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Moving towards sustainable coasts: A critical evaluation of a stakeholder engagement group in successfully delivering the mechanism of adaptive management

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ABSTRACT

It is widely recognized that there is a need for engagement between stakeholders to establish locally accepted strategies for sustainable coastal management solutions around the world. Adaptive management approaches have emerged as one of the preferred mechanisms in coastal zone management. Central to the application of adaptive management is the effective engagement of stakeholders to encourage participatory decision-making. There are relatively few studies which have analysed the effectiveness and dynamics of stakeholder groups to establish sustainable adaptive management in practice, and identify what opportunities and challenges can arise from such collaborative approaches. This research critically evaluates stakeholder engagement in the adoption of adaptive management at East Head, England. The study has identified significant issues and opportunities that have arisen throughout the decision-making process. It has found that a major challenge has been to achieve acceptance of the mechanism of adaptive management, particularly in relation to aspects of uncertainty. However, it is of critical note that the advisory group in question has become a valuable vehicle in bringing together key stakeholders throughout all stages of the adoption of the adaptive management approach. It is suggested that this approach, has gradually reduced conflict through building knowledge, gaining trust and ultimately achieving acceptance. A widely applicable management model and recommendations for best practice are presented as derived from the views of the advisory group itself. This model has the potential to develop a more dynamic, holistic and sustainable approach to coastal governance both in the UK and at other locations further afield.

1. Introduction

The severity of coastal flooding and erosion in many countries has led to growing concerns about societal vulnerability, particularly in the context of floodplain development, insurance practices and climate change [20]. It is now widely recognized that the uncertainty of future climate change must be incorporated within flood and coastal erosion risk management (FCERM) approaches to develop sustainable, long-term strategies [24,28]. Consequently, coastal management in England has undergone a major paradigm shift as it transitions from 'keeping flood water out' to one which 'makes space for water' [23]. It is now widely recognized that the uncertainty within coastal systems, including that of climate change, needs to be accounted for within long-term strategies to ensure not only a continuous level of protection, but also economic sustainability [24,28,29,41,43]. As a result, there has been an alignment towards more integrative risk management paradigms over the past two decades, and it has been suggested that coastal zone management plans should be updated more regularly to provide adaptive approaches better suited to a changing dynamic environment, considering alternative solutions and reducing future risks [13,33,35,50].

The development of the broader philosophy of Integrated Coastal Zone Management (ICZM) and the approach of FCERM alongside the development of the policy framework advocated through Shoreline Management Plans (SMPs), has encouraged more holistic, adaptive and integrated approaches, where feedback and revision of the process is iterative (Fig. 1) [36]. Although both integration and sustainable development are core concepts of ICZM, it is integration which is seen as imperative for the success of ICZM ([18]; Hastings & Potts, 2013). One of the key mechanisms of delivery for sustainable ICZM has been the refinement of the concept and practice of adaptive management which has received increasing attention in recent years [13]. Adaption is the

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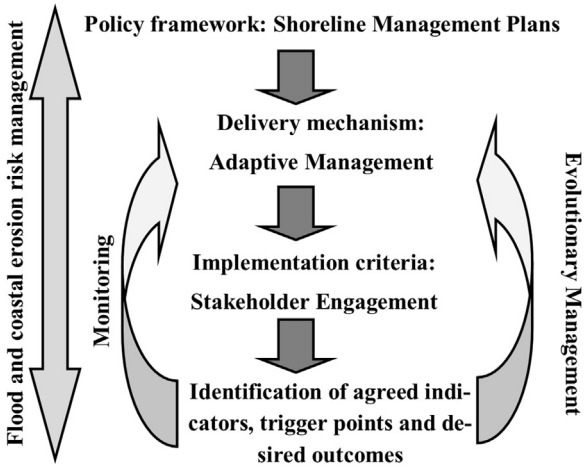

Fig. 1. Schematic diagram showing the relationship between the various levels of coastal management.

"process of becoming adjusted to new conditions, in a way that makes individuals, communities or systems better suited to their environment" ([22], p. 4). Central to adaptive management is the effective engagement of stakeholders in engendering a participatory decision-making process. Wider public participation can be seen as a fundamental component of successful ICZM ([15,18]; Hastings & Potts, 2013; [52]). The concept of public participation often appears a simple solution (Morgan, 1998), but the success of integrating wider opinion into coastal policy and management is difficult to assess [55]. Over the last twenty to thirty years, there has been an increasing emphasis placed on the concept of building local coastal partnerships [30]. These relationships are based upon shared responsibility and trust, and are widely regarded as beneficial in linking local authorities to non-departmental bodies to effectively manage the coast [32,44,57]. Many authors have advocated the need for locally accepted FCERM interventions and more scientific research on the role of participation in FCERM, particularly in adaptive approaches [12,13,37]. As Thaler and Levin-Keitel [58] acknowledged, there has been an increasing number of papers in which stakeholder engagement was found to be integral to FCERM, and several studies have analysed integrated and participatory-based management approaches [33,35,37,50]. However, although a number of studies have been undertaken at regional, national and global scales [33,35,37,4,50], there is a paucity of studies which focus on integrative, participatory approaches within FCERM on a local scale. Moreover, as suggested by Challies et al. [13], many authors have examined adaptive and integrative management strategies which advocate stakeholder engagement to varying degrees (e.g. [61,49,3]), but there is a need for a greater degree of critical analysis in how and under what conditions participatory approaches either work or do not work in FCERM.

One phenomenon to emerge from more integrated management approaches is the emergence of coastal action groups [30]. These groups can take on many forms from a single issue residents based protest group, to a more formal advisory stakeholders/experts working group. This research is concerned with the latter, which aims to initiate compromise and provide the basis for establishing more "unified and locally accommodative partnerships" ([44], p. 507). An advisory group can arguably be a way of moving forward to create consensus and deliver sustainable coasts and management. The emergence of coastal groups can be seen as the development of participatory decision making which is assumed to lead to better decision-making, implementation, compliance and more beneficial social outcomes compared with top down administrative decision making. Nevertheless, Challies et al. [13] suggest that despite the potential benefits of participatory approaches for sustainable FCERM, it is not clear whether this occurs or not. In addition, it is crucial to understand what the opportunities and challenges of participatory and collaborative approaches in FCERM are. This research thus aims to answer these questions by evaluating a localised example of stakeholder engagement. In particular, this research acknowledges that although many aspects of best practice are accepted within coastal management, there are very few case studies, if any, which demonstrate the criteria for success of a local advisory group based on the perceptions of the group itself. As such this research presents a framework for success which can be replicated in many geographical locations and for a range of stakeholder groups.

2. Study site and the formation of an advisory group

For FCERM to be sustainable, it needs to take account of long-term strategies in relation to climate and associated coastal change [29,41,43]. However, as the drivers of coastal erosion and flooding incorporate a range of interests, balance between these competing interests is critical for achieving success [13,34]. One way to achieve this balance is through the formation of coastal advisory groups comprising a range of different stakeholders.

This research critically examines the actions of the East Head Coastal Issues Advisory Group (EHCIAG) which was established in 2007 (Table 1) ([16]; ECIHAG, 2017). The advisory group was formed to incorporate the views of a range of local stakeholders who were charged with identifying the most effective mechanism for delivering integrated management at the site. The advisory group was comprised of a range of members including local authorities, private groups and management organisations as well as statutory bodies [25–27].

East Head is located within The Solent, the body of water separating the Isle of Wight from mainland England, and forms an important sand and shingle spit on the east side of the entrance to Chichester Harbour, West Sussex (Figs. 2 and 3) [16]. The site exemplifies a nationally rare, fragile and dynamic sand-dune habitat valuable to the wider Chichester Harbour Area of Outstanding Natural Beauty (AONB). East Head is also a designated Site of Special Scientific Interest (SSSI) and a Ramsar Site for its importance as a habitat for coastal birds [63]. The spit and dunes have many important values and are of significant interest to environmentalists, recreationalists and tourists. Additionally, the spit plays an important role in the harbour system, providing protection to a significant number of boats that use the lower part of Chichester Harbour and its narrow entrance into the Solent [17]. Although formed naturally by the process of longshore drift, its shape and direction has been affected by sea defences, which have interrupted natural coastal processes [17]. Of particular significance is 'The Hinge', which has been continuously changing direction and has caused great concern between organisations and the general public interested in the future of East Head [17] (Fig. 3).

Table 1
Members of the EHCIAG and the main roles of each organisation [25].

Organisation	Abbreviation	Main role/expertise
Cakeham Manor Estate	CME	Neighbouring stakeholder
Chichester District Council	CDC	Local authority
Chichester Harbour Conservancy	CHC	Harbour authority
Environment Agency	EA	Statutory body - Technical and strategic overview input
F G Woodger Trust	FGWT	Funder
National Trust	NT	Own and manage East Head/Area Rangers
Natural England	NE	Statutory body for environmental legislation
West Wittering Estate	WWE	Land owner
West Wittering Parish Council	WWPC	Representative of the local community