



Governing coastal risks as a social process—Facilitating integrative risk management by enhanced multi-stakeholder collaboration

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ABSTRACT

Scientific literature calls for a shift from exclusively technical towards enhanced social processes in risk management to cope with the challenges of increased complex governance regimes wherein different interests of contrasting institutions need to be considered, balanced and negotiated. However, practical implementation of this integrative perspective is still a major challenge – underlined amongst others by the recently published Sendai Framework for Disaster Risk Reduction 2015–2030.

By proposing an Integrated Risk Management Approach (IRMA) we contribute to simplified conditions in the transfer from scientific debates into practical implementation. Looking in particular on coastal regions, IRMA focus the user's view on the essential challenges in terms of enhanced multi-sectoral structures and improved social and flexible processes, as much as it gives advice on its methodical realization. Using our practical experiences in the trilateral Wadden Sea Region, we disclose IRMA's contribution on enhanced consideration of historical framing, risk perceptions, risk awareness and enhanced multi-stakeholder participation. Multi-stakeholder participation, institutionalised in multi-stakeholder partnerships, makes an essential contribution towards enhanced collaborative processes between scientists, policy-makers and affected communities.

1. Introduction

How to successfully manage risks arising from natural hazards and socio-economic and technological developments is a subject of multiple and intense debates. In coastal regions, effective risk management is a particular challenge on account of the close interaction of environmental, social and economic factors, strong pressures of use and increasing conflicts between uses. In such situations scientists, policy-makers and the affected communities all face the challenge of developing solutions for effectively managing environmental, social and economic issues in response to societal demands. Often, the above challenges are further compounded by risks arising from climate change, changing economic developments and requirements and demographic change (Ballinger, 2015; Nicholls et al., 2012; Wong et al., 2014). The resulting impacts often affect different spheres of (economic) life; moreover they influence each other leading to cascading effects – a phenomenon known as multi-risk situations. Against a multi-layered governance environment in coastal areas, comprising different interests, institutions, legislation and policy, these complex feedback mechanisms provide major challenges in their own right (Ballinger, 2015; Moser et al., 2012).

Traditional, mostly technical measures of coastal risk management often fail to fully address these challenges. There is a need for enhanced and integrated coastal risk management which brings together all relevant sectors, but also the different rationalities, concerns and interests of the various institutions and the public at large. A balance needs to be struck between private interests and the common good as well as national and local interests (Ballinger, 2015; Stallworthy, 2006). Integrated risk management also needs to include knowledge from different sources in order to understand, evaluate and decide on coastal risk management measures and strategies. Conceptually, integrated coastal risk management is no longer just a technical, but above all a social process. Science is already discussing this in various risk management communities, and different concepts and frameworks have become available as a basis. The research gap, therefore, does not present itself with respect to scientific concepts and frameworks, but with respect to their transfer to practice. Integration and linking stakeholder processes at different scales (local, regional, national) still represents a major challenge, as well as coping with the limited knowledge and understanding of these types of processes (McFadden, 2007). The recently published Sendai framework underlines the topicality of this challenge, calling for the development of broader and

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more people-centred approaches in risk management and highlighting multi-stakeholder participation as playing an important role since the commitment, goodwill, knowledge, experience and resources of stakeholders will be required to successfully deal with and reduce risks (United Nations ISDR, 2015).

Against the background of coastal risk management, this paper aims to contribute to the debate by highlighting how an integrative risk management perspective can be transferred from science to practice. Based on the existing literature, we firstly highlight the essential requirements of an integrated risk management perspective as a basis for its practical implementation (Sections 2.1–2.3). We bring together these requirements in the form of an Integrative Risk Management Approach (Section 3), based on which we discuss its translation from science into practice. We present a stepwise methodological approach for implementing the framework and underpin this discussion with experiences gained in a case study in the trilateral Wadden Sea Region (Sections 3.1 & 3.2). Building on this promising case study we then present conclusions on how the Integrated Risk Management Approach and methodological framework presented can improve risk management (Section 4).

2. Requirements for an integrative coastal risk management process

An integrative risk perspective endeavours to anchor coastal risk management within society. This endeavour is grounded in a sociological understanding of risk which regards risks as social constructs, or more specifically, mentally constructed undesired events (Luhmann, 1993; Renn, 2008). Against this background societal risk construction and negotiation are crucial elements of integrative risk management, requiring participative, transparent and flexible processes for the implementation of such discursive practices (Renn, 2008, p. 2417). Including all members of society in a discussion and negotiation process is a difficult challenge, which is why several frameworks overcome this by concentrating on stakeholder rather than public participation (Folke, 2006; IRGC, 2005; Newig and Fritsch, 2009). From our point of view stakeholders are seen as – and act as – representatives of different interest groups (institutionalised public, organised interest groups) or institutions that are directly affected, have an interest in the decision, or with legal responsibility and authority relative to a decision (Mitchel, 2002 p. 189). For integrative risk management processes, the concentration on multi-stakeholder processes is also a practicable point of departure. In this context, the term “multi-stakeholder” emphasises the multiple sectors and institutions that come together in an integrated risk management approach.

However, the successful organisation and implementation of integrative risk management in the form of multi-stakeholder processes cannot be reduced to simply bringing together stakeholders around a table. Fundamental changes are required in management structures and processes to internalise a shift towards more social processes in coastal risk management. Existing concepts in the literature already address these changes in theory. In the following we give an overview of these essential requirements, and bring them together in an integrated risk management approach (IRMA) which then provides a solid basis for considering how its practical implementation should be organised.

2.1. Multi-sector and multi-scale structures in risk management

The increase of highly interlinked risks and cascading effects affecting different sectors and fields of actions are a challenge to current coastal risk management structures which are characterised by a high degree of differentiation of functions and services amongst governmental departments and agencies (Ballinger, 1999). Currently sectors and associated administrations work in relative isolation from each other (Ballinger et al., 2002). Single authorities dealing with single

problems, however, is an approach that no longer matches multi-risk and multi-scale situations, requiring adaptation of management, governance and decision-making structures. The governance concept can offer a theoretical framework here as it discusses precisely these types of adaptation to societal processes of change and changing political frameworks within management and decision-making structures (Grande, 2012). Governance is understood as the institutionalised modes of social coordination of action, leading to the agreement and implementation of collectively binding regulations (policies) (Börzel, 2006).

The concept of risk governance translates the general principles of governance into the context of risk management (Renn, 2008). It emphasises the need for, and benefits of, horizontal expansion of management structures by means of a different distribution of competencies, supporting stronger interaction between state and private bodies (Grande, 2012; Renn et al., 2011; Schuppert, 2008). These include traditional governmental bodies and agencies as well as new institutions, NGOs and actors from civil society (Renn et al., 2011).

To translate such expansion into practice, attention must be paid to the mutual interdependencies that exist between elements of the societal system (horizontal), various territorial spheres of action (vertical) and different policy fields. The importance of including multiple scales, i.e. the various vertical spheres of action, is underscored by complexity theory, which emphasises that in non-linear, dynamic and complex coastal risk management situations, interaction of single agents at the micro-level leads to emergence within society at the macro-level (Ratter, 2013). Horizontal (multi-sector) and vertical (multi-scale) expansion of coastal risk management structures increases the need for cooperation and coordination between very different actors (Grande, 2012). What matters here is the diversity of actors, their roles, their logic of action, the manifold relationships between them and the dynamic networks emerging from these relationships (Renn et al., 2011). This increased cooperation between the state, the private sector, citizens and non-governmental organisations stimulates greater focus on negotiation processes between society and government in order to mediate between values, norms and regulative structures and to facilitate the effective implementation of socially acceptable allocation and regulation (Hill, 2013; Jordan, 2008; Renn, 2008). This made obvious that enhanced participation and communication between the various stakeholders is key for the practical implementation of this risk governance rationale (Renn, 2008).

Existing frameworks such as the Integrative Risk Governance Framework (IRGC, 2005) already address stakeholder participation as a central element, but do not include it in all elements of the approach, for example in risk analysis. The importance of involving stakeholders and interested parties to regional or national decision-making processes is also reflected in some political commitments, e.g. the proposed Directive on Integrative Coastal Zone Management (ICZM). However, although ICZM has been implemented on a voluntary basis in some European countries, there are still large gaps in implementation as responsibilities are not shared between sectors and horizontal cooperation is not yet up and running. Considering these developments, an integrative coastal risk management approach should enhance risk governance structures to foster communication and negotiation and should encourage improved steering and decision-making processes through an expansion of horizontal (multi-sector) and vertical (multi-scale) management structures.

2.2. Enhanced social processes in risk management

Including multiple actors in the risk management process means the coming together of different rationalities, interests and concerns. An integrated risk perspective requires that these rationalities are laid open in order to integrate them in the risk management approach. A pioneering study by White (1974) first showed the importance of human perception in risk management. Risk perception research emphasises

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