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Doing more with the same: A reality-check on the ability of local government to implement Integrated Coastal Management for climate change adaptation

S. Rosendo[a,*], L. Celliers[b], M. Mechisso[c]

[a] Interdisciplinary Centre of Social Sciences (CICS.NOVA), Faculdade de Ciências Sociais e Humanas (FCSH), Universidade Nova de Lisboa (UNL), Av. de Berna, 26 C, 1069-061 Lisbon, Portugal
[b] CSIR – Natural Resources and the Environment, PO Box 17001, Congella 4013, South Africa
[c] AQUA - Agência Nacional de Controlo de Qualidade Ambiental, P.O. Box 66, Praia do Xai-Xai, Gaza, Mozambique

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ABSTRACT

Many countries are implementing Integrated Coastal Management (ICM, also known as Integrated Coastal Zone Management or ICZM) as a means to promote the sustainable use, development and protection of coastal environments. It has also been shown that there is a policy and institutional relationship between ICM and climate change adaptation. This paper examines the relationship between ICM and climate change preparedness of local government with reference to empirical studies conducted in two developing nations, Mozambique and South Africa. Using a mixed-methods approach (content analysis of local government planning documents and semi-structured interviews with key informants), results demonstrate the level of integration of coastal management, disaster management and climate change adaptation in local development planning; and assess the state of implementation of ICM and climate change adaptation by selected local governments in the two countries. The paper makes recommendations on how to improve ICM development and implementation for coastal adaptation. The results suggest the need for closer integration between coastal management, disaster management and climate adaptation frameworks; highlight the need for enhanced support for local governments from provincial and national government; and greater clarity with regards to the coastal management mandate of local government (especially in Mozambique).

1. Introduction

Integrated Coastal Management (ICM) is widely seen as a means to promote the sustainable use, development and protection of coastal environments [1–3]. ICM is a form of adaptive management based on principles such as strategic planning, the use of participatory and deliberative processes, institutional integration and coordination, the application of science to decision-making, and human and technical capacity development. The emerging threat of climate change will aggravate existing pressures on coastal areas [4], calling for approaches capable of dealing with highly dynamic and often interacting issues [5,6]. Within this context, ICM gained wide recognition and acceptance in international policy circles as an appropriate approach to address the new challenges of adapting to climate change in the context of multiple pressures impacting coastal zones [7,8].

The links between ICM and adapting to coastal climate change have been increasingly explored in the literature. Tobey et al. [9] show that ICM processes and best practices apply equally to managing climate change impacts, as to other coastal issues; while Falaleeva and colleagues [10] suggest that by addressing the fragmentation of governance structures and stakeholders responsibilities, ICM creates enabling conditions for adaptation, which relies on integrated planning across different scales and sectors. These authors go on to identify other elements typically promoted as part of ICM which can facilitate climate change adaptation, including integration of science in policy and stakeholder participation in decision-making. More recently, O'Mahony et al. [11] supported much of the above while also emphasizing the role of ICM in facilitating capacity building, knowledge exchange and learning to support the local implementation of national climate change policy.

One of the distinctive advantages of ICM is its ability to bridge different administrative scales (national, regional, local) and coordinate a wide range of stakeholders [12]. Adaptation, on the other hand, is an intensively local process [13]. The local implementation of ICM is therefore essential for coastal climate adaptation. Although the roles,

* Corresponding author.
E-mail address: sergiorosendo@yahoo.co.uk (S. Rosendo).

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responsibilities and powers of local government vary between countries, in general, local authorities manage, regulate and facilitate a wide rage of coastal activities. These include land use planning, water supply, drainage, coastal protection, building and/or maintaining infrastructure, amenity provision and environmental health. All of these are relevant to both ICM and coastal adaptation. But while local government in climate change adaptation has received much attention in the literature [14–21], its role in the implementation of coastal management and ICM and how it relates to adaptation has not been sufficiently explored.

While conceptually, ICM principles may apply to addressing climate change impacts on coastal zones [7,9], this needs to be examined in practice, in relation to specific cases of local government involvement in coastal management. This is particularly pertinent in developing countries where studies show that ICM implementation has faced a number of challenges, particularly related to financial and human capacity constraints, dependency on donor support, unclear roles and power struggles [22–28]. This paper focuses on two contrasting cases of ICM in developing countries, namely Mozambique and South Africa. Both countries have been implementing ICM [29,30] but with significant differences, most fundamentally in the legal framework for coastal management [13].

South Africa started developing a specific policy for coastal zones during the early 1990s, culminating in the Environmental Management: Integrated Coastal Management Act of 2008 [31] (hereafter referred to as the ICM Act). This policy process and the resulting legislation and institutions are well described in the literature [22,30,32,33]. The Act compels coordination between all legal instruments relevant to coastal management. It also defines the institutional arrangements and management instruments for ICM [34]. These include Coastal Committees at the national, provincial and municipal levels, and national, provincial and municipal Coastal Management Programmes (CMPs). Importantly, the Act assigns specific roles and responsibilities to each sphere of government and defines time frames for preparation of CMPs by each of them [31].

Efforts to implement ICM in Mozambique also started in the 1990s. But unlike South Africa, it has not developed policies or legislation specific to ICM. The coast is managed with reference to separate legislation on environment, land, fisheries, water, forests and mineral resources. Mozambique adopted a largely project-based approach to ICM implementation often linked to donor funding [13]. It created a Department for Coastal Management within the then Ministry for the Coordination of Environmental Affairs (MICOA) and a Centre for the Sustainable Development of Coastal Zones (CDS-ZC), also under MICOA, to drive and support ICM. It also established a Technical Inter-Institutional Committee for ICM under the National Council for Sustainable Development to coordinate sector policies impacting on coastal zones. Within this context, the role of local government in coastal management is not clearly defined in the legislation, although it can be loosely extracted from the Local Government Act [35]. Despite featuring in government plans [36], a policy specifically for the coastal zone has thus far not been developed. Mozambique has recently pledged to strengthen ICM as party to the Nairobi Convention [37].

This paper examines the state of coastal management and climate change adaptation implementation by local governments in South Africa and Mozambique, and assesses the extent to which ICM is used to promote adaptation. The paper firstly provides a broad picture of the level of integration of coastal management, disaster management and climate change adaptation in development planning resorting to a content analysis of key local government planning documents. It then assesses the state of implementation of ICM and climate change adaptation by selected local governments in the two countries based on semi-structured interviews with local governments, relevant national and provincial level government institutions, NGOs, community organisations and the private sector. It concludes by making recommendations on how to improve ICM implementation for coastal adaptation.

2. Methodology

Research for this paper was conducted between 2010 and 2011. It included a content analysis of local government development planning documents in place at the time of research and semi-structured interviews with key informants from local governments and other institutions.

2.1. Content analysis

In South Africa, the content analysis focused on Integrated Development Plans (IDPs), which are 5-year planning instruments that all local governments in South Africa must prepare under the Municipal Systems Act, 2000 [38]. In Mozambique, the analysis focused on a range of plans with different time frames, including District Strategic Development Plans (4 years), Municipal Strategic Plans (10 years) and yearly activity plans.

The content analysis used a modified version of the method described by Thorpe et al. [39] (see also [40]). It consisted of selecting 10 keywords and terms related to coastal and climate issues (Suppl. mat 1. link to keywords/terms list) and examining their occurrence within the different planning documents. A total of 8 plans in South Africa and 8 in Mozambique were analysed (Suppl. mat. 2. link to document list). A count of how frequently a keyword/term (i.e. erosion, drought, etc.) was mentioned in a given document provided a simple indication of the level of interest or concern it received. The text (sentence or paragraph) where these keywords/terms occurred was copied to a spreadsheet organised by local government and document, indicating the keyword, and providing a short comment on the context surrounding its use, namely whether (1) the issue was simply mentioned; (2) it specified an action to be taken in relation to it; or (3) allocated resources to implement the action. The organisation of the data in Excel facilitated inductive analysis whereby the data were examined for patterns, themes and relationships [41].

2.2. Semi-structured interviews

Semi-structured interviews were used to explore the state of coastal management implementation and climate change responses by local governments. The interviews focused mostly on local governments, but also included relevant national and provincial level government institutions, NGOs, community organisations and private sector. A total of 22 key informants were interviewed in South Africa and a similar number in Mozambique, between April and August 2011. Interviews with local governments targeted managers or heads of department in units relevant to coastal management and climate change adaptation. Further details of the number of interviewees per type of institution are shown in the supplementary material (Suppl. mat 3. link to interviewee details).

The local governments included in the study were not selected to be geographically representative of the entire Mozambique and South Africa coastlines, both of which are extensive and encompass a large number of local government administrative units. Rather, they were selected to reflect different levels of urbanisation and exposure to climate risks. In both countries, the research focused in one region to facilitate the process of data collection: Kwazulu-Natal Province (KZN) in South Africa where there was an appropriate representation of different levels of urbanisation, from the highly urbanised city of Durban within the eThekwini Metro to the more rural uMhlathuze Municipality, facing various climate change challenges. In South Africa, metropolitan areas, and local and district municipalities are considered as local government. In southern Mozambique, the study included the capital Maputo, and three less urbanised local governments known for their exposure to floods (Xai-Xai District) and cyclones (Zavala District and Inhambane Municipality). Fig. 1 shows the location of the case study local governments, while the supplementary material presents