protected and defended coastline<br>• Length of dynamic coastline<br>• Area and volume of sand nourishment |
| | 27 | Natural, human and economic assets at risk | • Number of people living within an 'at risk' zone<br>• Area of protected sites within an 'at risk' zone<br>• Value of economic assets within an 'at risk' zone. |

## Annex 2: Indicators of sustainable development of the coastal zone – calculations completed or in preparation

Calculation completed at level indicated

Calculation in preparation at level indicated

| No | INDICATORS | MEASUREMENTS | EU | NATIONAL | REGIONAL |
|---|---|---|---|---|---|
| 1 | Demand for property on the coast | • Size and structure of the population living on the coast | Coastwatch | France | Southern North Sea |
| 2 | Area of built-up land | • Percent of built-up land by distance from the coastline | Coastwatch | Malta, France | Catalunya, Southern North Sea |
| 3 | Rate of development of previously undeveloped land | • Area converted from non-developed to developed land uses | Coastwatch | | Catalunya, |
| 4 | Demand for road travel on the coast | • Volume of traffic on coastal motorways and major roads | | | Nord-Pas de Calais |
| 5 | Pressure for coastal and marine recreation | • Number of berths and moorings for recreational boating | | | Southern North Sea |
| 6 | Land take by intensive agriculture | • Proportion of agricultural land farmed intensively | Coastwatch | | |
| 7 | Amount of semi-natural habitat | • Area of semi-natural habitat | | | Southern North Sea |
| 8 | Area of land and sea protected by statutory designations | • Area protected for nature conservation, landscape and heritage | | Malta | Southern North Sea |
| 9 | Effective management of designated sites | • Rate of loss of, or damage to, protected areas | | | |
| 10 | Change to significant coastal and marine habitats and species | • Status and trend of specified habitats and species<br>• Number of species per habitat type<br>• Number of Red List coastal area species | | | |
| 11 | Loss of cultural distinctiveness | • Number and value of sales of local products with regional quality labels or European PDO/PGI/TSG | | | Southern North Sea |

| | | | | | |
|---|---|---|---|---|---|
| 12 | Patterns of sectoral employment | • Full time, part time and seasonal employment per sector<br>• Value added per sector | | | |
| 13 | Volume of port traffic | • Number of incoming and outgoing passengers per port<br>• Total volume of goods handled per port<br>• Proportion of goods carried by short sea routes | | | |
| 14 | Intensity of tourism | • Number of overnight stays in tourist accommodation<br>• Occupancy rate of bed places | | | |
| 15 | Sustainable tourism | • Number of tourist accommodations holding EU Eco-label<br>• Ratio of overnight stays to number of residents | | | |
| 16 | Quality of bathing water | • Percent of bathing waters compliant with the guide value of the European Bathing Water Directive | EEA | | |
| 17 | Amount of coastal, estuarine and marine litter | • Volume of litter collected per given length of shoreline | | | |
| 18 | Concentration of nutrients in coastal waters | • Concentration of nitrates and phosphates in coastal waters | | | OSPAR, HELCOM, BONNCON |
| 19 | Amount of oil pollution | • Volume of accidental oil spills<br>• Number of observed oil slicks from aerial surveillance | | Belgium | Southern North Sea |
| 20 | Degree of social cohesion | • Indices of social exclusion by area | | | Southern North Sea |
| 21 | Relative household prosperity | • Average household income<br>• Percent of population with a higher education qualification<br>• Value of residential property | | | Southern North Sea |
| 22 | Second and holiday homes | • Ratio of first to second and holiday homes | | France, Malta | Southern North Sea |
| 23 | Fish stocks and fish landings | • State of the main fish stocks by species and sea area<br>• Recruitment and spawning stock biomass by species<br>• Landings and fish mortality by species<br>• Value of landings by port and species | EEA | | Southern North Sea |

| | | | | | |
|---|---|---|---|---|---|
| 24 | Water consumption | • Number of days of reduced supply | | | |
| 25 | Sea level rise and extreme weather conditions | • Number of 'stormy days'<br>• Rise in sea level relative to land | | Poland | |
| 26 | Coastal erosion and accretion | • Length of protected and defended coastline<br>• Length of dynamic coastline<br>• Area and volume of sand nourishment | EUROSION | Netherlands | Southern North Sea |
| 27 | Natural, human and economic assets at risk | • Number of people living within an 'at risk' zone<br>• Area of protected sites within an 'at risk' zone<br>• Value of economic assets within an 'at risk' zone. | EUROSION | France | |