

The silos of natural resource governance: implications of sector-led coastal management at the village level in Kenya and Zanzibar-Tanzania

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Abstract

Taking a coordinated, holistic approach to the governance of coastal ecosystems is widely advocated in recognition of the need to manage ecosystems as a whole. Despite commitment to approaches such as integrated coastal zone management and ecosystem-based management of fisheries, governance remains fragmented, with sectors such as environment, fisheries and forestry maintaining separate systems of governance from the national to village level. These systems include the formation of separate community-based structures, reporting directly to the respective sectoral ministry. This raises questions about how this collaborative governance approach aligns with taking a more integrated, holistic approach to management. The paper draws on findings from research in Kenya and Zanzibar-Tanzania in coastal villages where forest and fisheries management groups have been formed. The research found that the groups operate in compartmentalised 'silos', in contrast to the interrelated ecosystems on which they depend, with little coordination of plans and priorities. In addition, these groups are not consistent in their relationship to local government, answering directly to the sectoral ministry rather than democratic local government, raising issues for accountability and sustainability. These dual challenges of a sectoral-focus and long-term sustainability must be addressed for management of ecosystems to be integrated and effective.

Keywords: integrated coastal zone management; collaborative natural resource governance; community-based natural resource management; Kenya; Zanzibar; natural resource management; ecosystem-based management

INTRODUCTION

Coastal ecosystems are diverse in composition, with habitats including coral reefs, mangrove forests and seagrass meadows

(Burke et al. 2001). The complex composition of coastal ecosystems makes coastal areas attractive to a diverse range of species, including humans, with the result that coastal areas are under severe threat, particularly from human activity (Agardy and Alder 2005). Integrated approaches to the management of coastal ecosystems have long been advocated, responding to the diversity of habitats within coastal areas and of threats to their integrity. Such integrated approaches have particularly been articulated as Integrated Coastal Zone Management (ICZM) and Ecosystem-Based Management (EBM) (Pittman and Armitage 2016). Despite widespread commitment to such approaches since the 1970s (Taljaard et al. 2012), effective and sustainable implementation

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has experienced a number of challenges. One of these challenges is sector-led management, with Taljaard et al. (2012: 40) observing that ‘the governance systems within which ICM is applied have remained sector-based’ and Sale et al. (2014: 12) suggesting that this sector-led approach has resulted in ‘piecemeal’ management. Whilst coastal areas have a strong case for seeking a more integrated, joined-up approach between sectors, it seems that this has been challenging to achieve (Mangora 2011).

This sector-led approach to managing habitats and activities such as land-use planning and fisheries within coastal areas is found from the national to the local level, with ministries or government departments responsible for the environment, forests and fisheries forming part of the governance system of coastal areas. In many countries, this sector-led approach is reflected in the formation of separate community-based structures, created to work with a particular ministry or department through collaborative governance. The formation of such groups has resulted in there being multiple structures involved in natural resource governance in any one location, often working in parallel to local government (Larson and Soto 2008). There is, however, very little analysis and reflection available on how structures formed at the local level operate within the same geographical, institutional and social space and what the sector-led approach means for delivering on more coordinated or integrated management. The purpose of this paper is to answer the following questions that address this gap: how do sector-based groups at the village level formed for natural resource management relate to each other and what can be learnt from their experience for integrated management?

The questions are addressed through analysis of data on the types, remits and activities of local structures in two coastal villages, in Kenya and Zanzibar-Tanzania. The focus of the investigation is on the fisheries and forest sectors, as these sectors dominate natural resource governance in the coastal areas, and on how they interrelate at the village level. It is concluded that the creation of sector-focused community-based structures, operating on the fringes of local government, further embeds the challenges of a sectoral approach to the governance of coastal ecosystems. In addition to these challenges, the long-term sustainability of these groups, particularly in terms of maintaining their existence after donor project funding, is questionable. Policy and action are needed that address these dual challenges of a sectoral-focus and the potential for long-term sustainability if an effective integrated approach to management is to be achieved.

SECTOR-LED COLLABORATIVE MANAGEMENT IN COASTAL AREAS

Implementation of ICZM and EBM has been described as ‘slow and problematic’ (Alexander and Haward 2019: 33), with the sectoral focus dominant in habitat management within coastal areas identified as a major barrier to sustainability and effectiveness (Alexander and Haward 2019; Powell et al. 2009). The existence of separate sectors leads to fragmented decision-making, inadequate

communication and confusion over areas of jurisdiction, with participation and exclusion of stakeholders also presenting a challenge (Alexander and Haward 2019). These challenges occur at all levels of decision-making, with fragmentation of decision-making occurring within levels (horizontal fragmentation) and between levels (vertical fragmentation) (Powell et al. 2009).

To overcome fragmentation and inadequate communication, some form or degree of cooperation and coordination is needed. Co-operation has been described as ‘the process by which agencies operate together and are coordinated to one end’ (Stojanovic 2004: 285) and coordination in a policy context as the avoidance, reduction, counterbalance or outweighing of ‘adverse consequences’ of one decision on other decisions (Lindblom 1965). Peters (2013: 570) identifies several barriers to policy coordination, including how policy is understood by different professions within the public sector, a desire to maintain an area of work (‘turf battles’) and ‘information hoarding’. In responding to these barriers, Peters (2013) suggests that policy coordination could be improved by addressing how problems are framed, utilising networks of actors involved in the policy areas to facilitate coordination and identifying individuals who could connect organisations, referred to as ‘boundary spanners’.

The sectoral focus of natural resource governance dominant within coastal areas is found from the national to the local, often village, level. At the local level, it is particularly illustrated by the creation of sector-specific community-based structures resulting from the adoption of collaborative natural resource management. This approach has become the norm in low-income countries since the 1980s, following a wider shift in governance through the formation of decentralised government and belief that the inclusion of resource users in management would improve compliance with regulations (Larson and Soto 2008; Berkes 2009). Collaborative governance has been adopted in forestry, fisheries, wildlife, water, coastal and marine resources (Ribot 2003; Berkes 2009; Ribot et al. 2010; Evans et al. 2011b). Such approaches involve the formation of local groups or committees (Larson and Soto 2008), with the initiative led, often with support of donor agencies, by the government department or ministry concerned. In this way, the forest department or ministry leads in the formation of forest management committees, departments of fisheries lead in the formation of fisheries management committees and the environment department or wildlife management department may lead in the formation of coastal conservation committees. Alternatively, committees or groups may be formed outside the government system through donor-funded projects, often with Non-Governmental Organisations (NGOs) facilitating the formation process (Ece et al. 2017).

This sectoral emphasis on the formation of user groups in community-based or collaborative management has led, according to Larson and Soto (2008: 225), to a ‘proliferation of user groups and stakeholder committees’ inspired by project funding rather than community enthusiasm for conservation. The proliferation of community structures reflects the wider

proliferation of groups and committees at the local level, such as those formed to encourage savings and credit, health promotion, education and management of water supplies, often initiated by line ministries supported by donor projects (Manor 2004). The formation of natural resource management groups outside local government has raised concerns about the implications for accountability and democracy. Externally funded user groups are often elite-captured and may assume roles and responsibilities that would be expected to lie with elected local government. They are often unaccountable to the community, at least while project funding is available, thereby creating confusion through lack of transparency and accountability, and having overlapping functions and responsibilities with other structures. However, Larson and Soto (2008) also report on evidence that user groups can be more effective at downward accountability than local government, thereby promoting democracy at the local level.

Within and beyond natural resource management, Manor (2004) provides one of very few analyses on the existence and implications of there being a plethora of user committees. He observes that such committees are usually formed through the support and initiative of donor-funded projects; they are mostly single-purpose; members are selected through less-reliably democratic means than local government structures; and, they often have a limited lifespan, which may reduce the potential for engagement of many stakeholders, particularly those who are marginalised. Whilst Manor (2004) notes benefits from the formation of user committees, such as providing community members with a mechanism through which to engage with policy- and decision-making, he highlights the separation of user committees from democratically elected local councils as being a significant challenge. This separation results from line ministries preferring the user committees to be outside of local council control, with Manor arguing that such an arrangement 'creates a discontinuity between general-purpose local councils and single-purpose user committees' (2004: 201). The top-down control of line ministries is maintained by this separation, creating confusion over remits and roles. This view is echoed in literature on community-based forest management, with Ece et al. (2017) observing that elected representatives to local government are side-lined in forest management, undermining their authority and bringing into question the democratic credentials of participatory forest management.

From this review of literature, the following three areas were identified as critical to answering the research questions: the policy context of coastal ecosystems and how integration is envisaged; the remit of each type of village-level natural resource management group and how these groups interact with different levels and parts of government; and, how village-level natural resource groups interact with each other.

METHODS

The choice of Kenya and Zanzibar-Tanzania as study sites was motivated by their substantial experience in collaborative natural resource management arrangements, though with

different legislative backgrounds. Both countries have adopted collaborative approaches in marine resource management (Cinner et al. 2012) and are neighbouring countries with similar fisheries and coastal forests. Kenya has a multitude of systems within the governance of coastal areas (Evans et al. 2011a) though has only relatively recently introduced community involvement in forest management through legislation in 2005. The approach gained momentum with wider decentralisation of government functions after the adoption of a new Constitution in 2010 (Chomba et al. 2015). Zanzibar has a longer tradition of community involvement in forest management and became one of the pilot sites for REDD+ initiatives in Tanzania (Sills et al. 2014; Sutta and Silayo 2014). The fisheries sector has also seen an evolution of community-based fisheries management through the establishment of Shehia Fisheries Committees (SFC) sanctioned by the Department of Fisheries Development through a number of donor funded capacity development projects (Levine 2007, 2016). The emergence and spread of these community-based structures for different natural resource areas and types, such as forests, fisheries and other coastal ecosystems, means that these locations are affected by multiple government policies and legislation.

The villages of Vanga in Kenya and Uzi in Zanzibar are locations where mangrove forests remain important features of the seascape and are integral to livelihoods, in terms of support to fisheries as well as provision of timber and fuelwood. The villages are representative of many coastal villages in these countries, with the communities highly dependent on fisheries and mangrove forests and accordingly they attract efforts to improve natural resource management by both government and NGOs. The cases of these villages and of Kenya and Zanzibar are representative of other low-income countries where sector-led donor funded projects have led to the formation of multiple user groups, as evidenced in the review of literature.

Data was collected between 2014 and 2016 from the two communities as part of a larger research project on the governance arrangements of coastal ecosystems. Collection of data was undertaken through key informant interviews and focus group discussions with purposively selected community members based on their knowledge and involvement in local resource governance and influence in community decision-making structures. Topic checklists were used to guide discussion, with questions seeking to identify and understand structures involved in coastal ecosystem management, interactions between structures and challenges experienced in management. Table 1 sets out the data collection methods and sample sizes and characteristics for Vanga and Uzi.

Vanga is located close to the Kenya-Tanzania border, has a considerable mangrove forest, a population of 13,546 in 2010 and the community is heavily dependent on fisheries with artisanal fishing contributing to more than 80% of the local economy, inclusive of other fisheries related activities such as boat making and fish vending (Ochiewo 2004). The village is not within easy reach of a market for timber or charcoal and so pressure on the mangrove forest is not excessive. Natural resources in Vanga include fisheries, mangroves, terrestrial

Table 1
Data collection methods and samples

Method	Vanga	Uzi
Key informant interviews	20 interviews: the Forest Guard, chief of the area, the government Fisheries Officer, Community Forest Association (CFA) chairperson, 6 local leaders of Vanga, Jimbo and Kiwegu villages, 6 leaders from the CFA user groups, 3 Beach Management Unit (BMU) leaders and 1 influential community member.	Interviews were conducted with the Village Leader (Sheha), two selected Village Elders (one man and one woman), three executive committee members (chair, secretary, treasurer) of the fisheries committee and forest management committee.
Focus group discussions	Separate focus group discussions were conducted with the local administrative leaders in the area, CFA, BMU, men and women from the community.	Four focus group discussions were held with members of the forest committee, fisheries committee and a sample of non-committee members in separate representative groups of women and men.

coastal forests, coral reefs and sea grass beds. Access to the resources is regulated through local governance structures stipulated in the Forest Act (2005) for forest related resources and the Fisheries Management and Development Act (2016) for fisheries and associated marine resources. Uzi is located on Unguja island of Zanzibar, Tanzania, at the end of a causeway, meaning that access is not always possible as the road is impassable at times, and is within the Menai Bay Conservation Area (MBCA). It had a population of 1801 in 2012 and the main livelihood and economic activities are seaweed farming, crop cultivation, livestock keeping and fishing.

Ethical approval for the research was granted through the formal ethical review process of the University of Birmingham, UK, which required details on intended participants, how recruitment of participants would take place and how informed consent would be sought. The data collection tools were also submitted as part of the review process. Consent confirming willingness to engage in the research process and for the data to be analysed and reported on was sought from all respondents once the purpose of the research and how the data will be used was explained. Verbal consent was sought as this was more culturally acceptable than written consent. Transcripts of the interviews and focus group discussions were analysed by coding for themes identified in relation to the issues raised in the literature review. The key themes identified for coding included: roles and responsibilities in resource governance (control of access to resources, resource monitoring and surveillance, wider community involvement and convening of meetings, resource restoration and rehabilitation, resolution of conflicts, rule enforcement and monitoring of illegal activity) and level of acceptance of local governance structures by the community, inter-sectoral engagement and collaboration at local level (complementarity of mandates, level of consultation). Legislation and policy documents were also consulted. These are referred to in the findings section.

FINDINGS

Vanga, Kenya

Policy context

Integrated approaches to the management of coastal ecosystems are seen in the Integrated Coastal Zone Management policy of 2015, and earlier ICZM policies and plans, and reference

to EBM in the 2008 National Oceans and Fisheries Policy. The ICZM policy repeatedly refers to the sectoral approach to policy and practice having a negative effect on the coast, referring to ‘uncoordinated sectoral policies’ and stating that ‘sectoral management approaches have failed to achieve the objectives of coastal planning and sustainable development’ (MEWNR 2015: 1). Responding to this recognition, the first objective of the policy is to ‘promote integrated planning and coordination of coastal developments across the various sectors’ and one of the nine guiding principles is the ‘use of ecosystem-based approach that recognises the relationships and inter-linkages between all components of the wider ecosystem in addressing coastal zone management issues’ (MEWNR 2015: 19). The multiple components of the implementation plan include references to integrating plans with other planning processes (e.g. land use planning), improving communication and coordination and securing the support and involvement of relevant sectors. These references suggest recognition of the need to consider how to adopt an integrated approach in many areas of activity but do not give a strong sense of how that will happen in practice.

The primary goal of the National Oceans and Fisheries Policy is concerned with increasing fish production and utilisation, though the goal also notes that this should be sustainable. The policy includes the adoption of an ‘ecosystems approach’ to management as one of eight principles. There are no detailed guidelines or evidence of what an ecosystems approach to management would look like in practice within fisheries. The 2017 National Mangrove Ecosystem Management Plan also recognises the challenges resulting from a sectoral approach, stating that ‘one of the major challenges facing the management of resources at the coast is the sectoral governance system which does not recognize the interconnectedness of ecosystems in resource management’ (GoK 2017: 21).

The 2015 ICZM policy lists and summarises 21 policies from a range of sectors, from the Constitution to the draft tourism policy. This illustrates the diverse range and number of relevant sectors, policies and legislation for coastal governance. This has been observed in literature, with Samoilys et al. (2011) identifying 48 pieces of legislation from 14 Ministries associated with conservation in coastal areas. Evans et al. (2011a: 2) describe the governance of Kenya’s coastal zone as ‘a patchwork of approaches including customary management, hierarchical governance, and integrated coastal zone

management; management tools including marine protected areas, customary gear restrictions, fisheries regulations, licensing, and environmental impact assessment; and initiatives including infrastructure development, investment in fishing technologies, ecotourism ventures, and others'. Since then, the decentralisation of government through the formation of the County system has added further structures, policies and reporting requirements, with County governments employing officers in areas including fisheries, wildlife, forestry and land-use planning.

Despite the plethora of policies and legislation, there is consistency within policy and legislation in support of ecosystem-based management and community participation in management, as shown in Table 2.

Structures and remit of village-level groups

The policy context set out above suggests a move towards coordination and cooperation, though the National Mangrove Ecosystem Management Plan was not in place at the time of data collection. In Vanga, however, it was found that community-based structures remain sector-focused, with little interaction and coordination between groups.

Participatory approaches to governance have been adopted in many natural resource sectors in Kenya. In forestry, the Forest Act of 2005 allowed for the formation of Community Forest Associations (CFAs) to work with the Government's Kenya Forest Service (KFS) and, in fisheries, the Fisheries (Beach Management Unit) Regulations 2007 requires the formation of community-based Beach Management Units (BMUs) to collaborate with the State Department of Fisheries (SDF) in managing fisheries resources. Several other types of community-based organisations have been formed to

work with government in Marine Conservation Areas, with structures associated with Community Conservation Areas (CCAs) and Locally Managed Marine Areas (LMMAs). These have different legal foundations, though most are founded on either forestry or fisheries legislation (Kawaka et al. 2017).

The main structures concerned with governing natural resources in Vanga are the CFA and BMUs, as shown in Table 3, which sets out the structures, mandate, responsibility, authority and level of interaction. The VAJIKI (named from three villages: Vanga, Jimbo and Kiwegu) CFA was registered in 2009 but was not fully operational, as the co-management agreement had not been finalised. It therefore worked semi-formally with the KFS, represented at the local (village) level by a Forest Guard. The CFA is comprised of four user groups: Mwambiweje Women's Group and Mwagugu Mariculture, which are in Vanga village; Jimbo Environmental Group in Jimbo village; and, Vumilia Nguvu Kazi group in Kiwegu village. Delays in signing of the agreement were due to lack of adequate finances to see the process through; this delay meant that the CFA had little mandate to act in the community as it was not fully recognised as a source of power in local mangrove governance. In addition, there were no local rules established by the community to protect the mangroves. The operational rules in mangrove governance were those from the KFS management plan, which was formerly guided by the Forest Act of 2005 but since late 2016 is guided by the Forest Conservation and Management Act No. 34, which repealed the 2005 Act. The Act provides the legal mandate for CFAs, but in practice the CFA in the Vanga area was not very active and only made progress in its activity with the development of a participatory forest management plan for a pilot mangrove area designated for mangrove carbon credits,

Table 2
Policies and legislation concerning forestry and fisheries in coastal areas of Kenya

Sector	Policy/Act/Plan	Provision for community-based and integrated management
Forest	Forest Act 2005	Allowed for the formation of Community Forest Associations (CFAs) to work with the Government's Kenya Forest Service
	Forest Conservation and Management Act No. 34 2016	Provides for development and sustainable management of forest resources Part 5 confirms mandate to form CFAs, with rights and responsibilities set out
	Forest Policy 2014	Includes taking an 'integrated ecosystem approach to conserving and managing forest resources' as one of the guiding principles Confirms commitment to community forest management
Fisheries	Fisheries (Beach Management Unit) Regulations 2007	Requires the formation of community-based Beach Management Units (BMUs) to collaborate with the State Department of Fisheries (SDF) in managing fisheries resources
	National Oceans and Fisheries Policy 2008	Ecosystem based approach in the management of resources will be adopted Role of BMUs to be promoted and capacity built
	The Fisheries Management and Development Act No. 35 2016	One of the guiding principles in Section 5 is to ensure 'the effective application of an ecosystem approach to fisheries management' Section 37 allows for the formation of BMUs
Coastal	Integrated Coastal Zone Management policy 2015	Aims to promote coordinated and integrated policy and management, and taking an ecosystem-based approach to management.
	National Mangrove Ecosystem Management Plan 2017	Commits to an ecosystem-based approach to the management of mangroves Advocates for community involvement in management through CFAs
Local Government	County Governments Act No. 17 2012	Allows for the formation of local government in the form of County governments Includes protection and development of natural resources

Table 3
Local natural resource governance structures in Vanga

Sector	Mandate	Key Responsibilities	Level of Formal Authority	Level of Interaction with other structures
Local Government	Village Head; County government; sectoral officers within County government and also devolved, reporting directly to national ministries; Forest Guard reports to KFS; Fisheries Officer reports to SDF.	Control access to the resource Enforcement of rules from line ministries/ departments Monitoring and surveillance of resources Conflict Resolution	Formally mandated as employees of line ministries/ departments Locally recognised as key decision makers	Formal and mostly regular interaction with the line ministries - appointment of local officers is done by the line ministries and formal reporting is carried out by officers to the respective line ministries. Irregular and mostly informal interactions with other local structures - no formal platform for interactions exists. Most interactions are opportunistic and donor- driven, for example through capacity building workshops organised by NGOs for stakeholders from different sectors
Forestry	Community Forest Associations (CFA) established under the Forest Act of 2005. Kenya Forest Service (KFS) maintains overall ownership of the resource.	Creation of awareness on conservation of resources Community mobilisation Reports to KFS through the Forest Guard	Legal mandate: initiative taken by local community; challenging due to need for management plan. Recognition in local decision making it still limited but is envisaged to grow once the signing of the formal management plan is finalised.	Semi-formal interaction with local government though not regular - co- management agreement is yet to be finalised to provide a formal basis for interaction. No formal reporting mechanism from the CFA to the Forest Guard and limited involvement of the Forest Guard in CFA meetings. Irregular and informal interactions with other local structures - no formal platform for interaction with other local structures. Interactions are mostly donor-driven such as through capacity building workshops and mangrove replanting activities organised by NGOs.
Fisheries	Beach Management Units established under the Fisheries (Beach Management Unit) Regulations of 2007 and mandated to work with the State Department of Fisheries.	Monitoring and Surveillance of fish landings Community mobilisation Reports to the Fisheries Officer	Legal mandate: under the State Fisheries Department; more autonomy and more established than the CFA in the same village. Locally recognised as a key decision-making entity especially related to access to fisheries. All groups working within the fisheries sector at the beach are formally required to register with a BMU.	Formal interaction with local government and regular interaction particularly with the fisheries officer - formal reporting of fish landings and regular meetings organised. Irregular and informal interactions with other local structures - no formal platform for interaction with other local structures. Interactions are mostly donor-driven such as through capacity building workshops and mangrove replanting activities organised by NGOs.

which was approved by KFS, when assisted by an external agency.

The CFA reports to the Forest Guard in charge of the mangrove area at the local level; however, no formal reporting mechanism such as quarterly or annual reports or formal assessment by the Forest Guard have been developed. The functions of the Forest Guard and that of the CFA seemed to be carried out in isolation with little coordination between the two; for example, the CFA was hardly aware of the activities carried out by the Forest Guard at a particular time and would mostly liaise with the Forest Guard when there were cases of illegal harvesting or conflict resolution. Flow of information from the national and regional to the local governance systems was mostly down the hierarchy, rather than up. Legislation from the national level governed interactions between the regional and local governance levels with limited input from the local level. KFS maintains overall control of management of forests and all management plans developed down the hierarchy must

be approved by KFS. It is envisaged that with the signing of the co-management agreement between the CFA and KFS, the CFA will have a level of autonomy in decision making, monitoring and issuing of sanctions at the local level, such that community groups that would like to carry out activities in the mangrove forest would have to register with the CFA to gain access to the resource.

There are two Beach Management Units (Vanga BMU and Jimbo BMU) in the area working in co-management with the SDF, which has the national mandate for fisheries management. The BMUs enjoy more autonomy compared to the CFA. They are more established and have developed by-laws for local management of the fisheries, which were still under the operational framework regulated under the BMU Regulations of 2007, which was formerly governed under the Fisheries Act Cap 378 of 1989 (revised in 2012) but was later under the Fisheries Management and Development Act of 2016. The BMUs are allowed to exclusively manage the

fish landing sites in the area and are responsible for providing catch data to the SDF. The BMUs, however, lack adequate capacity and financial resources to carry out monitoring and surveillance of illegal fishing activities. There were no Community Conservation Areas in operation but there were initial attempts at developing structures to establish the CCAs through proposals by the NGOs Flora & Fauna International and East African Wildlife Society.

KFS has the overall mandate in managing the forest while the SDF is responsible for all the fisheries resources in the area including those in mangrove areas. Other government parastatals such as Kenya Marine and Fisheries Research Institute (KMFRI) and Kenya Wildlife Services (KWS) have complimentary roles particularly related to protection of the mangrove and associated ecosystems to promote the sustainability of fisheries and wildlife resources in the area. Policy and practice associated with these agencies therefore has pertinence in the coastal area and affect local governance, for example KMFRI was instrumental in providing technical support to the community for development of a mangrove management plan for the area designated for mangrove carbon credits.

Interaction at the local level

While the need and support for ecosystem-based management and community involvement in management of resources is strongly emphasised in policy and legislation documents, the delivery on this in practice is still largely inadequate at national level and much less at the local level. This was evidenced by the lack of joint activities implemented by fisheries and forestry sectors that demonstrate ecosystem-based management approaches for coastal resources management, such as joint monitoring and surveillance of resources in the area and coordinated issuance of permits for access to the resources. One sector was hardly aware of the monitoring schedules of the other sector despite working in the same areas. There was limited sharing of resources such as boats for monitoring and surveillance across the sectors. The poor coordination from the sectors cascaded down to the local level structures that are linked to the various sectors.

Interaction between the CFA and BMUs was not regular or planned for; interaction tends to result from funded activities, particularly mangrove planting, discussion to resolve an issue and representation by the same individuals on the committees, for example the vice chairperson of the VAJIKI CFA was also the Chairperson of the Jimbo BMU. It was consistently reported that groups do not collaborate much, rather each focuses on their own activities. Therefore, despite the somewhat similar representation by the same individuals across the groups, there was a lack of coherence in activities performed by the groups, which could lead to overlapping and duplication of activities. Participation of individuals in multiple groups was driven by the expectation of benefits such as attending training and managing finances of the groups. One example of interaction to resolve an issue involved the CFA and BMU meeting to discuss the activities of the licensed timber cutter. The cutter

was licensed by the KFS but community members believed that he was over- and indiscriminately harvesting mangrove trees. Through the joint resolution of the groups, they were able to expel him from the area.

The separate mandates for each group were clearly seen by respondents at the community level to be associated with separate government departments. Each government department has empowered its own resource user group and believes that their group has the overall power at the local level with regard to relevant natural resources. It was suggested by one respondent that 'fisheries says that BMU is the overall... KWS [Kenya Wildlife Service] they tell you that they are the ones who are overall. When you come to the CFA, the forest department says they are the overall so there is some conflict at some point' (CFA FGD 13 June 2015). The lack of connectivity between the sectors at the national level flows down the hierarchy to the local level resulting in poor coordination of local management activities.

Donors and NGOs play a significant role in spearheading the establishment of local resource governance structures through providing funding for activities such as mobilising the community, building capacity and development of management plans (Cinner et al. 2012). Each group may have different sources of funding from different donors, yet these are supporting similar activities being carried out in the same area by a number of local groups but at different times. Donors often work directly with the local groups with minimal contact with the government institutions that have overall mandate of the resource thus at times resulting in conflict as the institutions feel by-passed.

Perceptions of the wider community on the local governance of natural resources was generally positive due to the fact that there was an improvement in enforcement of rules and regulation, control of access to resources and monitoring and surveillance in the past five years. However, the lack of adequate consultation with the community on their needs and priorities and poor incorporation of the same in planning was highlighted as a major challenge affecting community participation and cooperation. This led to aspects of distrust and suspicion among some community members who felt excluded in the establishment of the co-management structures yet were expected to comply with the structures once established.

Uzi, Zanzibar-Tanzania

Policy context

The development and implementation of an integrated approach to coastal zone management has long been a commitment in Zanzibar. Between 2005 and 2013, the World Bank-funded Marine and Coastal Environmental Management Project (MACEMP) was implemented, which aimed to improve the management of marine and coastal resources through improving institutional arrangements and revenue generation and the formation of networks of Marine Protected Areas (MPAs). An objective of MACEMP was to establish and

support a comprehensive system of Marine Management Areas (MMAs) in the territorial sea built on an Integrated Coastal Management strategy (Marine Conservation Unit 2012). A major form of the MMAs is the Marine Conservation Area (MCA), which refers to large areas that are under management for sustainable utilisation (Department of Fisheries and Marine Resources 2009). While there is no defined model for an MCA, they typically include restricted areas where fish stocks can recover and multiple use areas where human activities are allowed, as long as they are compatible with sustainable exploitation.

The 2014 draft fisheries policy refers to ecosystems but does not explicitly commit to EBM. Instead, there is great attention to MCAs, reflecting the longer tradition of adopting a conservation focus to coastal ecosystem management in Zanzibar, driven by the primary dependence on coastal and marine resources for the local economy. The draft policy does refer though to the ‘lack of effectiveness of public initiatives aimed at preserving the integrity of coastal ecosystems’, including ICZM (The Revolutionary Government of Zanzibar 2014: 7). Table 4 summarises key policy and legislation relevant to the coastal areas with attention to community involvement and integrated approaches.

Structures and remits of village-level groups

Despite the long commitment to an ecosystem-based approach through marine conservation, community-based structures are sector-specific and focused. Community-based natural resource

management approaches have been in existence in Zanzibar since the 1980s. Revisions of the policy and legislative frameworks of the forestry, fisheries and environment sectors in the 1990s led to recognition and mainstreaming of participatory approaches and a clearer remit for natural resource conservation strategies and plans. Within the forestry sector, Community Forest Management Areas, supported by management agreements (CoFMAs), have been formed, whereas in the fisheries sector, Shehia (or village) Fisheries Committees (SFCs) have legal remit under the Marine Conservation Unit (MCU) regulations of the 2010 Fisheries Act No. 7. SFCs are therefore associated with MCA where they exist and the committee reports to the MCA Fishermen’s Executive Committee, made up of the chairpersons of each SFC. The Executive Committee is required to work with the Shehia’s Executive Committees and the MCU Advisory Council. The formation of CoFMAs was led by a Norwegian-funded project through CARE International called HIMA (*Hifadhi ya Misitu ya Asili* - ‘conservation of natural forests’), which began in 2010 as a REDD+ pilot project, with objectives and remit influenced by the project, leading to little space or opportunity for community members to influence the purpose, activities or design of CoFMAs (Benjaminsen 2014; Eilola et al. 2015).

The 2015 Environment Act allowed for the introduction of Integrated Coastal Zone Management (ICZM), led by the Department of Environment (DoE). One of the initiatives under the recent ICZM push is the formation of ICZM committees at the community level, drawing on members of the other

Table 4
Policy, legal and strategic provisions sanctioning community-based natural resource management with focus on mangroves and fisheries in Zanzibar

Sector	Policy/Act/Plan	Provision for community-based and integrated management
Forest	National Forest Policy of 1995	Provides for community engagement in planning, management and enforcement through CoFMAs. Conservation and management of mangroves within the framework of ICZM.
	Forest Resources Management and Conservation Act No. 10 of 1996	Recognises and provides guidance for formation and operation of CoFMAs and safeguarding community rights to plan, manage and share benefit from forest resources
	Mangrove Forest Management Plan of 2010	Provides guidance for community participation during development of forest management agreements. Develop a programme of integrated coastal area management as a collaborative effort among all relevant sectors.
Fisheries	Fisheries sub-sector Policy under the Agricultural Sector Policy of 2002	Promotion of community participation in managing and conserving marine resources.
	Fisheries Act No. 7 of 2010.	Provides for formation and operationalisation of MCU under which regulations SFCs are established
	Regulations for the Marine Conservation Unit (2013)	Provides for engagement of communities as primary stakeholders of MCAs in the planning, implementation and enforcement through SFCs
Environment	Zanzibar Environmental Policy 2013	The Government will strengthen the Environmental Governance and intra- and inter-sectoral coordination for effective environmental practices and law enforcement. Promote and implement Integrated Coastal Zone Management System Environmental Management Committees such as Climate Change and Integrated Coastal Zone Management Committees will be established at National, District and Shehia levels
	The Zanzibar Environmental Management Act No. 3 of 2015	Maintaining basic ecological processes of land, water and air Promoting the sustainable use of both renewable and non-renewable natural resources
Local Government	Zanzibar Local Government Policy of 2014	A framework for grassroots initiatives towards conservation of natural resources Encourages community mobilisation for development programmes mainstreaming management of natural resources

committees, including forest conservation, fisheries and environment. However, the formation of ICZM committees has been slow and inconsistent, due to unpredictable financial resources from donor-funded projects. While these could have provided an opportunity for information sharing and joint working across the sector-based groups, the persistent fragmentation at the higher departmental level threatens the local level opportunities for collaboration (Nchimbi 2018).

The village of Uzi has a CoFMA and an SFC, as shown in Table 5, which sets out the structures, mandate, responsibility, authority and level of interaction. The CoFMA reports to the Sheha (Village Head) and submits minutes of meetings to an umbrella NGO, *Jumuiya ya Uhifadhi Misitu ya Jamii Zanzibar* (JUMIJAZA), through another NGO, Jozani Environmental Conservation Association (JECA). Formation of JUMIJAZA came as an exit strategy of the HIMA project, serving as an association of CoFMAs, attached to the Department of Forest and Non-renewable Natural Resources (DFNR) and, at times, donor project funding has been distributed through the NGO. It was reported that whilst the mangrove forest is in good condition, there is some deforestation and degradation. Villagers perceive the CoFMA to have strict rules, particularly in banning charcoal-making. The CoFMA is also known

for its constructive approach to conflict resolution, having participated in a process to resolve conflict with a neighbouring Shehia on illegal mangrove cutting. However, few people in the village are involved in CoFMA activities beyond the committee and there is some resentment towards the strict regulations. Following the closure of the HIMA project, facilitation of the formation of CoFMAs was assumed by DFNR, but with decreased flow of resources, there has been a lack of consistency and sustainability in support to CoFMAs.

The SFC reports to the Sheha and to the MBCA, in line with fisheries committees being under the remit of MCU. The committee reported to undertake patrols, have regular elections and collect fees from temporary fishing camps. The camps are set up for a period of three months and each fisherman at the camp pays a fee for staying there, which goes to the Village Development Committee. The timing of the elections is determined by the MBCA and the committee reported that they do not have their own by-laws, but operate within the remit of the MBCA regulations. The committee is, then, very dependent on activities being driven by the MBCA rather than the local community, leading to perceptions that they are yet another extended form of the government policing of fisheries resources. This reflects Shinn's (2015) findings in Zanzibar,

Table 5
Local natural resource governance structures in Zanzibar

Sector	Mandate	Key Responsibilities	Level of Formal Authority	Level of Interaction with other structures
Local Government	Sheha; District Authorities, Sectoral District Officers (forestry, fisheries) with dual devolved reporting lines to both District Authorities and state departments.	Control access to the resource Enforcement of rules from respective line ministries/departments Monitoring and surveillance of resources Conflict Resolution	Formally mandated as employees of line ministries/ departments Shehas are locally recognised as key decision makers and reference point for all activities undertaken in respective Shehia.	Not well defined, ad hoc and issues specific, irregular and mostly informal
Forestry	CoFMAs sanctioned by the Forest Resources Management and Conservation Act No. 10 of 1996. The state maintains ownership of the forest resources through DFNR.	Community mobilisation, sensitisation and awareness raising on conservation and sustainable utilisation of forest resources Assist in patrols and law enforcement for effective management of forest in respective areas Reports to designated unit in the DFNR.	Formalised with DFNR but challenging due large dependence on external financing to effectively operate, particularly in development of management plans as prerequisite for formulation of management agreements. Recognition in local decision making as part of the Shehia's governing body	Motivation for establishment is overshadowed by donor syndrome; with limited financial support, operations are at stake. Irregular and informal interactions with other local structures, e.g., SFCs
Fisheries	SFCs established under the MCU Regulations of 2013 and mandated to work with the DoFD under respective MCAs.	Monitoring and Surveillance of fish landings Community mobilisation, sensitisation and awareness raising on sustainable fisheries including campaigns against illegal and destructive fishing activities. Reports to the respective MCA Officer	Under respective MCAs, SFCs are perceived to be much stronger with more autonomy than the CoFMAs in the same Shehia. Locally recognised as a key decision-making entity especially related to access to fisheries. All groups working within the fisheries sector at the beach are to be registered with the respective SFC in liaison with the formally recruited beach recorder.	Recognised as part of the Shehia's governing body and regular interaction particularly with the MCA officer in charge Irregular and informal interactions with other local structures e.g., CoFMAs

that fisheries village committees are heavily influenced by government officers and do not really have any power.

The functioning and activities of SFCs were very dependent on the objectives and activities of MACEMP. The MBCA had been formed prior to the start of MACEMP, with support from the WorldWide Fund for Nature (WWF), with the MBCA issuing regulations that control fishing within the area. Since the closure of MACEMP, few resources have been made available to SFCs to support patrols or other activities and, as noted by Levine (2016: 1285), 'community capacity for co-management is still considered to be low'. Levine (2016) attributes this not only to the lack of resources available to SFCs, but also to the hierarchical system of governance in Zanzibar, with Sheha having strong authority at the village level and reporting upwards and concludes 'it remained challenging for fishermen to even conceive of local institutions that could participate in co-management without strong direction from a centralised authority' (2016: 1287).

Interaction at the local level

As the government-led formation of community-based structures directs committees to report upwards to authorities, there is little feedback and downward accountability to communities. Whilst this does not preclude interaction with other structures at village level, it does not encourage interaction and cooperation either. The SFC in Uzi consistently stated that they work alone and do not cooperate with anyone at the local level. As stated earlier, they collaborate with the MBCA, attending occasional meetings, and with fisheries officers, but are not very active in the absence of donor-funded projects and government-issued instructions. They also participate in planning processes organised by the Shehia development committee and collaborate with neighbouring SFCs when there are cross-border fisheries-related conflicts to be resolved.

The CoFMA reported much more interaction with a range of actors, including forest officers, JUMIJAZA, JECA and other CoFMAs, particularly on issues such as marking boundaries and resolving conflict associated with illegal extraction of timber. They also reported limited interaction with the SFC, specifically on the issue of patrolling to prevent fishers using poison within the mangrove forests. However, these patrols rarely take place, relying on the initiative of the MBCA, as neither the SFC or CoFMA own a boat.

What was found then in Uzi is that the forest and fisheries committees remained far apart as there is very little formal interaction between structures formed to govern coastal ecosystems, though there is independent interaction between each structure and the Sheha, for reporting purposes, and with the respective government department. The community-based structures largely operate independently of each other despite having potentially common remits and interests. As at the higher departmental level, there is no defined forum for an integrated conservation arrangement at the Shehia. In other villages in Zanzibar, relations between community-based forest and fisheries management structures have been reported as

being problematic, with little trust and accountability, resulting from top-down initiation and reporting (Cinner et al. 2012; Saunders et al. 2008).

DISCUSSION

The policy context in both countries reflects a move towards emphasis on taking a more integrated, ecosystem-based approach to the management of coastal ecosystems at any level. There is though greater recognition of the sectoral challenges to coastal ecosystem governance in the Kenyan documents than those of Zanzibar, perhaps reflecting the longer tradition of engagement of the fisheries sector in Zanzibar in a conservation approach to management through MCAs. Despite much recognition of the challenges that a sectoral focus brings in the Kenyan policies, there is as yet little guidance on how a more integrated approach may be taken in practice.

At the time of data collection, there was no evidence of an integrated or ecosystem-based approach informing the management arrangements, structures or activities. Some policies, plans and legislation, such as the National Mangrove Ecosystem Management Plan in Kenya and ICZM in the 2015 Environment Act in Zanzibar, were very recent to the time of data collection. They had, however, been preceded by ICZM-type policies and plans and so the principles of integration and ecosystem-based management have been accepted in both countries for many years. The evidence suggests that an integrated or ecosystem-based approach has not moved much beyond policy and legislation and supports Alexander and Haward's (2019: 33) observation that implementation of ICZM and EBM is 'slow and problematic' and that a sectoral focus remains dominant.

The sectoral focus was certainly dominant in both Vanga and Uzi, with local committees and groups given mandate by their respective government departments or agencies, with little reference to other structures or sectors. Whilst there is limited collaboration with, and reporting to local government in both cases, links to sectoral ministries are strong and provide the overall policy direction and priorities. In both villages, the fisheries structure has been in place for longer and is more established, though the BMU in Kenya appears much better organized and stronger, with its clear fisheries remit, than the SFC in Uzi, which is linked to general marine conservation rather than being specific to fisheries. This suggests that a strong link to a government sector is necessary for structures to have a clear remit and be able to keep going over time, despite the potentially greater opportunity of a more integrated approach through marine conservation in Zanzibar.

Although CFAs in Kenya have legal remit given by the Forest Act 2005 and subsequently the Forest Conservation and Management Act 2016, they are not mandatory as BMUs are. The formation of the CFA in Vanga was initiated by the community, though the formation process requires close collaboration with KFS, particularly because of the requirement that a highly technical Participatory Forest Management Plan (PFMP) is developed. Where CFAs have

been formed, it has been found that little power is actually devolved to the CFA, with valuable activities such as licensing remaining with KFS (Mogoi et al. 2012; Chomba et al. 2015). In Uzi, a CoFMA had to be developed and this was initiated by the forest department working closely with NGOs partnering to implement a REDD+ pilot project (Sills et al. 2014).

All of the community-based structures report to their parent ministry, either directly or through the Village Head or NGO. This supports the perception of such structures as part of, or an extension of, government sectors. The systems are, then, hierarchical, with local level structures dependent on sectoral government officers for instructions, support and, often, funding. Central government departments and ministries have maintained power and control through the approach they have taken to collaborative management, as found elsewhere (Poteete and Ribot 2011).

Although all of the structures are elected, it is not clear how democratic they may be perceived to be, or how democratic their remit is. The election processes take place outside of the local government system and are driven by the respective government sector department. There was a degree of suspicion in both villages that committee members seek office to take advantage of the opportunity to attend workshops and receive allowances and to enrich themselves through collection of fines and fees. The degree to which this was actually happening was not clear, particularly given that some of the structures, particularly the SFC in Uzi and the CFA in Vanga, were not very active, however the perception that this is the motivation for committee membership must undermine the authority of these structures. The lack of reporting and accountability to the wider community must also undermine the legitimacy of the structures. In contrast to Larson and Soto's (2008) suggestion that elected user groups may be more democratic than local government because of their downward accountability, there was a distinct lack of accountability to the wider communities in both villages suggesting that the groups do not contribute to the practice of democracy in either locations.

In both cases, there is no evidence of planned-for, deliberate and regular coordination and communication between local forestry and fisheries structures. Whilst no evidence was found of there being 'adverse consequences' arising from the lack of coordination, beliefs were expressed that the lack of coordination led to duplication of activities, confusion over remit and missed opportunities to be more active and effective through pooling resources. Where there is interaction between local level structures, this tends to be informal or takes places around specific, funded activities and conflict resolution. The barriers to coordination appear to be related to the remit that local groups have and which they adhere to, with this remit coming from the parent sector to which they are associated. Taking a more integrated approach would require going beyond the given remit and would require initiative. Such initiative is not encouraged by the top-down, sector-led approach to natural resource governance at all levels.

The lack of adequate coordination between the different local structures and limited accountability between the structures

minimises the effectiveness and impact of conservation efforts of the groups. While line ministries may offer support to their respective local co-management structures, improved local interaction would provide a robust network that would strengthen the capacity of local co-management beyond the support offered by state-mandated line ministries (Saunders et al. 2008; Agrawal and Gibson 1999). Cinner and McClanahan (2015: 138) through their study which reviewed the performance of and attitudes towards BMUs on the Kenyan coast propose that considerable positive outcomes can be achieved through co-management efforts, however the process may take time. From the study of Vanga and Uzi villages, it is clear that sectoral coordination in the establishment of local co-management structures is necessary to ensure there is effectiveness in natural resource management at the local level. This approach would promote better accountability at the local level and promote a holistic approach to management of resources and mainstreaming of ICZM and EBM in planning processes.

CONCLUSION

The sector-specific composition, activities and reporting of the forestry and fisheries management structures at the local level in Kenya and Zanzibar has resulted in silo-ed structures and behaviour. There is a clear lack of interaction and cooperation between structures, despite national policy that advocates ICZM in both countries. This reflects Taljaard et al. (2012) and Sale et al.'s (2014) findings that ICZM often has to rely on fragmented, sectoral structures and management approaches and this results in a piecemeal rather than integrated approach, with implications for the quality and nature of outcomes. The lack of reference to the remit and function of other structures within the remit of sectoral local groups suggests a desire by parent ministries to control the composition and activities of management structures that fall within their mandate. The creation of sector-focused community-based structures, operating on the fringes of local government, therefore further embeds the challenges of a sectoral approach to the governance of coastal ecosystems.

This sector-led, top-down approach to the formation of local governance structures has led to several challenges for natural resource governance: 1) the committees or groups work independently of each other, often with little coordination or cooperation, including with local governance structures such as village heads and village councils; 2) the structures are often ineffective and fairly inactive when project funding that led to their formation, as is often the case, is no longer available; and, 3) the local level structures are seen as part of the government sector, awaiting instructions, direction and support, rather than being locally-driven and resourced. This sectoral approach semi-bypasses elected local government. This, it is suggested by Ece et al. (2017), calls into question its democratic credentials, as questions are raised as to who is a representative, where does the remit for representation come from and how can such structures be called to account

by local people. They go on to advocate for the inclusion of democratically elected representatives in forest management in existing formal decentralised government as the solution to the sectoral hold on management. There is, though, little evidence to date of such an approach taking place from which to learn and so potential implications for forest management and associated livelihoods need further investigation.

It is clear though that the long-term sustainability of collaborative structures is related to the dependence they have on donor-funded projects. This dependence on donor funding through fixed duration projects has several implications for collaborative natural resource governance. Firstly, those involved in developing and delivering on the project are under pressure to demonstrate outputs and outcomes, which may be in the form of the establishment of new groups; it is doubtful that utilising existing structures would look as attractive as the formation of new groups. Secondly, once the project finishes, and if no further funds are available, not only is support and impetus likely to be greatly reduced, whether from government or NGOs, attention of all or some of those concerned may be diverted to other projects or seeking other projects, that may or may not build on the establishment of the community-based structures. Thirdly, documents and knowledge associated with the formation of a governance approach may, to an extent, be lost with the closure of a project, with staff moving onto other employment, potentially in other countries. The findings and analyses of these cases lend support to the need for greater consideration to be given to the long-term sustainability of such governance systems and structures and to how a more integrated approach could be supported through governance structures and systems. Incorporation of a commitment to ecosystem-based management and ICZM is insufficient on its own; attention must be given to how governance structures and systems can be developed and/or encouraged to work more collaboratively in a coordinated way, whilst addressing concerns about the democratic basis of such structures.

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