



How to structure and prioritize information needs in support of monitoring design for Integrated Coastal Management

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Integrated Coastal Management cannot operate effectively without reliable information and knowledge on changes in the environment and on the causes of those changes. Monitoring is essential to provide data needed for a real understanding of socio-economic and ecological functioning in multi-user nature areas. We present a web-based and comprehensive assessment methodology to articulate, structure and prioritize information needs and ensuing monitoring needs. We applied this methodology in the Dutch Wadden Sea Region, which includes a designated UNESCO World Heritage nature reserve. The methodology consists of the following steps: i) exploring social–ecological issues of concern and defining the monitoring scope; ii) articulating information needs expressed as tractable questions; iii) elaborating monitoring needs; iv) grounding in scientific models and current monitoring; v) synthesizing assessment findings into target entities, i.e. analysis variables for monitoring.

In this paper we focus on the first three steps. As part of our methodology we performed two online surveys amongst a broad range of stakeholders and amongst monitoring professionals. In the case of the Dutch Wadden Sea Region, main monitoring questions were related to biodiversity and food web relations; effects of fisheries and its pressures on the ecosystem; channel and port dredging; spatial planning and multifunctional use; sustainable energy production; and effects of changing storm regimes due to climate change. Subsequently we elaborated these general issues into analysis variables within five themes. The presented methodology enables large scale and unbiased involvement of stakeholders in articulating information needs in a multi-user nature reserve like the Wadden Sea. In addition the methodology facilitates the input and feedback of monitoring professionals by providing a detailed elaboration of monitoring needs.