Sustainability indicators for the coast

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Famous Indicators…

-Body Temperature:

Too high : fever -> body gives a signal

-Viewers of a television program:

Too Low-> cancel the program

Decisions based on significant and scientific correct data: one of the key principles of ICZM

'Recommendation concerning the implementation of Integrated Coastal Zone Management in Europe' - '30 may 2002'

National strategies to implement the principles for integrated management of the coastal zone should include adequate systems for monitoring and disseminating information to the public about their coastal zone. These systems should collect and provide information in appropriate and compatible formats to decision makers at national, regional and local levels to facilitate integrated management.
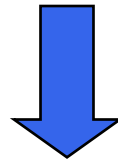
The coordination centre and indicators

Belgium approach: Coastal barometer (2000)

⬇

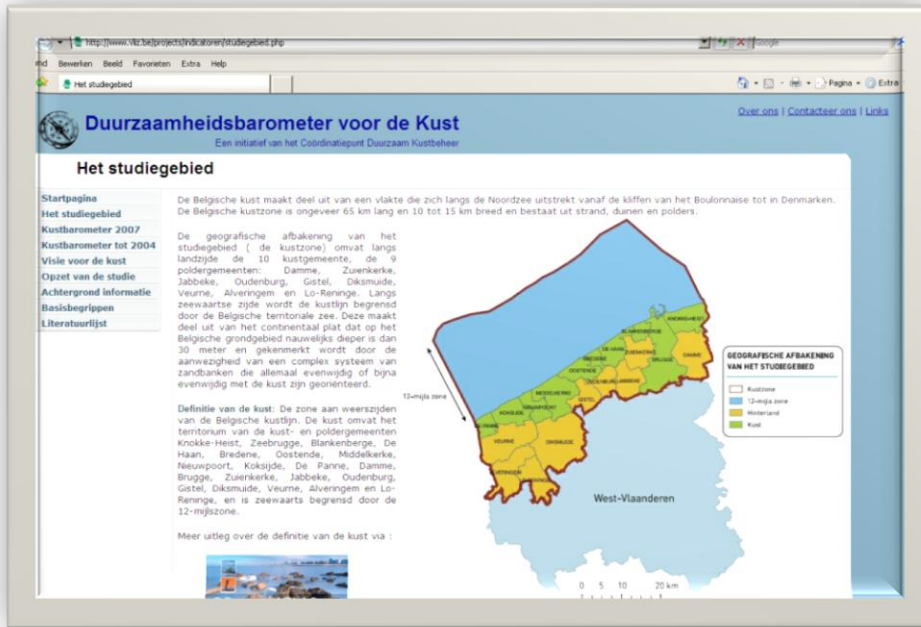SAIL: Regional approach (2002)

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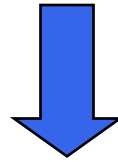
WG-ID => DEDUCE: European approach (2004)

Approach in Belgium

Coastal barometer & Coastal Compass
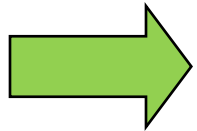

Dutch

Dutch & English

Goal

– Using data, measurements and indicators as a communication tool

– Stimulate them as management support system

– Distribute the indicators to a broad interested public

– Not an evaluation of the coast and the coastal policies

Development process

People involved in development process: +/- 90 persons

- The consultative group on ICZM: 11 participants
- The thematically meetings: 29 participants
- Workshop 1:   26 participants
- Workshop 2:   44 participants

Bottom up approach !

The scientific community

•Flanders Marine Institute

•Higher Institute for Labour Studies

•…

Local authorities

•Environmental development

•Spatial planning

•Servants on mobility

•…

Culture Heritage

Nature associations

NGO

Economical sector

•The harbors

•Trade Union

•…

Tourism

•Tourism Flanders

• The hotel, restaurant and café sector

•…

Result:

– A list of 20 indicators

       • 6 priorities

The list was just the beginning…

       • Providing the indicators from data

       • Communication tools

          – Factsheets

          – Website

          – Publication

Data and technical factsheets

- Data is preserved in an access database

- Updated every year with the available data

- Scale of the data: as local as possible: local communities, measurements points

- Presentation in maps, graphs and publications

Technical factsheets: detailed information on each indicator.

Website: Interactive

Internet site:
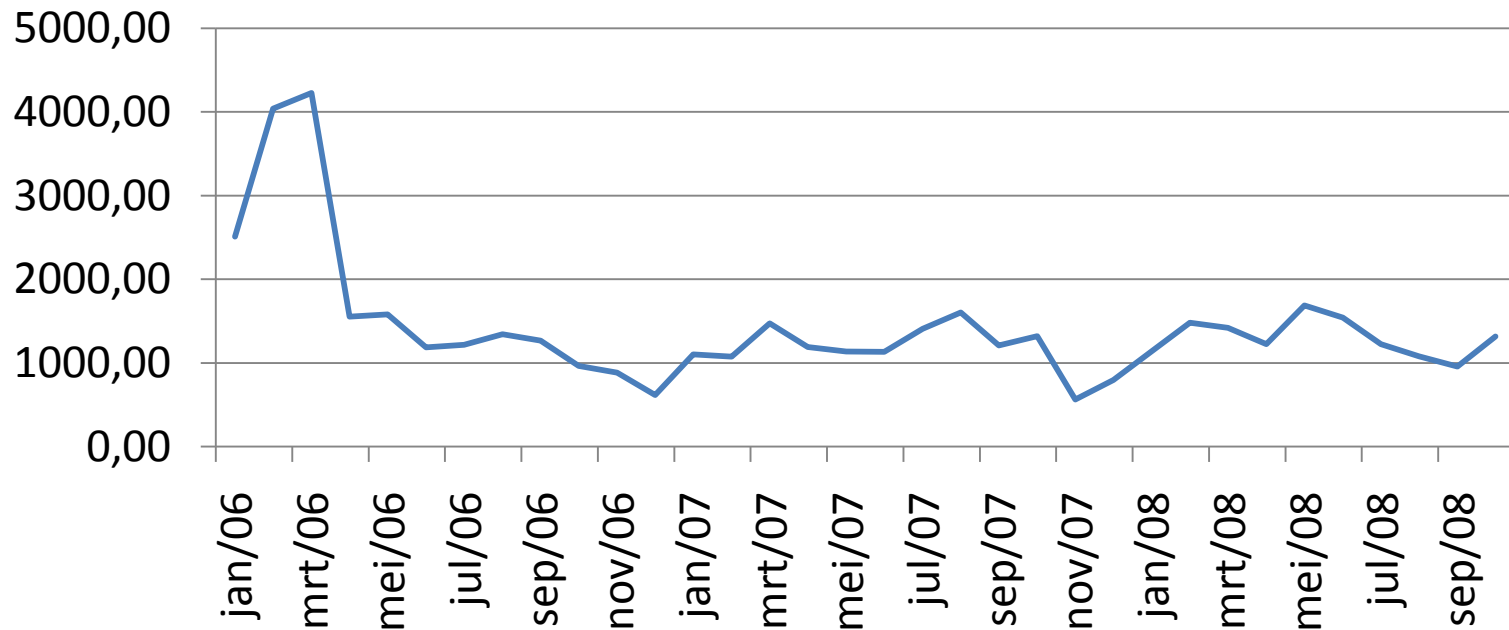www.kustbeheer.be/indicatoren
Free access to the data

Impact

Year/period	Estimated average number of unique visitors per month (based on 4 pages/visit)	Estimated average number of unique visitors per day (based on 4 pages/visit)
2006	1781	58,6
2007	1166	38,4
2008 (Jan-Oct)	1306	42,9

Impact

Estimated visitors per month
(4 pages/visit)

The publication :
The coastal compass

Auteur ⟺ **Lector**

Coordination centre on ICZM

Editorial team

Het kustkompas 2007
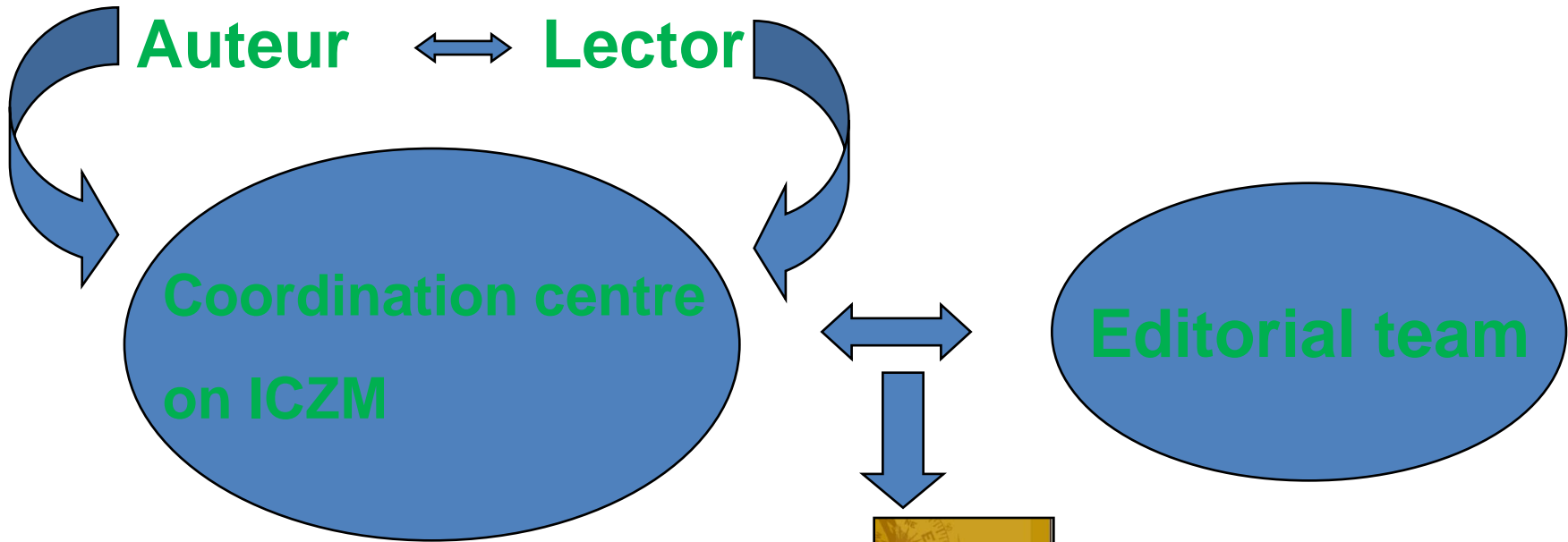
Result is work of more then 50 persons:
Teamwork!
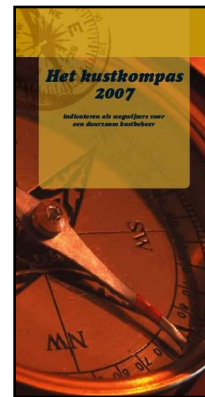
The publication: the composition!

- Each chapter
  - A covering text
    - Where do we want to go?
    - Where are we today?
    - What can we do?

  - 5 indicators
    - Key Message
    - Trend
    - 4 questions
      - Why this indicator
      - What says this indicator
      - What are the results
      - What for the future

-Oplage:
   -Dutch 1450 (2005+2007)
   -English: 300

The publication

- First edition in 2005 – Second edition in 2007
- Difference between 2005-2007
  Review of the indicators
    - Review on the working with indicators
      – More attention to local scale
      – More integrated indicators
      – Concrete promoting and use of the indicators
    - Review on the indicators
      – Exclusion of indicators without a meaning
      – Redefining indicators to be closer to standard definitions
  – Extra chapter: Climate change and Coastal defense

Impact

- Widely circulated :
  - Dutch 1450 (2005+2007)
  - English: 300

- Persons present at launch of two coastal compasses
  - 46 politicians (local alderman and mayors, deputies' one federal minister)
  - 167 administrations (local, provincial, Flemish or federal level

- Media attention: All the national papers, news of the big radio-stations and broadcast companies

Impact

- Referred to in several publications such as long term planning for tourism, reports on coastal flood risk and trends for the future in the north sea, courses on sustainable tourism and lectures about ICZM

- 2 official questions to the parliament based on the results of the coastal compass

- Average of 18 questions a year, mostly from different governmental services, asking for specific data

The coordination centre and indicators

Belgium approach: Coastal barometer (2000)

SAIL: Regional approach (2002)

WG-ID => DEDUCE: European approach (2004)

SAIL: The Southern North Sea

SAIL: Schéma d'Aménagement Intégré du Littoral

SAIL partnerschap

SAIL: The Southern North Sea

- 7 goals!

- A set of 27 indicators and 45 measurments

- Developed and calculated by Flanders Marine Instituut (VLIZ)

- Selecting of indicators: by team of experts
  - TOP DOWN APPROACH

Outreach

- Website
  - http://www.vliz.be/projects/SAIL/db.php
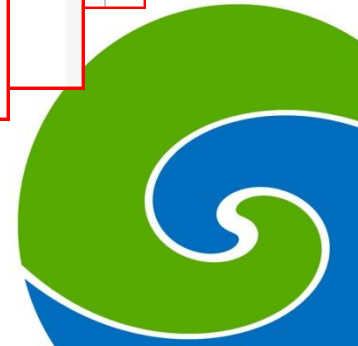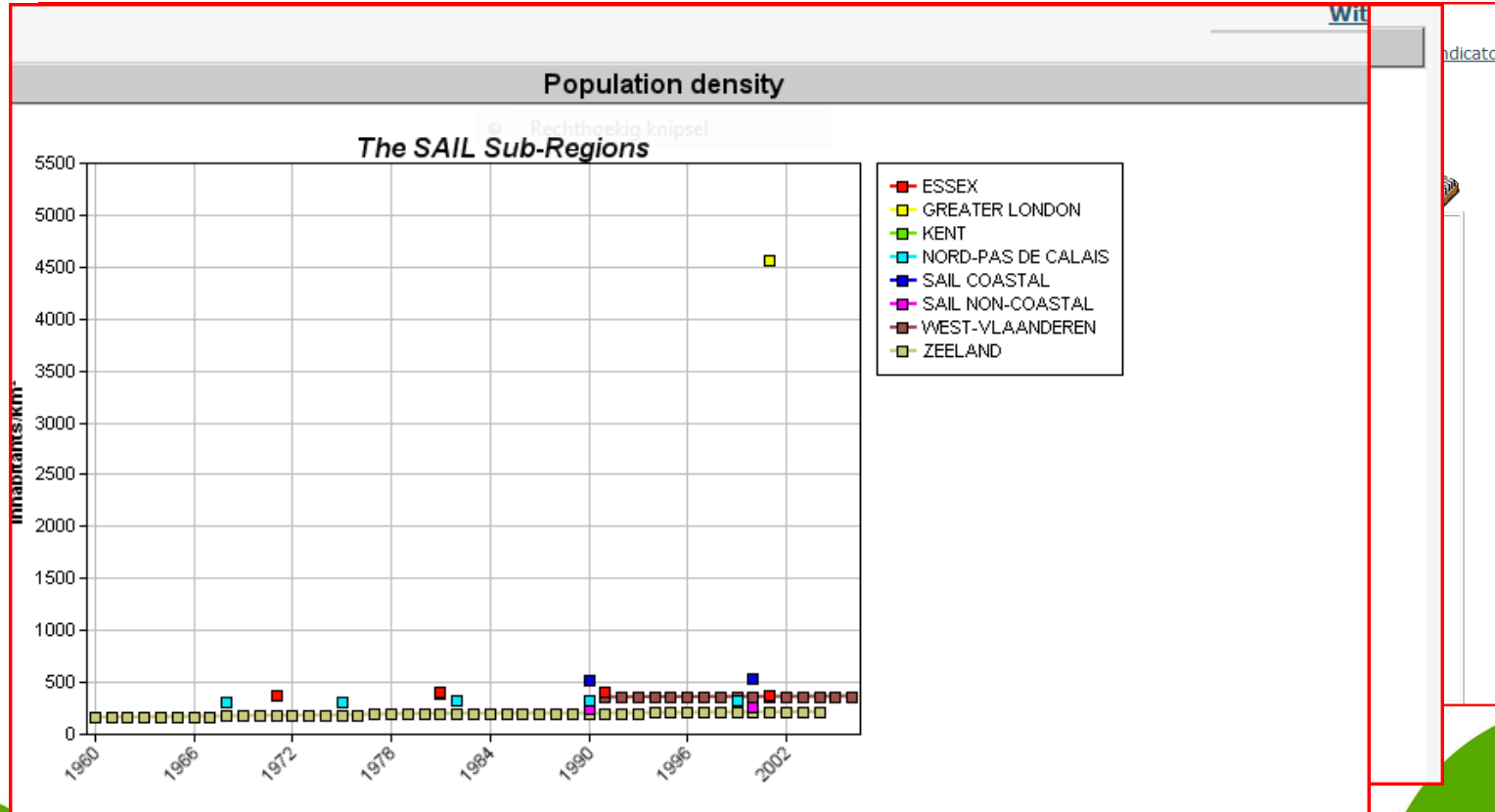
Outreach

- **Publications**: State of the Coast of the Southern North Sea

First indicators-based regional scale assessment in the southern North Sea

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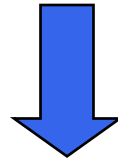
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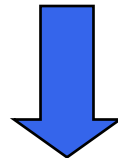
WG-ID => DEDUCE: European approach (2004)

Working group on indicators and data

- EU expertgroup on the ICZM (result of the recommendation)

- Working group on Indicators and Data (WG-ID)
  - Developed 27 indicators
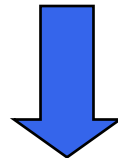 - Mainly based on SAIL set

DEDUCE

Fig. 2: Map representing geographical coverage of partners of DEDUCE project.

- Calculation of 27 indicators for a sustainable development of the coast
- Strengths and weaknesses of an integrated information system based on a GIS
- Model of the state-of-the-coast report (IFS)
- Guides on the use of the indicators for decision making
- Study of the possibilities of creating a European coastal observatory

Results: Standard indicator forms

SIF_4.1_final

Indicator	
4	Demand for road travel at the coast.

Measurement	
4.1	Volume of traffic on coastal motorways and major roads.

What should the measurement tell us?

Perhaps the largest consequence of development at the coast is an increase in the demand for road travel, which leads to pressure on existing road space and in turn to the provision of new infrastructure. Road traffic expands to fill the space allocated to it and hence over time congestion, air pollution, noise and the costs associated with maintaining the road network will all rise exponentially. The measurement should alert us to the pace at which the demand for road travel is rising and also tell us whether the issue is greater on coastal motorways and major roads than on those inland.

The opposite, of course, holds true. Sluggish traffic growth is an indicator of a *lack* of development!

Parameters

(i)	Average number of vehicles per day on motorways and major roads (or the most important alternative roads) within coastal NUTS 3.
(ii)	Average number of vehicles per day on motorways and major roads (or the most important alternative roads) within coastal NUTS 3 by distance from the coastline.

Coverage	
Spatial	Temporal
Motorways and major roads (or the most important alternative roads) within coastal NUTS 3.	Every five years from 2000 but earlier if possible [1].

Data sources

All countries monitor traffic flows by counting the number of vehicles passing a measuring station. There is no definitive rule but motorways tend to be administered by national highways agencies (or central government ministries of transport) whereas major roads are the responsibility of regional authorities. Datasets are available, often sub-divided into daily or weekend averages or by type of vehicle. Seasonal data is particularly instructive for coastal planning because of its association with tourism and holidaymaking. *Many of the computations necessary to calculate the parameters will have been done already* – in particular, check with your regional (or provincial) authority.

Motorways are broad highways designed for high-speed traffic, whereas 'Major' roads are the next tier down and are principal roads of national or regional importance. However, remember that we want to measure the impact of traffic at the coast. Consequently, in coastal areas where there are no motorways or national roads, you should use data for the most important alternative road.

SIF_4.1_final

Methodology		
	Steps	Products
1	In GIS (or other cartographic tools) sample the co-ordinates of monitoring stations located in coastal NUTS 3 and select those which measure traffic flows on motorways and major roads.	List of all monitoring stations located in coastal NUTS 3 and which measure traffic flows on motorways and major roads.
2	Measure the distance from the coastline of each monitoring station identified in step 1.	Distance from the coastline of all monitoring stations identified in step 1.
3	Obtain 'annual average daily flow' datasets for all vehicles for every monitoring station identified in step 1.	Average number of vehicles per day on motorways and major roads by distance from the coastline (graph 1).
4	Add the average number of vehicles per day passing *all* monitoring stations on *each* motorway and major road identified in step 1 and divide by the number of monitoring stations.	Average number of vehicles per day on *each* motorway and major road within coastal NUTS 3 (map 1).
5	Add the average number of vehicles per day on all motorways and major roads and divide by the number of routes.	Average number of vehicles per day on *all* motorways and major roads within coastal NUTS 3 (graph 2).

Presentation of the data		
Map 1	Map of coastal NUTS 3 showing average daily traffic flows for all motorway and major roads. The *width* of each route depicted should approximate to the *volume* of traffic between each monitoring station.	
Graph 1	Scatter graph illustrating the relationship between average daily traffic flow and distance of monitoring station from the coastline.	
Graph 2	Bar chart showing the average number of vehicles per day on all motorways and major roads in the wider reference region since at least 2000 and earlier if possible.	

c~scope
Combining Sea and Coastal Planning in Europe

INTERREG IV A
FRANCE - ENGLAND - VLAANDEREN - NEDERLAND

DORSET COAST FORUM

DE KUST
kwestie van evenwicht

Results:
model of the state of the coast report
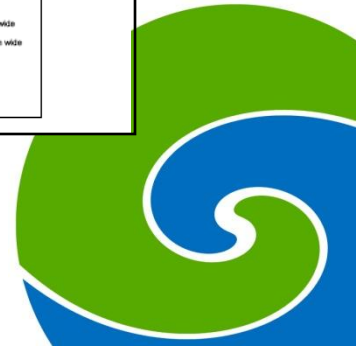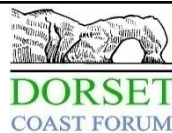
Results

- Guides on the use of the indicators for decision making

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For the future...
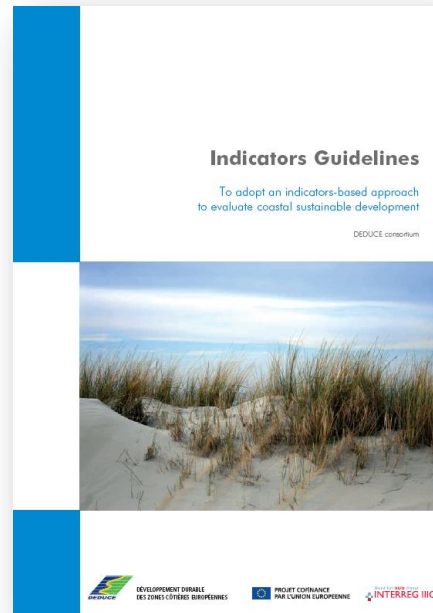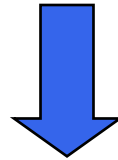
Comparison between the C-scope partners:

- ## Coastal Compass and Dorset Data book
  - 18 almost identical indicators
  - No indicators or data on:
    - Sea side: oil pollution, fish stocks, iczm
    - Coastal protection – Climate change

- ## SD indicators proposed by the WG ID-EU ICZM and Dorset Data book
  - 28 almost identical measurements (out of 46)

Comparison between the C-scope partners:

- Much more data on one subject
- Very detailed data

- Trends
- Conclusions out of the data
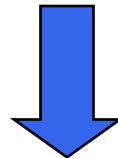- The importance of the data for sustainable management point of view
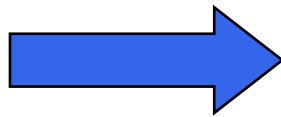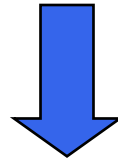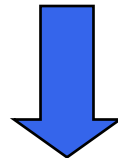
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For the future…

Future for the indicators?

Priorities:

- Further develop the indicators closer to local governments

- Research to increase the correlation between different indicators

- Link the atlas to the sustainability indicators

Coastal atlas vs Indicators

www.kustatlas.be

-Maps, graphs

-Not easy to update

-Graphs, data

-Easy to update

With special thanks to our funding partners

and all our coastal stakeholders