

SAF – Measuring and evaluating success Sustainability indicators background

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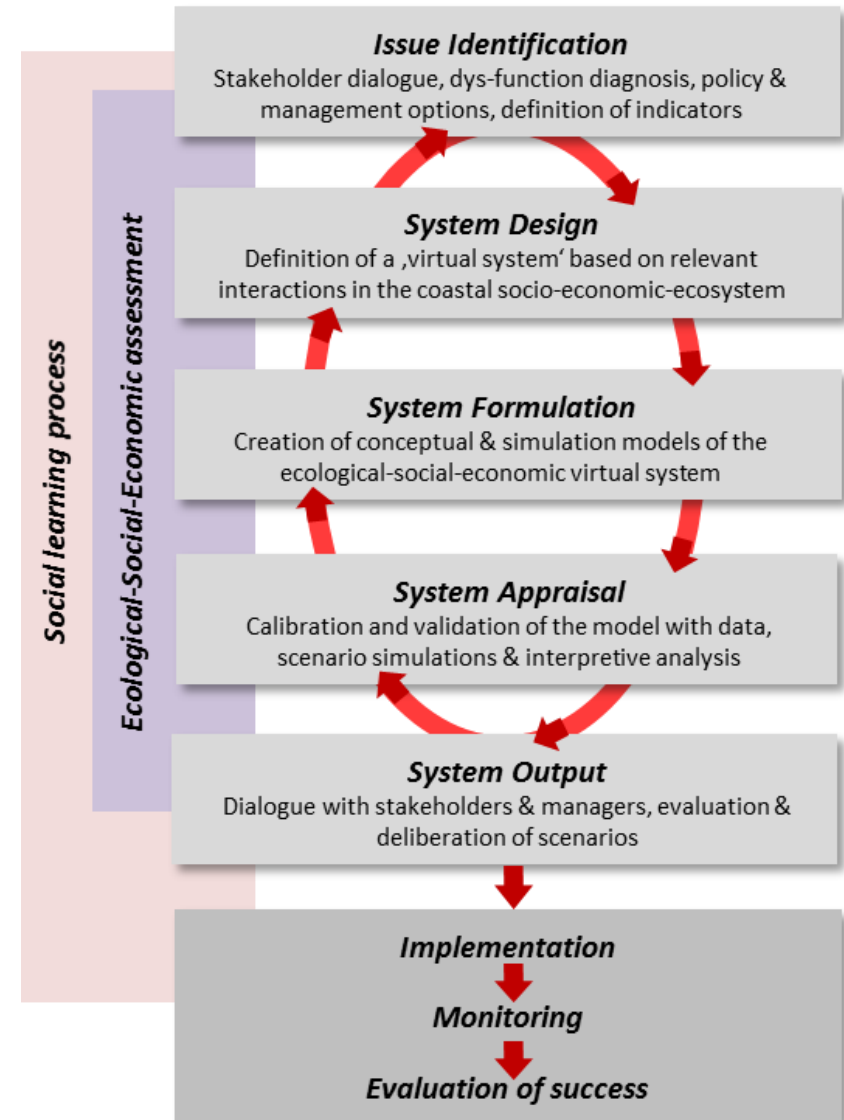
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**A SYSTEM APPROACH FRAMEWORK FOR
COASTAL RESEARCH & MANAGEMENT**



SAF – Evaluation of Success

- SAF addresses the general problem of assessing complex systems for conversion to **sustainable development** and thereby makes a valuable contribution to sustainability science.
- Indicators can be used to evaluate whether an ICM best practise example and/or SAF application led to a **progress towards sustainability**.





Sustainable development

“... is development that meets the needs of the present without compromising the ability of future generations to meet their own needs...” (EU Strategy for Sustainable Development final taken from the Brundtland Commission, 1987)

- **Sustainability is a major objective** of the European Union and is about safeguarding the Earth’s capacity to support life in all its diversity.
- It aims at **the continuous improvement** of the quality of life and well-being on Earth for present and future generations.

Can sustainability be achieved?

Is it measurable?



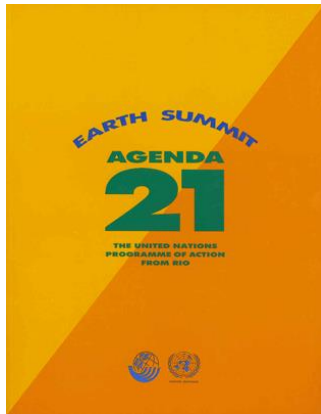
Sustainable Development and ICZM

1992

1999

2002

2006



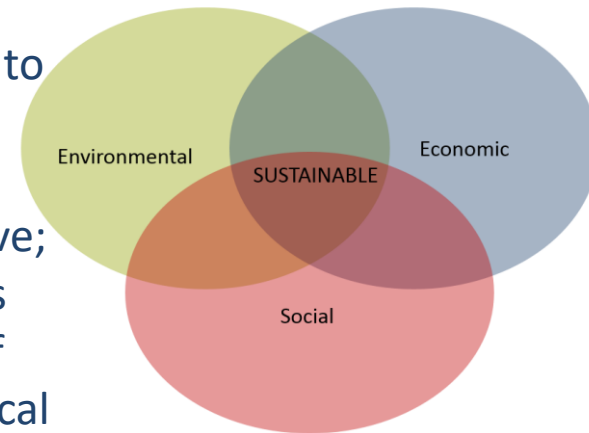
The importance of adopting indicators to measure sustainability is recognized in Agenda 21; ICZM recognition (UNCED, 1992)

The European Commission defined ICZM as: “a dynamic, continuous and iterative process designed to promote sustainable management of coastal zones’.

EU Recommendation on ICZM

- stakeholder involvement;
- sensitivity of policy to local needs;
- the adoption of a long-term perspective;
- the creation of links between all levels of governance, from local to European

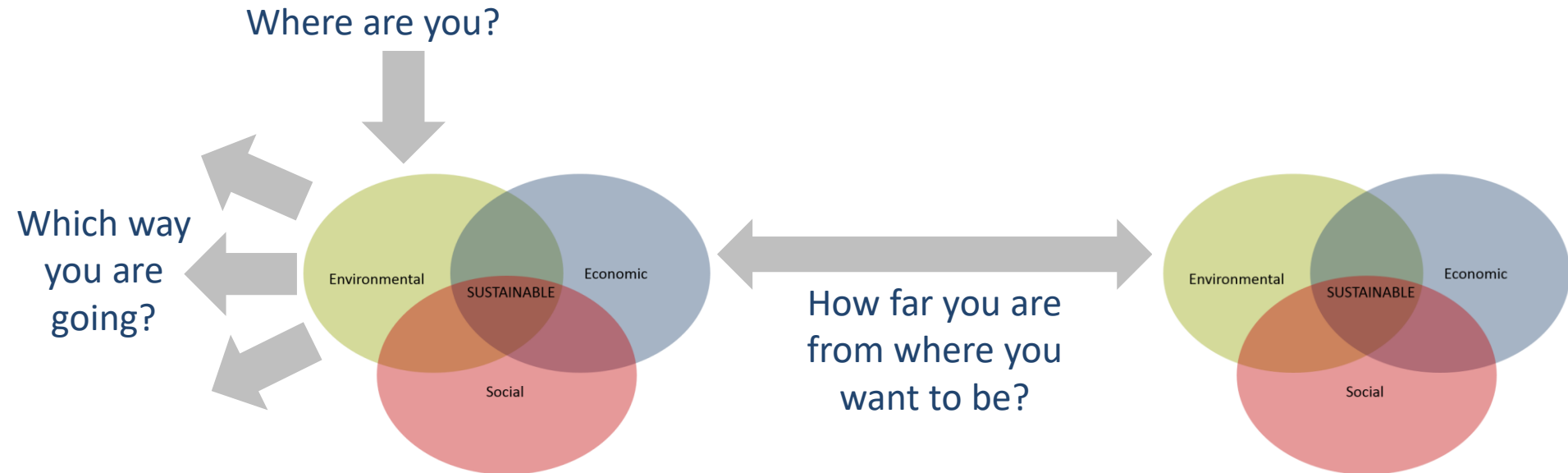
EU Sustainable Development Strategy





Why indicators?

- Indicators are popular because they can be used to simplify and communicate complex information (Maureen Hart, 2006)





Indicators development

Background

- 1990s – „need for common methodologies for learning from the rapidly accumulating experience in the practice of coastal management worldwide” (Olsen et al. 1999)
- **Manual for Assessing Progress in Coastal Management** (Olsen et al. 1999)
- **A recommendation for the implementation of ICZM in Europe was adopted** (European Council and Parliament 2002)
- **The EU ICZM Expert Group established a Working Group on Indicators and Data** (WG-ID 2004; Pickaver et al. 2004)
- Progress indicators were tested – **COREPOINT** (no results published)
- Sustainable development indicators – **DEDUCE** (DEDUCE Consortium 2007)
- **Handbook for Measuring the Progress and Outcomes of Integrated Coastal and Ocean Management** was established (IOC, UNESCO 2006)
- European INTERREG-IVC-Project **SUSTAIN** – **created fully implementable policy tool to measure sustainability** (SUSTAIN Partnership, 2012a)
- **QualityCoast program** – award for sustainable destinations (EUCC & ECNC, 2014)



Progress indicators

- A new model indicator set to measure the progress in the implementation of integrated coastal zone management (ICZM)
- 26 indicators

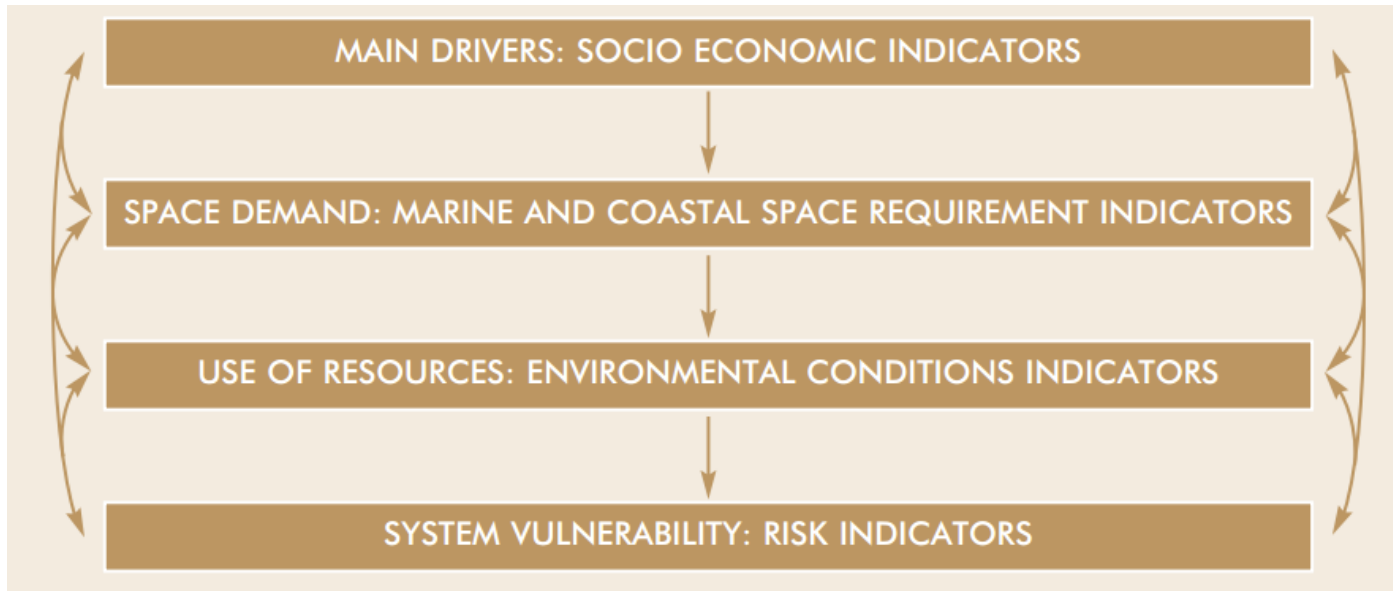
Phase	Action	Description	National		Regional		Local	
			1995	2000	1995	2000	1995	2000
I. Laying the basis for ICZM	1	Aspects of coastal management are taking place.	Yes	Yes	Yes	Yes	Yes	Yes
	2	Decisions about planning and management on the coast are governed by general legal instruments.	No	Yes	No	Yes	No	Yes
	3	Aspects of the coastal zone, including marine areas, are regularly and routinely monitored.	No	Yes	Yes	Yes	Yes	Yes
	4	Planning on the coast includes the provision, where appropriate, for the protection of natural areas.	No	Yes	Yes	Yes	Yes	Yes
	5	Funding is generally available for the implementation of coastal management plans.	No	No	No	No	No	No
II: A framework for ICZM exists	6	Existing instruments are being adapted and combined to deal with planning and management issues on the coast.	No	No	No	No	No	No
	7	Ad hoc demonstration projects are being carried out that contain recognisable elements of ICZM.	No	Yes	No	Yes	No	Yes

(Pickaver et al, 2004)



DEDUCE project

- **Progress indicators** – An indicator set to measure the progress of the implementation of ICZM (tested during COREPOINT project)
- **Indicators of Sustainable Development** – A core set of **27 indicators**, composed of **46 measurements**, to monitor sustainable development of the coastal zone



Interactions and cause/effect relationships in the coastal zone (DEDUCE, 2007)



SD indicators proposed by the WG-ID

GOALS	INDICATORS	MEASUREMENTS
To control further development of the undeveloped coast as appropriate.	1. DEMAND FOR PROPERTY ON THE COAST	1.1. Size, density and proportion of the population living on the coast 1.2. Value of residential property
	2. AREA OF BUILT-UP LAND	2.1. Percentage of built-up land by distance from the coastline
	3. RATE OF DEVELOPMENT OF PREVIOUSLY UNDEVELOPED LAND	3.1. Area converted from non-developed to developed land uses
	4. DEMAND FOR ROAD TRAVEL ON THE COAST	4.1. Volume of traffic on coastal motorways and major roads
	5. PRESSURE FOR COASTAL AND MARINE RECREATION	5.1. Number of berths and moorings for recreational boating
	6. LAND TAKEN UP BY INTENSIVE AGRICULTURE	6.1. Proportion of agricultural land farmed intensively
To protect, enhance and celebrate natural and cultural diversity.	7. AMOUNT 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 and heritage
	9. EFFECTIVE MANAGEMENT OF DESIGNATED SITES	9.1. Rate of loss of or damage to, protected areas
	10. CHANGE IN SIGNIFICANCE COASTAL AND MARINE HABITATS AND SPECIES	10.1. Status and trend of specified habitats and species 10.2. Number of species per habitat type

(DEDUCE, 2007)

Measuring sustainable coastal development

The SUSTAIN policy tool DeCyDe-for-Sustainability



➤ AIM

- Methodology to measure and promote sustainable development in coastal municipalities
- Develop a tool with high practical value for coastal municipalities to evaluate their sustainability performance
- User-friendly, spreadsheet-based decision support tool
- Two step method
 - Indicator assessment to evaluate sustainability performance
 - Weighting exercise

(SUSTAIN, 2012)



Measuring sustainable coastal development

Pillar →

Economics

Environmental Quality

Issues →

1. Economic Opportunity
2. Fisheries & Aquaculture
3. Land Use
4. Tourism
5. Transportation

6. Biodiversity, Natural Resources & Process Management
7. Energy & Climate Change incl. Waste Management
8. Fisheries and Aquaculture
9. Land Use
10. Water Resources & Environmental Pollution

Social

14. Public Health and Safety
15. Local and cultural Identity
16. Education and training
17. Equity
18. Demography

Governance

19. Policies/ strategies for sustainability
20. Monitoring tools for sustainability
21. Human resources capacity building
22. Implementation of good management practices
23. Stakeholder involvement/ public participation



SUSTAIN



Measuring sustainable coastal development

SUSTAIN

SUSTAIN approach

Choice of **core** and **optional** indicators for all issues of the 4 pillars (Governance, Social, Economy, Ecology) to allow comparisons across regions and to reflect specific local situations.



Indicator application: Data search and numerical scoring of indicators, aggregation of indicator scores to issue and pillar scores.



Moderated stakeholder exercise to self-determine the relevant importance of the Issues and Pillars, based on matrices.



Combination of the indicator application results with the weighting matrices. Visualization of the state of sustainability.



Use of the system as a decision-support tool for policy options.

(SUSTAIN, 2012)



QualityCoast label



Enjoy the most: QualityCoast



- International certification program for sustainable tourism destinations
- Developed for coastal municipalities
- Certification is based on a set of (core and optional) indicators that cover similar aspects as the SUSTAIN indicator set

(QualityCoast, 2015)





Comparison of SUSTAIN pillars and QualityCoast categories



(Schernewski et al., 2014)



Measuring the Progress and Outcomes of Integrated Coastal and Ocean Management

- Handbook published by UNESCO aims to contribute to the sustainable development of coastal and marine areas by promoting a more outcome-oriented, accountable and adaptive approach to ICOM
- ICOM is based on several principles, with sustainable development being the overarching principle

Goals	Functions
Area planning	<ul style="list-style-type: none">• Plan for present and future uses of ocean and coastal areas• Provide a long-term vision
Promotion of economic development	<ul style="list-style-type: none">• Promote appropriate uses of ocean and coastal areas (e.g., marine aquaculture, ecotourism)
Stewardship of resources	<ul style="list-style-type: none">• Protect the ecological base of ocean and coastal areas• Preserve biological diversity• Ensure sustainability of uses
Conflict resolution	<ul style="list-style-type: none">• Harmonize and balance existing/potential uses• Address conflicts among ocean and coastal uses
Protection of public safety	<ul style="list-style-type: none">• Protect public safety in ocean and coastal areas typically prone to significant natural, as well as human-induced, hazards
Proprietorship of public submerged lands and waters	<ul style="list-style-type: none">• As governments are often outright owners of specific ocean and coastal areas, manage government-held areas and resources wisely and with good economic returns to the public

- Governance performance indicators
- Ecological indicators
- Socioeconomic indicators

(Belfiore et al, 2006)



Challenges and Motivation

- There is **no commonly agreed set of indicators** that can be used to measure sustainability
- **Limited ability to measure** success of ICZM initiatives
- **Poor practical relevance** of ICZM and sustainability indicators
- **Low level of reproducibility and comparability**

But...

- **Important to raise awareness** about coastal sustainability
- The need of developing frameworks and methods that will **assist formal reporting** of ICZM effort
- Indicators are tool **to improve implementation** and monitoring processes, and they play an **important role in ICZM**



Next Steps..?



(MarketingTech, 2016)



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