

## Criteria for a framework of analysis for transdisciplinary and collaborative co-design processes in coastal management

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# Framework of analysis for transdisciplinary and collaborative design processes in coastal management



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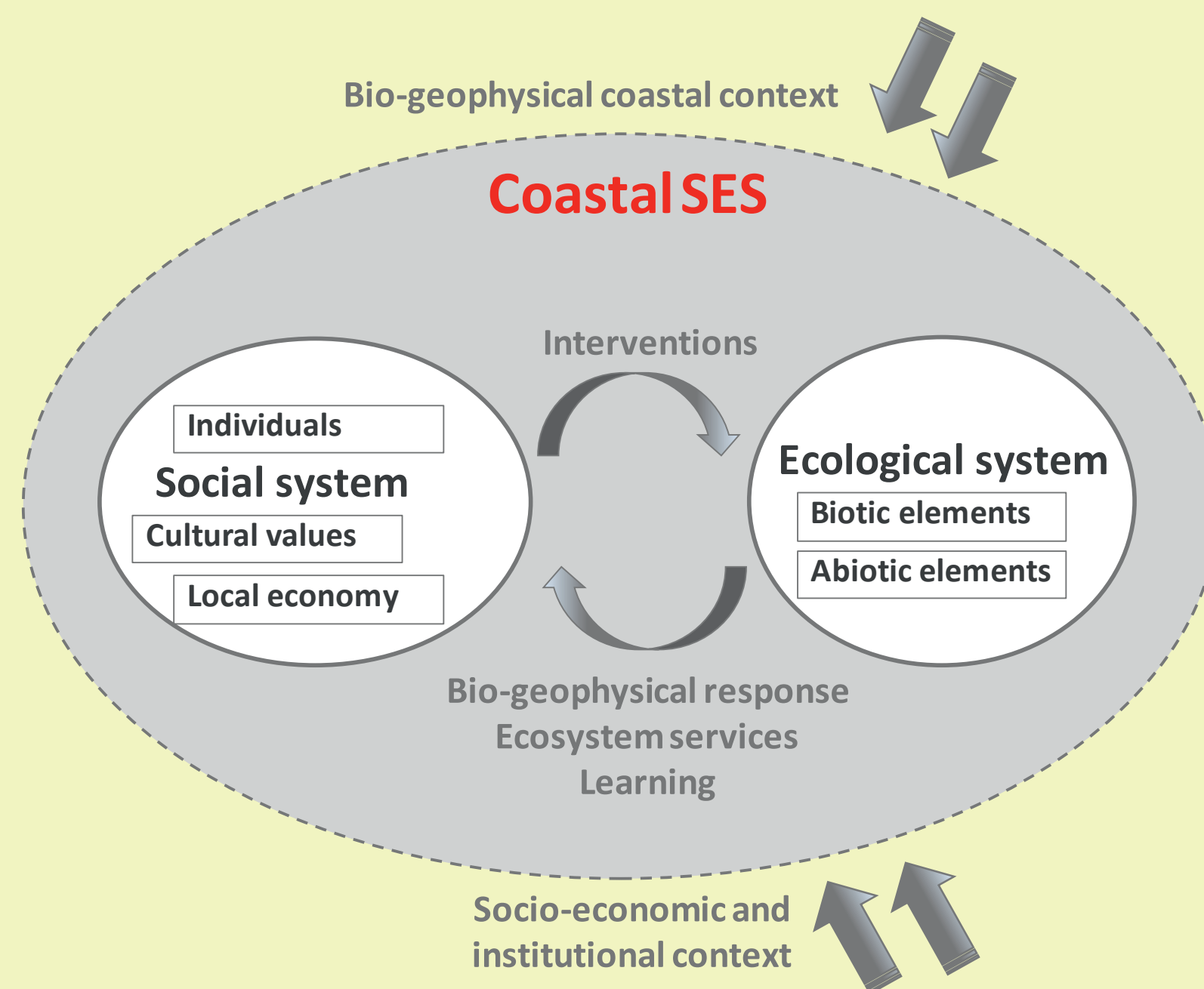
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**Aim: to distill practically recognizable criteria for collaborative design processes in coastal management**

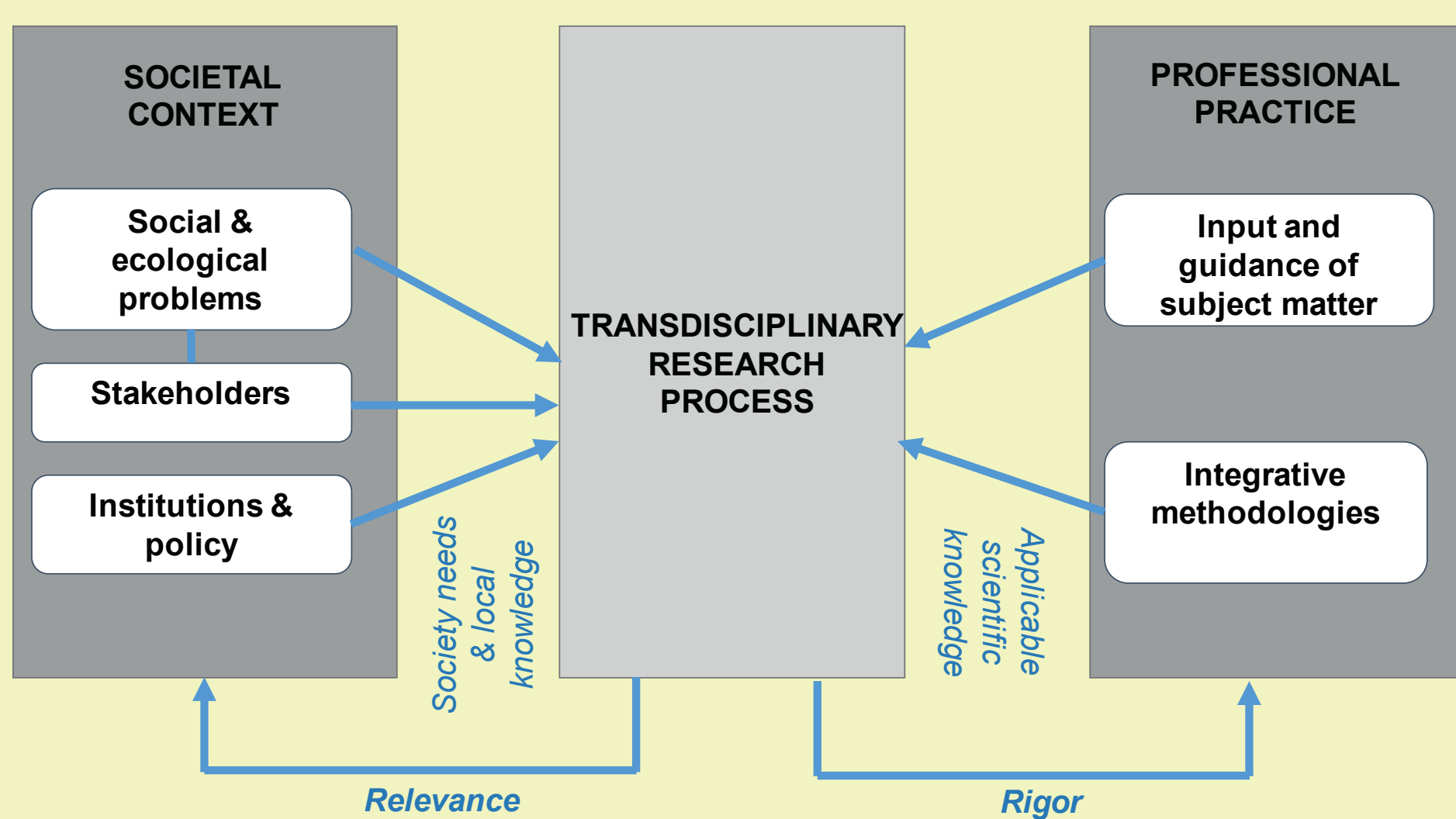
## Lessons from theory

### Social-ecological systems

- Currently, the empirical **understanding of ecological and social factors** is not evenly balanced.
- In fact, where biophysical or economic factors are targeted, often **stakeholders' priorities, knowledge, preferences and values are overlooked** in coastal management plans.
- To utilize social-ecological frameworks in coastal management, we need more understanding of stakeholders' perceptions.



### Transdisciplinary research



- **Requires integration** of formal and informal knowledge
- **Scientific rigor and societal relevance** link research to respective bodies of knowledge
- Emphasis on inclusion of **local knowledge**

### Integrated Coastal Management

- Involves a bottom-up approach, with multiple centers of decision-making (**polycentric governance**)
- **Perceptions of policy makers, scientists, citizens** are influencing coastal programs implicitly and explicitly.
- Success depends on stakeholder values, ecological values and engineering values.
- Particularly for coastal management, the **knowledge of the system context** of the designed intervention is essential.

## Experiential case study learning

### Case study: The Slufter, Texel, The Netherlands

**Where?** The Slufter, a **nature reserve** with a **flood defense function**.

- Tidal inlet
- 400 - 600 m wide opening,
- Narrow channel (10 m) links North Sea with dune valley (400 ha)
- Multifunctional area



### Approach

**What?** A participatory activity in a 1-day workshop setting

**Aim?** To **build and explore shared system understanding**

**Who?** Between local stakeholders, researchers and policy makers.

**Knowledge Input:** stakeholder perceptions and system understanding from researchers and decision makers:

1. Abiotic simulation model
2. Stakeholder interviews and expert interviews
3. Information on policy options and ongoing decision making processes

### Observations

- × Local stakeholders are part of a **close-knit island community**
- × many other decision-making processes
- × **Stakeholder fatigue**
- × Participants with **professional authority dominated** the discussions
- × Professionals display their expertise with **language** that is not understood by locals.
- × A different understanding existed among all participants in terms of **dynamics, temporal and spatial scales**.

- × **Local stakeholders categorically mistrusted insights derived from simulation models** (a core element of the workshop).
- ✓ Stakeholders know how to access and alert relevant authorities
- ✓ **Conceptual system understanding** on abiotic processes provided a basis for discussion
- ✓ **Interviews were successful in sharing understanding** of varying stakeholder preferences
- ✓ **Stakeholders' preferences changed** with new information and discussion

### Evaluation on content

Is the success of the activity based on the rationale?

1. What **knowledge** was exchanged? And when?
2. Can we assess the feasibility of the solution **considering societal and professional values**?
3. Can participants recognize their contribution?
4. Can participants **locate themselves** in the social-ecological systems view?

### Methodological considerations

1. **Process serves as input** for the technological design process
2. Justified **level of participation**
3. Process gives priority to finding **stakeholder values**

### Participants

Do participants cover a wide range of system knowledge?

- ✓ Are selected participants **neutral and independent**?
- ✓ Are all participants equally **comfortable** sharing their views?
- ✓ Are the ethics of involvement communicated to ensure **integrity of process**?
- ✓ Is the **facilitation perceived to be neutral**?

### Problem

- ✓ Does the starting point for the process relate to **participants' understanding** of the problem?
- ✓ Is the problem **'urgent'**?
- ✓ Are social, ecological and technological values appreciated during the activity?
- ✓ Time scale uncertainty
- ✓ Unequal distributions of costs and benefits

## Key lessons for designing collaborative activities in coastal management

### General discussion

- Current coastal management policies aim for physical solutions (whereas solutions may lie in the social realm)
- The experiential learning is based on one case study to research place-based context and knowledge
- Results that are sufficient for research, are not necessarily sufficient for the policy arena.

### Next research steps:

1. Eliciting values through collaborative design (instead of discussion)
2. What are the implications for other coastal contexts?
3. Can we move to higher levels of participation for coastal problems?