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## Ocean and Coastal Management

journal homepage: [www.elsevier.com/locate/ocecoaman](http://www.elsevier.com/locate/ocecoaman)

## Reprint of “Inclusive development and coastal adaptiveness”

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## ARTICLE INFO

## Keywords:

Inclusive development  
 Coastal zone management  
 Interactive governance  
 Adaptive governance  
 Climate change

## 1. Introduction

There is increasing confirmation about the potential rise in sea-level and the expectation of extreme weather events lashing coastal regions according to the Intergovernmental Panel on Climate Change (IPCC) (Wong et al., 2014). This will exacerbate local and regional marine and coastal challenges. This calls for integrated, interactive and adaptive coastal zone governance. However, much of the coastal zone management literature tends to take a technocratic, growth-oriented focus. This overlooks the differences between the Global South and the Global North. Developing countries are more vulnerable to environmental impacts because they face (a) a combination of uncertain environmental impacts such as climate change which leads to sea-level rise, salt water intrusion, exposure to extreme weather events, and rising average temperatures; (b) rising population densities in coastal areas also through immigration (UN Habitat, 2010); (c) increasing disparities in income with a large inflow of very poor people as well as strong economic growth in certain niches; (d) changing geographical boundaries between urban and rural areas as rural-urban migration leads to the growth of peri-urban areas; (e) a higher incidence of ‘land grab’ and ‘ocean grab’ in coastal regions (Bavinck et al., under review); as well as (f) a changing dependence on the ecosystems of the region (e.g. drinking water resources, water for agriculture, fish resources).

At the same time, the challenges in the developed world are somewhat different. While they too face uncertain problems and grapple with the resolution of multiple-use conflicts, demographic issues have more or less stabilized or population size is decreasing,

spatial boundaries are more carefully maintained and monitored, and the reliance on local natural resources often gives way to large scale dependence on imported resources and the externalization of environmental impacts. However, here there may be a single minded focus on environmental issues and as technologies become more and more sophisticated, processes may become more technocratic. Rules may become too rigid and adaptation processes may be superficial.

We argue that a single-minded technocratic, growth-oriented focus will paradoxically lead to greater vulnerability for the poor. It will exacerbate their relationship with ecosystem capital and its services in the developing world. In the developed world, it may lead to artificial ‘problem structuring’ which goes hand in hand with the ‘depoliticization’ of problems.

Questioning the continued growth focus has led us to use the framework of inclusive development and to elaborate it in relation to the challenge of coastal adaptiveness (see 2.2). We address the question: What does inclusive development mean for the visions, processes and approaches to coastal adaptiveness? How can a conceptual framework be developed that further elaborates on this concept? Section 2 of this paper elaborates on the two key concepts we use – coastal adaptiveness and inclusive development – based on the scholarly literature. Section 3 elaborates on case studies of actual experiences in coastal adaptiveness in different parts of the world and on different issue areas – these case studies are part of this Special Issue. Section 4 integrates the lessons learnt from the case studies with that of our theoretical framework to draw a framework for understanding coastal adaptiveness from an inclusive development perspective. Section 5 concludes.

DOI of original article: <http://dx.doi.org/10.1016/j.ocecoaman.2016.11.008>

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## 2. Key concepts: coastal adaptiveness and inclusive development

Coastal development processes are inadequately taking global change into account. IPCC (Wong et al., 2014) argues that the three key impacts of climate change which will affect coastal systems are sea level rise, increase in ocean temperatures and ocean acidity. Sea-level rise will affect low-lying coastal areas through submergence and flooding. Ocean warming and acidification will negatively affect coastal ecosystems, coral reefs and the marine life that depends on them. These trends will be further exacerbated by other risks to coastal areas in terms of demographic changes, urbanization and economic growth. IPCC concludes from the literature that the costs of taking action to protect coastal areas outweigh the costs of inaction and the risks people will then face (Wong et al., 2014). However these costs will vary from place to place: the relative adaptation costs for the small island developing states (SIDS) and coastal developing countries is expected to be quite high. Furthermore, those who will bear the costs of inaction may not be those who bear the costs of action.

In our view, coastal adaptiveness requires a normative or discursive starting point and policy goals and instruments will inevitably be designed along these lines. We argue in favour of inclusive development but recognize that different societies will have different priorities (see 2.2). Coastal adaptiveness will require some kind of adaptive governance model; these models include adaptive management, adaptive co-management, and anticipatory adaptive management (Hurlbert and Gupta, 2016). Management models tend to be technocratic in nature, while governance models focus also on the values and processes of organizing society, thereby encompassing management (Kooiman, 2003). Co-management models look at how technocrats can manage in collaboration with other social actors. Some of these models focus on current problems, whereas anticipatory adaptive management explicitly adds the dimension of scenario-building into the future and backcasting to the present. We argue in favour of adaptive governance and suggest that institutions – or the rules structuring human behaviour (Young, 2002; Ostrom, 2005; Bromley, 2006) – should have characteristics that enhance the capacity of society to respond to problems (see 2.3).

### 2.1. Inclusive development

Inclusive development is not just popular in the scholarly literature, it plays a key role in the UN's document on the Sustainable Development Goals (UNGA, 2015). We see inclusive development as a paradigm that questions the dominance of the 'growth' approach and emphasizes the social and ecological aspects of sustainable development. Inclusive development also requires relational inclusiveness. This implies the inclusion of instruments that change the power relations between actors (Hickey et al., 2015; Gupta et al., 2015a, 2015b). Unlike others (Hickey et al., 2015), we argue that inclusiveness goes beyond social and relational inclusiveness to encompass also ecological inclusiveness (Gupta et al., 2015a). The key hypothesis of inclusive development is that the benefits of development will only be equitably shared with the most marginalized in society when it adequately incorporates the maintenance of ecosystem services and ensures that there is a clear redistribution of power in society in favour of the poor. This is based on the argument made in the Millennium Ecosystem Assessment that the continued provision of ecosystem services is essential for enhancing human wellbeing (cf. MEA, 2005).

### 2.2. Coastal adaptiveness

We argue that coastal adaptiveness can build on the theory of adaptive governance, which is a form of interactive governance (Kooiman, 2003; Torfing et al., 2012). Interactive governance provides a framework for examining the governability of societal systems, such as with regard to the coast, while adaptive governance focuses on how

specific institutional characteristics can enhance the adaptiveness of society.

Interactive governance theory separates societal systems into three parts: the governing system, the system it governs and the interactions that take place between the two (Kooiman and Bavinck, 2013). Interaction can be first order – in terms of daily operations, second order – in terms of the rules and structures that govern, and of a meta order – in terms of the underlying norms that inspire structures and rules. When norms and principles – the meta-order – are not out 'on the table' for governing actors to debate, governance suffers from a lack of transparency, thereby risking conflict, exclusion of important parties, and illegitimacy (Kooiman and Jentoft, 2009). If the meta order is risk averse, the other orders cannot function with any degree of innovation, and this reduces its adaptiveness. Interactive governance also recognizes various modes of governance, varying from self-governance, hierarchical governance to co-governance. Each of these modes has its range of application, and none are *a priori* more effective than another. Co-governance, which brings together governing parties across scale levels, may, however, be considered more 'adaptive' than the other two governing modes (Kooiman and Bavinck, 2013).

In adaptive governance we use adaptiveness in preference to resilience (Nelson et al., 2007; Folke et al., 2005) as we see resilience as a concept that is inappropriately borrowed from the natural sciences for use in the social sciences and that which therefore inadequately captures social processes (Olsson et al., 2015). Since institutions, or the rules of the game, have developed through history, they are shaped by local discourses, which in turn shape local practices. Institutions ensure stability and predictability and allow societies to progress (Scharpf, 1997). Local institutions may have the ability to govern common pool resources sustainably if they meet eight conditions (Ostrom, 1990). However, with globalization, local to global institutions are not only being shaped by practices and discourses at other levels of governance but in turn are also shaping them. Furthermore, in the era of the Anthropocene, humans have had major impacts on our ecosystems (Steffen et al., 2004). This means that institutions will have to keep adapting to, and possibly predicting and preempting the possible negative impacts of environmental change; most of these changes will be characterized by a high degree of uncertainty. This requires institutions to stimulate the adaptive capacity of society. The literature on how institutions can enhance the adaptive capacity of society argues that such institutions need to meet the criteria of variety, learning capacity, room for autonomous action, leadership, resources, and fair governance. The literature on adaptive governance is vast (Hurlbert and Gupta, 2016), but all strands aim at enhancing adaptive capacity.

Coastal problems are frequently unstructured in that there is lack of consensus on the science and values and wicked in that the costs and benefits of addressing problems are not evenly distributed. Governors have to cope with uncertain future climate events and their impacts and with densely populated coastal regions with multiple interests, this requires variety (Buckley, 1968: 495) of discourses, strategies and methods to address problems (cf. Jentoft and Chuenpagdee, 2009). The rule of requisite variety postulates that there is a correlation between the complexity or variety of a problem with the complexity or variety in the institutions that should address the problem (Kooiman, 2003); this implies that there should be redundancy rather than efficiency in the system (Conant and Ashby, 1970). This idea critiques discourses focusing on smart, rational, reductionist systems so often embedded in coastal zone management literature. At the same time, variety taken to its extreme can "paralyze action, imply suffocating consensus, and negotiated nonsense" (Gupta et al., 2010 citing Termeer, 2007).

At the same time, institutions need to be able to learn (Pahl-Wostl et al., 2007; Mahon et al., 2005). Single loop learning calls for improvement in routines, double loop learning calls for challenging basic assumptions, and triple loop learning calls for questioning doubts and taking uncertainties into account, stimulating institutional memory, building trust and often means that societies must engage in

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