



General Fisheries Commission for the Mediterranean
Commission Générale des Pêches pour la Méditerranée



LaMed-2 Project

Indicators for the sustainable management of coastal lagoons areas.

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Meeting on

Mediterranean coastal lagoons management:
interaction between aquaculture and capture
fisheries

Cagliari, Italy, 28-30 June 2011



Index.

- Introduction to Sustainability.
- InDAM experience Conceptual framework.
- PCI approach. CF + Definitions.
- Methodological approach to Indicators -Coastal Lagoons Management.



Introduction to Sustainability; Definition.

Sustainable Development: Development that satisfy the necessities of the present generations, without jeopardising the capacity of future generations to satisfy their own necessities.

Brundtland report 1987.



Introduction to Sustainability; Definition.



Sustainable development is maintaining a delicate balance between the human need to improve lifestyles and feeling of well-being on one hand, and preserving natural resources and ecosystems, on which we and future generations depend.



Introduction to Sustainability; Definitions.

UN. Río Convention 1992. Conference Environment and Development. Principles of sustainable development.

"Global perspective for a Global problem".

Origin of **Agenda 21.** "Adaptation of Principles to local context and needs".

Three pillars of sustainable development



Economic Growth



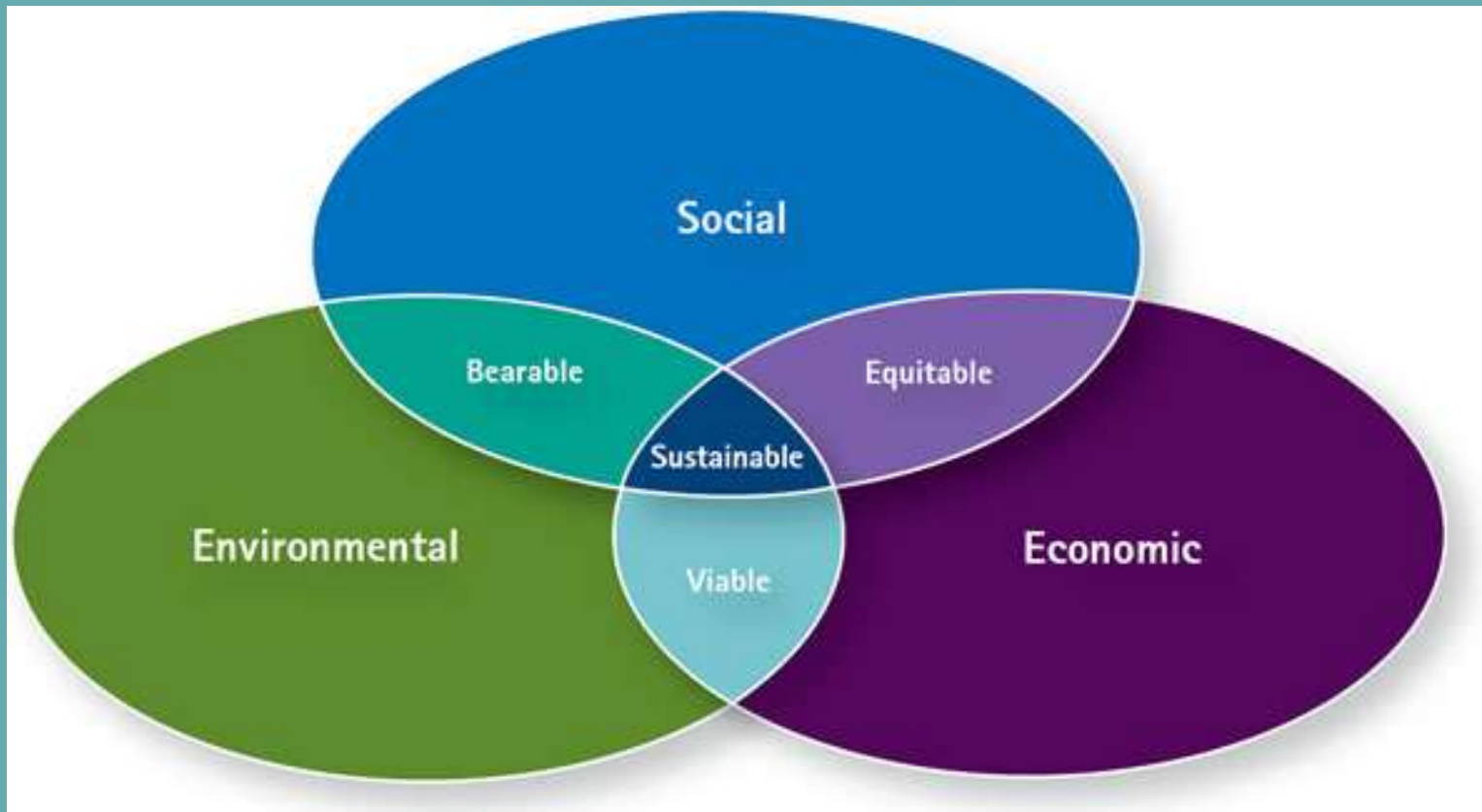
Social Justice

Environment
preservation



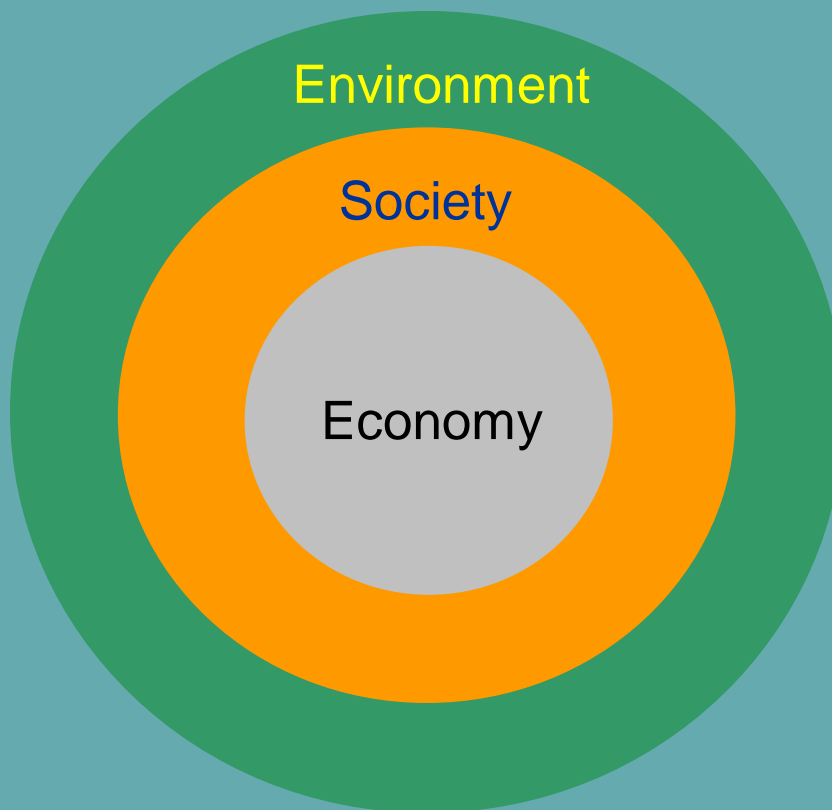


Introduction to Sustainability; Pillars of sustainability.





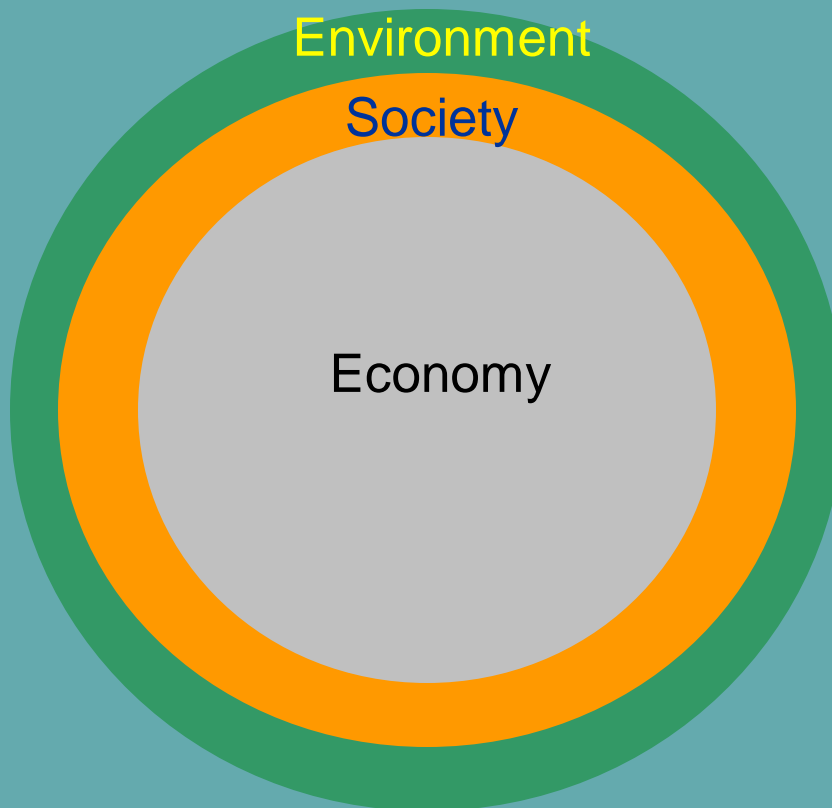
Introduction to Sustainability; Pillars of sustainability.



- ▶ **Environmentally acceptable**
- ▶ **Socially equitable**
- ▶ **Economically viable**



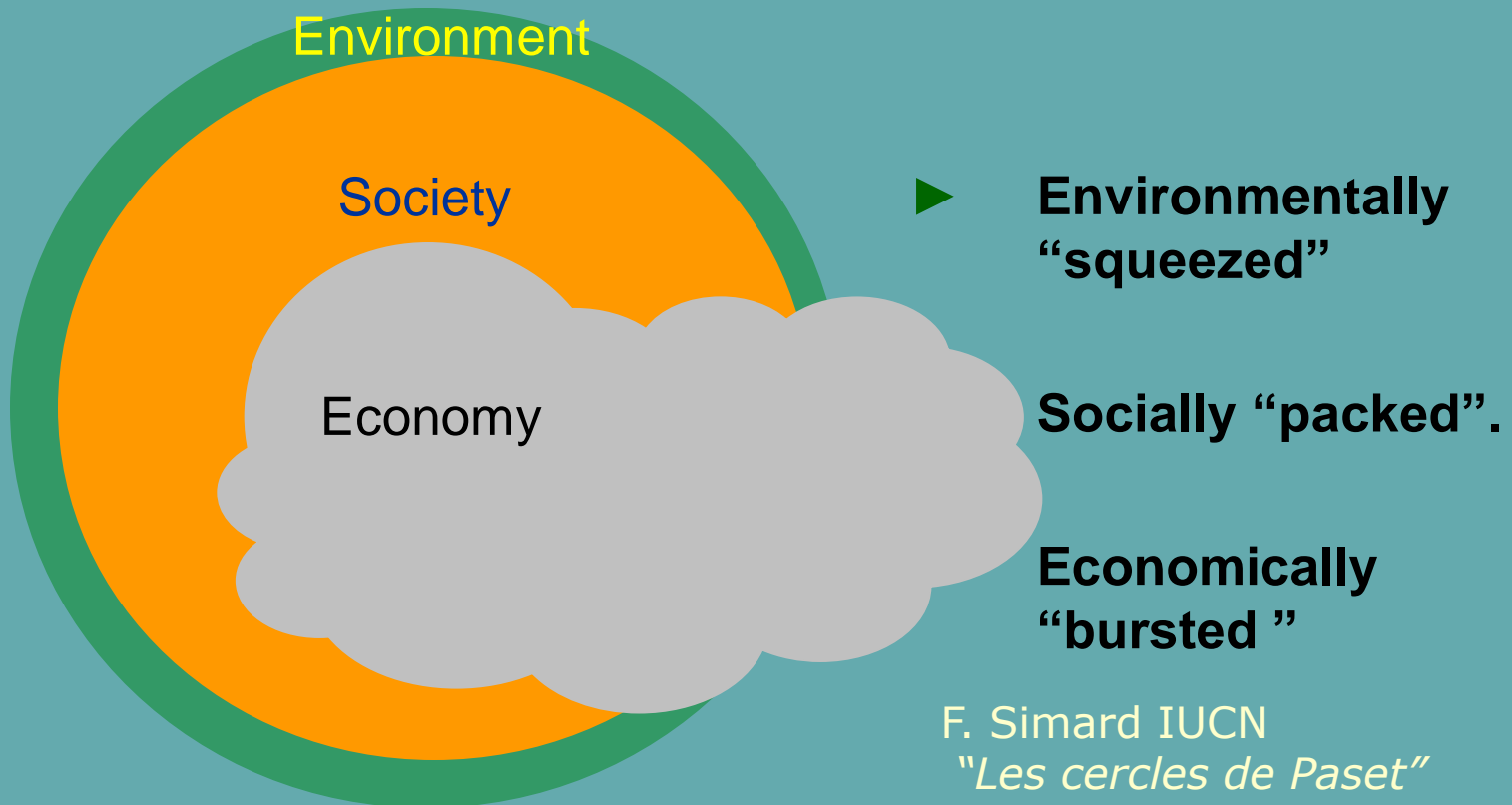
Introduction to Sustainability; Pillars of sustainability.



- ▶ **Environmentally crushable.**
- ▶ **Socially uncontrollable.**
- ▶ **Economically unpredictable.**

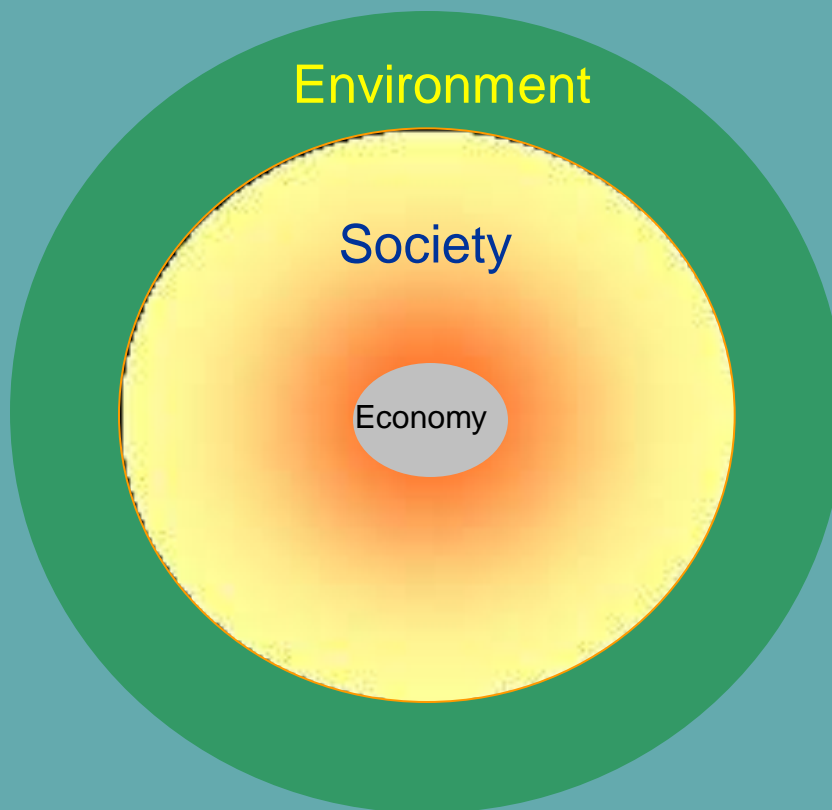


Introduction to Sustainability; Pillars of sustainability.





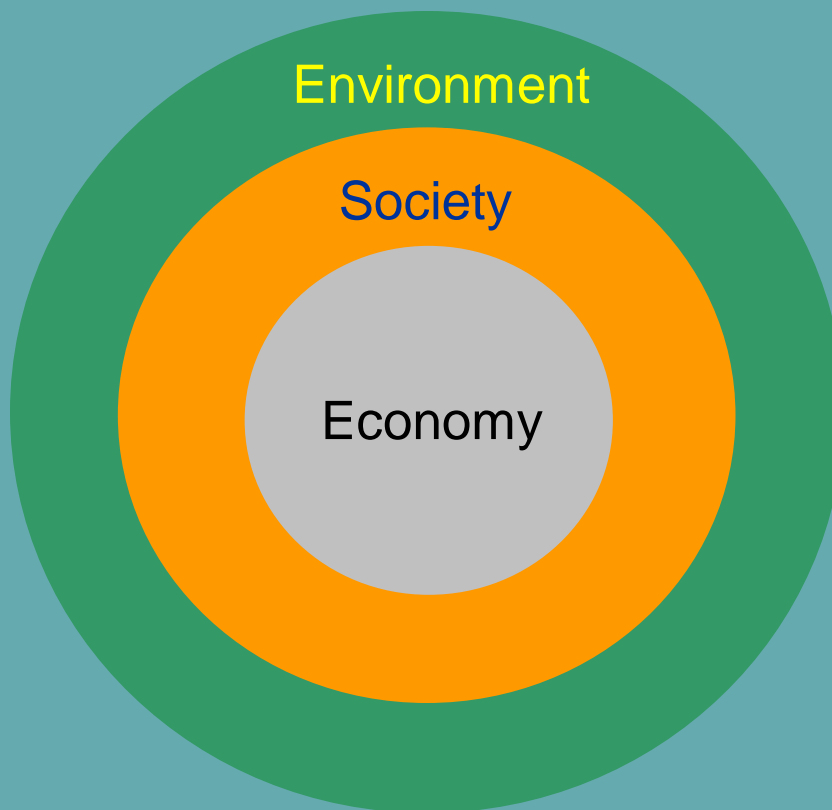
Introduction to Sustainability; Pillars of sustainability.



- ▶ **Environmentally acceptable**
- ▶ **Socially inequitable.**
- ▶ **Economically inexistence**



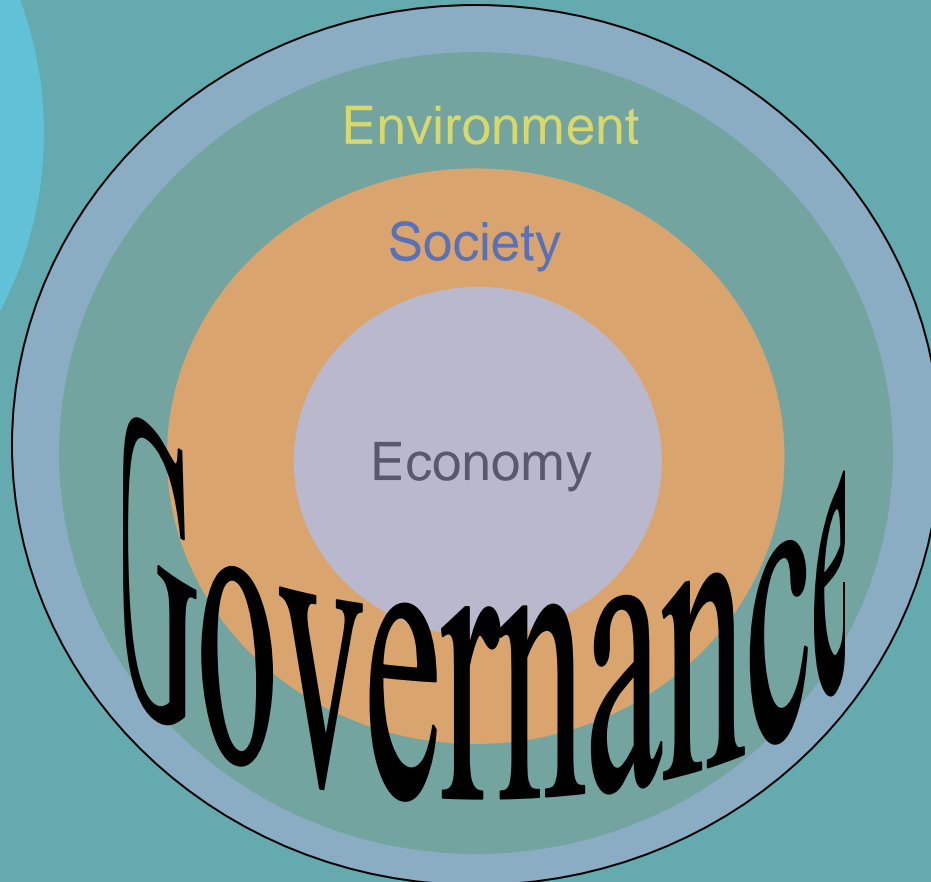
Introduction to Sustainability; Pillars of sustainability.



- ▶ **Environmentally acceptable**
- ▶ **Socially equitable**
- ▶ **Economically viable**



Introduction to Sustainability; Pillars of sustainability. Governance



Johannesburg 2002.

- Stakeholders involvement.
- Public-private partnership.



Introduction to Sustainability; Pillars of sustainability. Governance

The issue of governance implies:

- Evolution of the institutional system (set of rules and methods).
- Strength of the actors capacity to participate on decision making processes.
 - Collective learning issues.
 - Empowerment.
- Grater transparency in the collective decision-making processes.

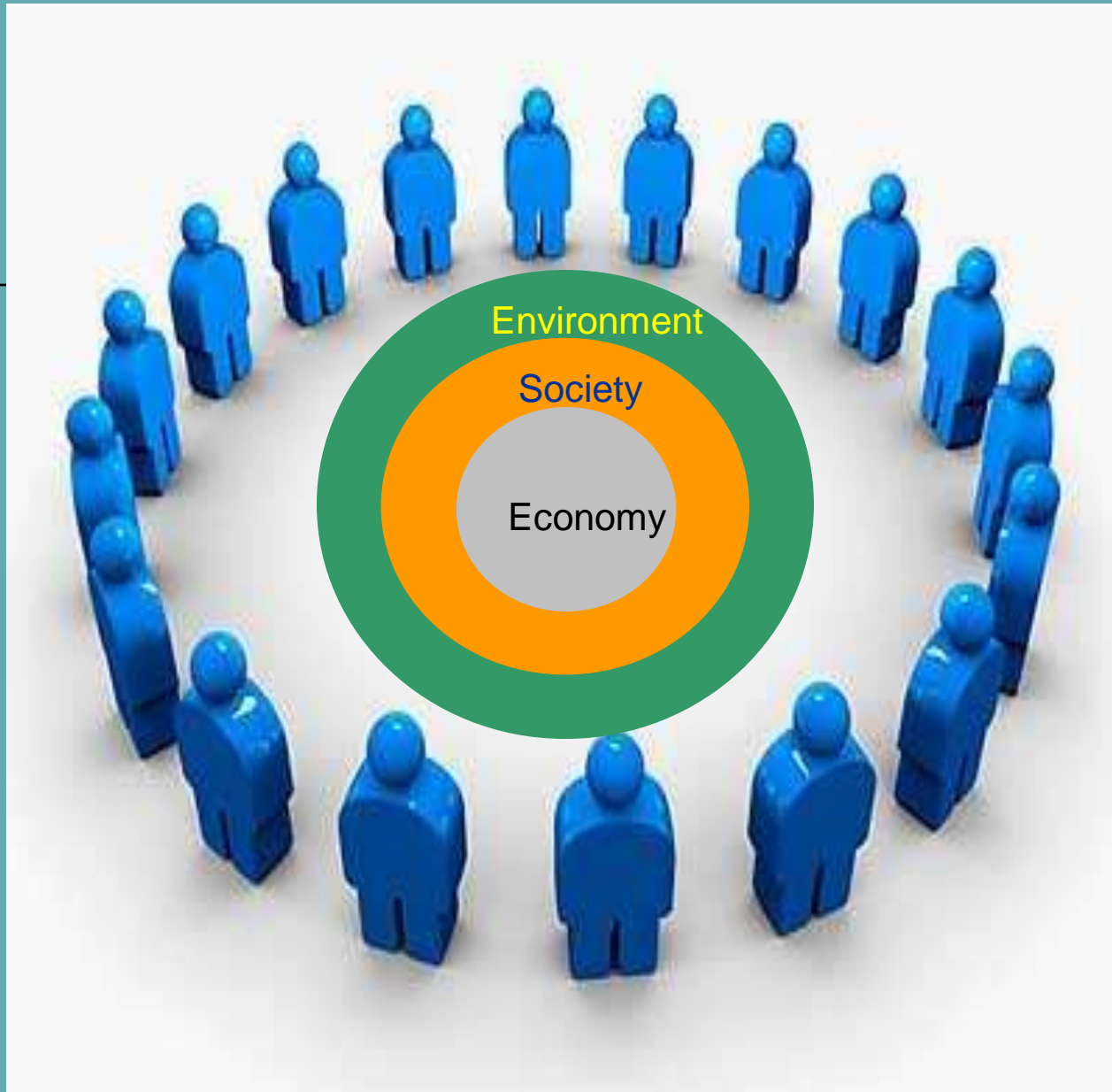
Institutional dimension – Governance dimension



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The InDAM Project framework

Definition:

InDAM Project; “Indicators for Sustainable Development of Aquaculture and Guidelines for their use in the Mediterranean”.

Aim:

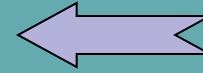
Assist the GFCM countries in the elaboration of a consensus definition and guidance towards aquaculture sustainability in the Mediterranean region.



InDAM Conceptual Framework

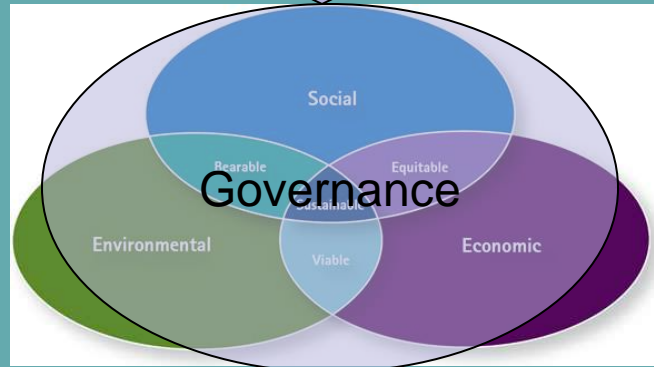


Identification of methodology
 Agreement on method common understanding and terminology



Data Review

Experts & Stakeholders meetings workshops



Case Studies

Preliminary list of indicators at Regional level

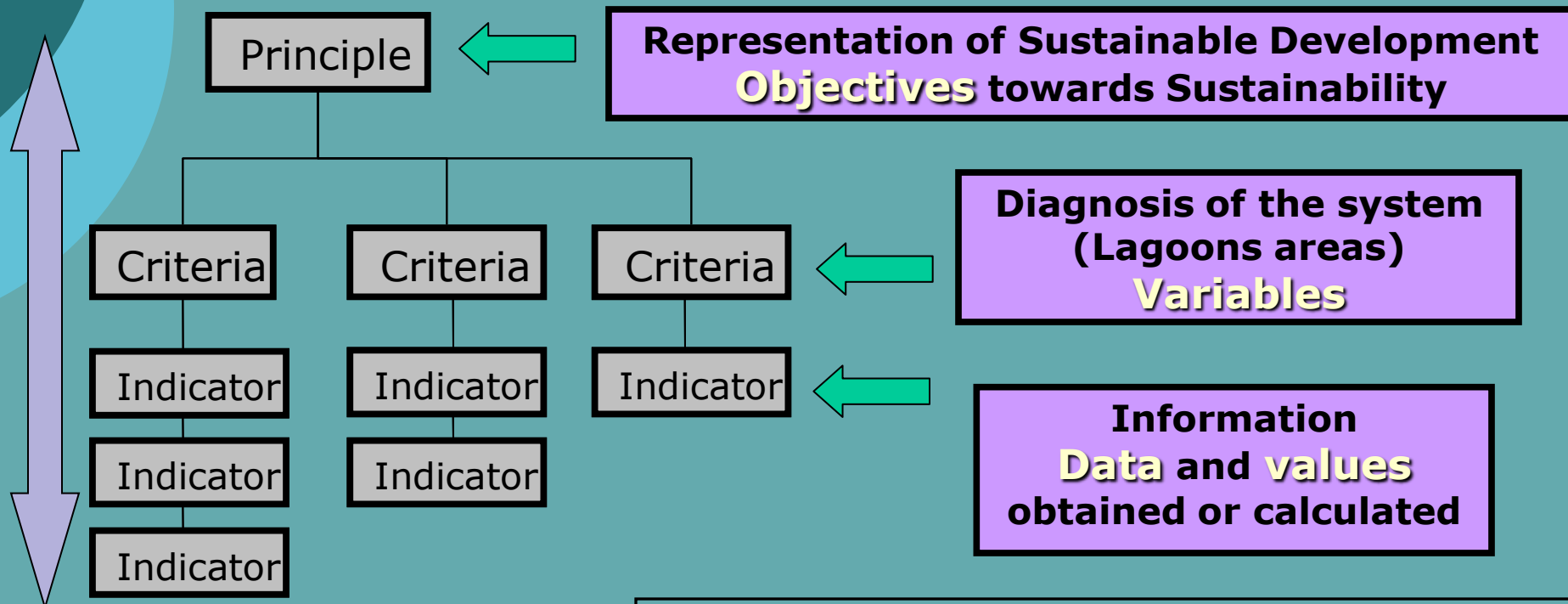
Prioritisation of indicators At local level



Data bank



PCI Approach Conceptual Framework.



[EVAD: Evaluation of aquaculture system sustainability.]



Principles; Definition.

Principles: From Latin "*principium*" = "*what serve as a basis*" for the action to be taken towards an objective of sustainability.

- Should have general scope and acceptance.
- Should be considered as a rule or habit.
- Should be formulated as short statements, with action verbs originated from management vocabulary such as;

Contribute, ensure, adapt, strength...

Examples:

Economic D. = Strengthen the Total Economic Value of the ecosystem.

Social D. = Contribute to the quality of life of the users.

Environment D. = Minimize the impact of the activities on the environment.

Governance D. = Promote participation in the decision-making process.



Criteria; Definition.

Criteria: Like a second-order principle.

Break down of Principles into several homogeneous elements to link with the characteristic of the system.

- Should have a more specific scope related to the issues.
- Should identify variables.
- Should be formulated expressing the degree or state of the variable.

Level of...Control of...Existence of ...Access to...Capacity of...

Examples:

Economic D. = Existence of activities depending on the ecosystem.

Social D. = Existence of areas dedicated to visitors.

Environment D. = Control of non-selective fishing devices.

Governance D. = Level of participation of stakeholders.



Indicators; Definitions.

Indicators: A simple way to express the information related to a variable or a process.

- ❖ *Indicators are communication tools which serve to quantify and simplify information in order to make it comprehensive to a target audience.*
- ❖ *They are tools to assist monitoring, evaluation, forecasting and decision making.*
- ❖ *Indicators illustrate the variation observed according to the available data.*
- ❖ *They serve to judge if an action is effective or not.*



Indicators; Examples.

Economic D. = Existence of activities depending on the ecosystem.

Number of activities dependent on the ecosystem.

Social D. = Existence of areas dedicated to visitors.

Number of areas dedicated to visitors.

% of surface for visitors / total surface.

Environment D.= Control of non-selective fishing devices.

Number of wild species captured.

% of wild sp / target sp.

Governance D. = Level of participation of stakeholders.

Number of participants at consultative meetings.



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Indicators; Attributes or qualities.

Attribute	Definition
Relevance to criteria and principle	it is relevant to goals of endorsed criteria and principle.
Understandability	it is clear and perceived by all stakeholders in the same manner and is easily communicated.
Reliability	it has a sound scientific base and methodology with successful previous use.
Reproducibility/verifiability	it is capable of being reproducible at different time and places with verifiable results.
Data availability	it is estimated/produced using available information/data or can be estimated/produced with reasonable cost/effort.
“Permanence on time”	It last on the medium long term,
Transparency	it is accessible by all stakeholders.
Availability of reference values	it can be compared/monitored with some readily available reference points.
Acceptability / appropriateness	it is endorsed by different stakeholders.
Robustness	it is difficult to manipulate



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Indicators for the Sustainable Management of Coastal Lagoons Areas.

Methodology associated to the process.



Participatory approach



co-construction process.



Consensus on objectives, methodology and expected results.



The PCI approach

Nesting approach; “Think globally, act locally”

General Principles are adapted according to the specific needs of the context and to the scale of application so that to facilitate ownership and implementation.

Steps:

- Inventory process according to the dimensions of SD.
- Approaches by issue, objective or theme.
- Logical progression: **Principle, Criteria** and **Indicators**.

This process helps on the definition of indicators and allows the linkage of indicators to general principles of sustainability.



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Methodology associated to the process. Step I. Descriptive – Data availability

Identification of all Stakeholders

- Producers (Aqua. salt)
- Fishermen.
- Administration.
- ONGs.
- Researches.
- General public. Users

Identification of uses and activities

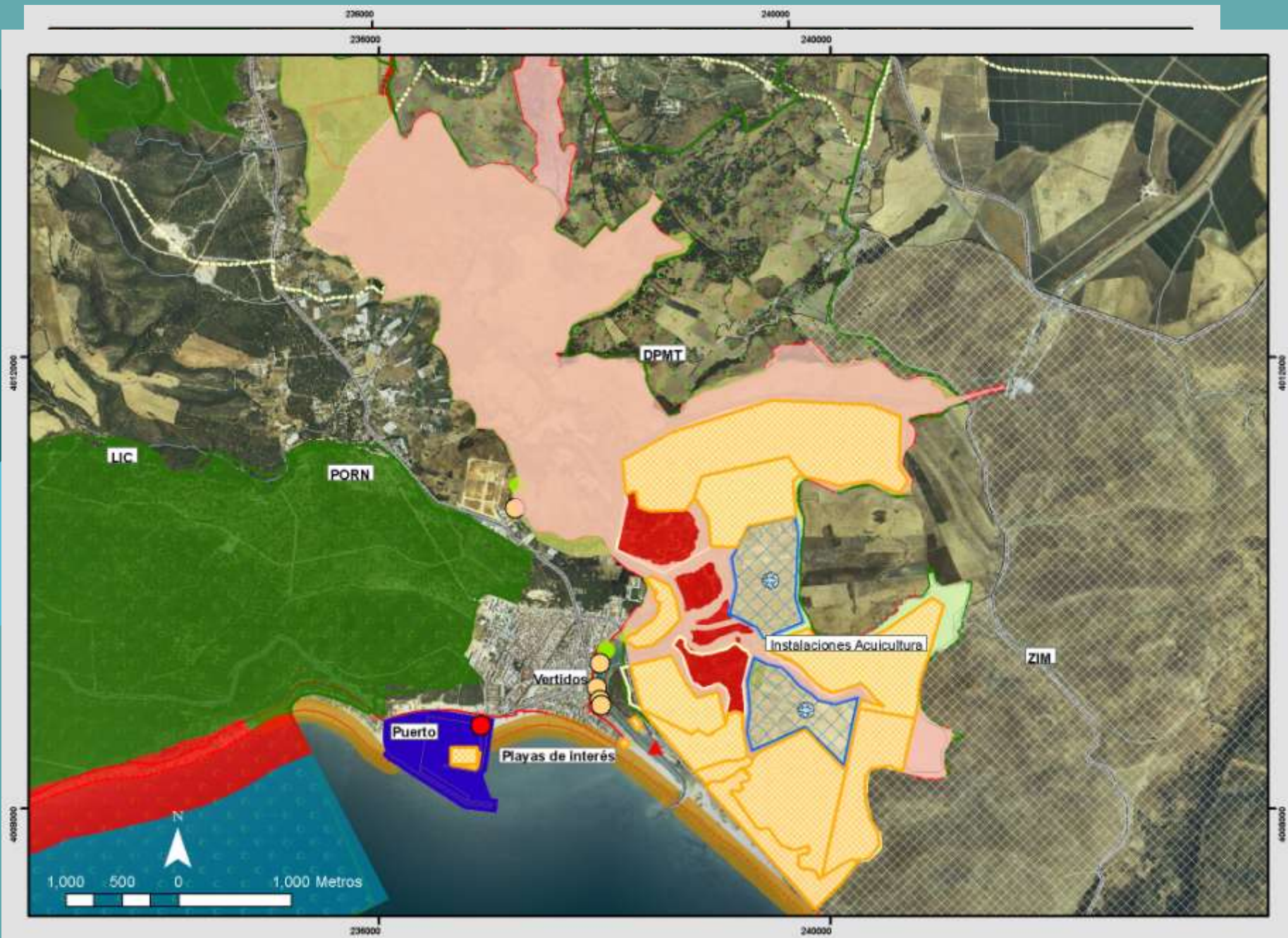
- Fisheries.
- Aquaculture.
- Renewal energies.
- Industry.
- Urban areas.
- Tourism.
- Infrastructures...



Identification of interactions

Identification of environmental conditions

Biodiversity, Water quality, hydrodynamics, ...





Indicators for the Sustainable Management of Coastal Lagoons Areas.

Step. II

Identification of common problems

Identification of the objectives of sustainability



Principles

X

Dimension

E, S, Ec, G





Methodology associated to the process. Phase II. Co-Construction

- ❖ Identification of **Principles** as **objectives** of sustainability.

From data base: Rio Conference and existing sustainable management reference frameworks, previous experiences InDAM...

- ❖ Identification of **Criteria** as **variables** to describe the principles.

From data base collected by experts on every site.

- ❖ Identification of **Indicators** to **measure** the variables.

Validate from attributes
Existing standards and reference points.



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Special features

Environment

Principle



Society

Criteria

Criteria

Criteria

Indicator

Indicator

Indicator

Indicator

Indicator

Economy

Principle



Criteria

Criteria

Criteria

Indicator

Indicator

Indicator

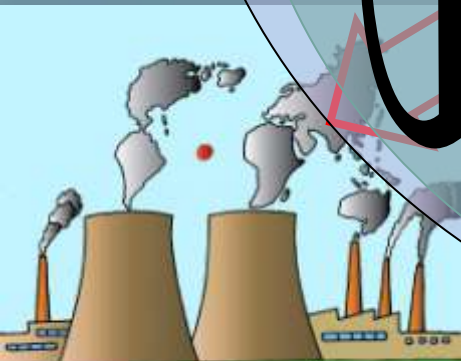
Indicator

Indicator

Governance



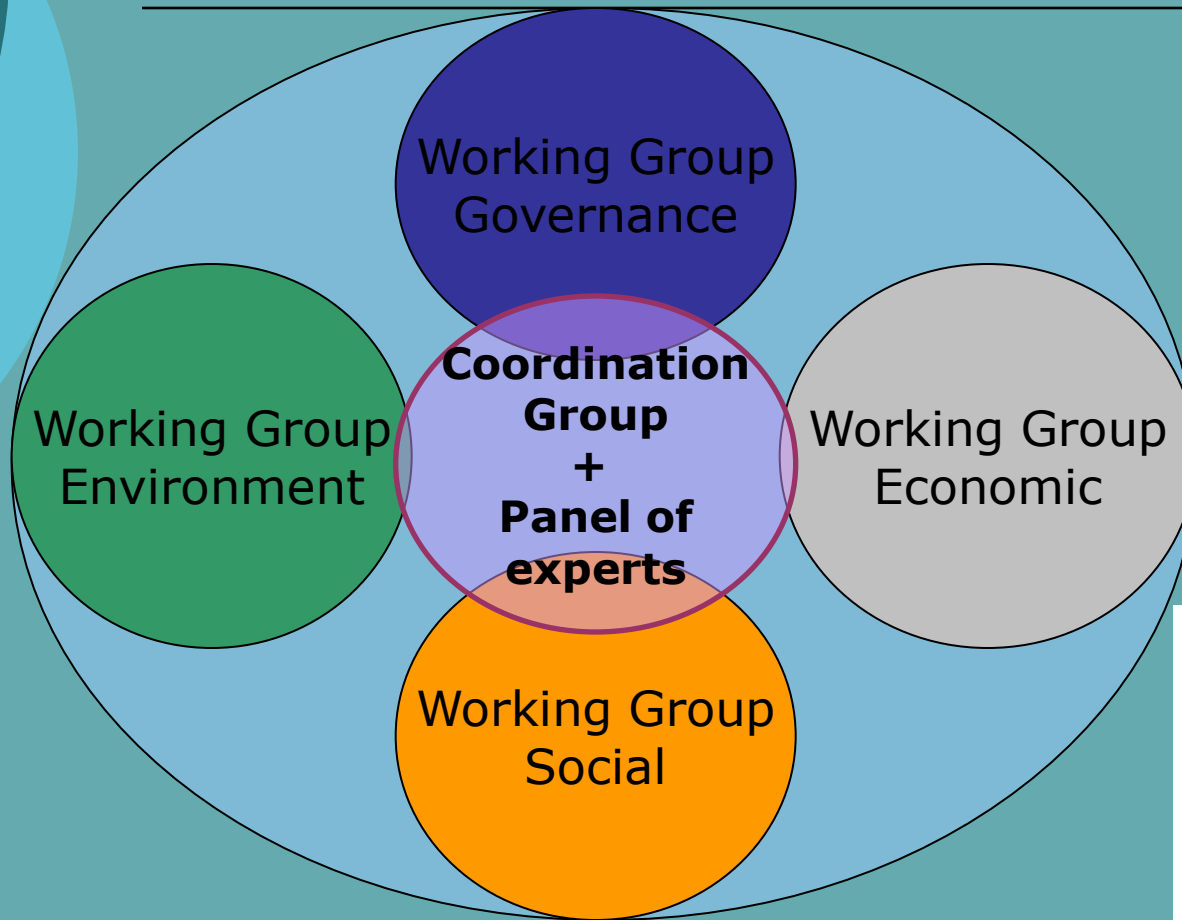
I used to play here as a kid, but of course, that was before Humans built that sewer pipe...





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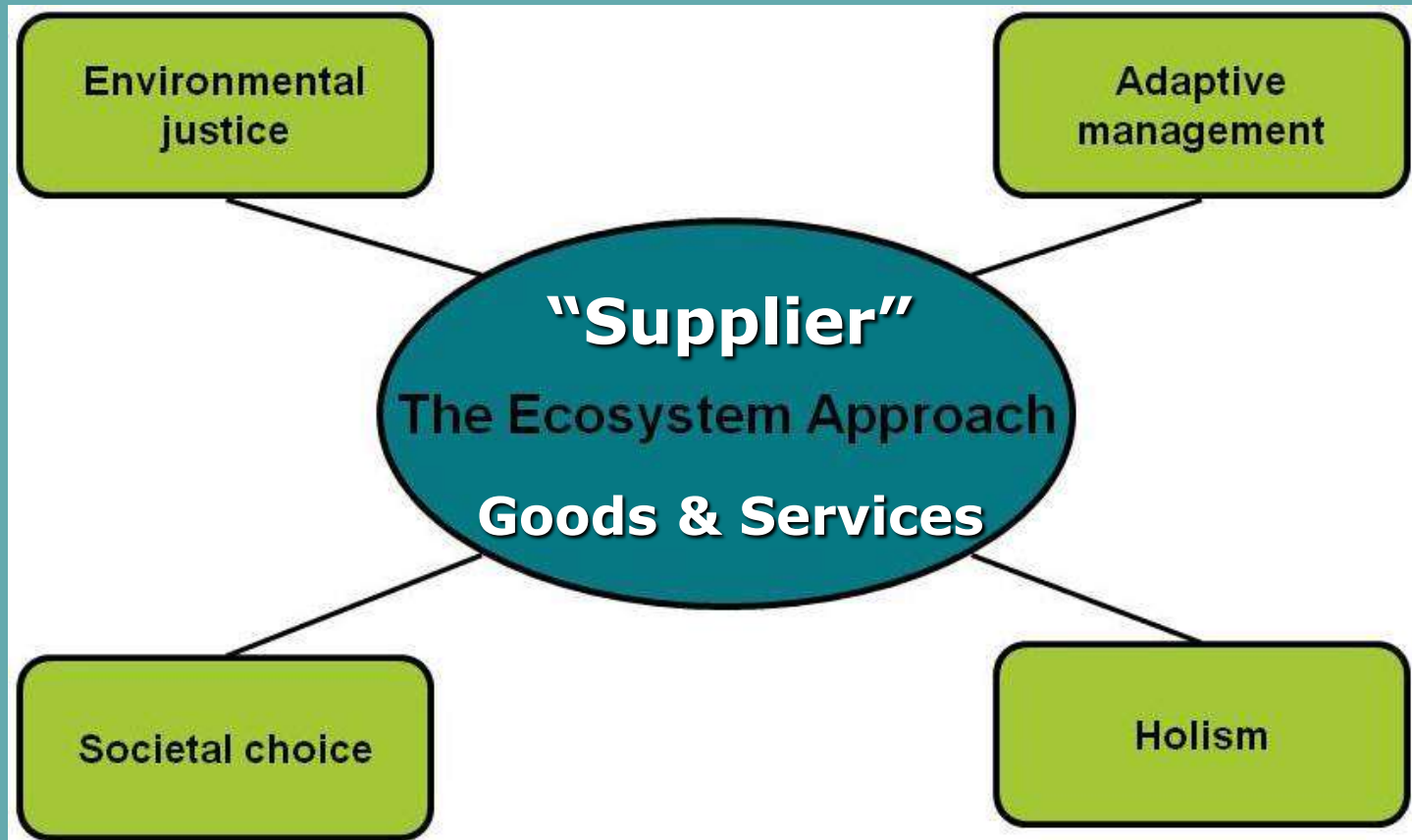
Organizational framework





Indicators for the Sustainable Management of Coastal Lagoons Areas.

Methodology associated to the process.





Thanks very much!

Meeting on

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