

Community based- flood risk management: experiences and challenges in Malawi

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ABSTRACT

Current flood risk management strategies in Malawi are focused on community- based flood risk management (CB-FRM), but studies explicitly exploring the realities of CB-FRM stay limited. Through presenting results of a fieldwork undertaken in April 2016 in the Lower Shire Valley, this paper discusses flood impacts, provides an overview of CB-FRM practices in Malawi and the challenges faced. The fieldwork involved 11 focus group discussions, survey and field visits. Findings indicate that CB-FRM in Malawi presents a multi-stakeholder effort and calls for more risk reduction and preparedness oriented approach. Current practice requires a number of improvements in terms of financing, participation, governance and project management.

INTRODUCTION

Malawi is a developing country and one of the worlds' poorest nations. It is prone to a range of disasters, with flooding and drought being the most common hazards, together causing annual losses of 1.7 % of Gross Domestic Product (GDP) (Pauw et al. 2011). In a country where the economy is predominantly agro-based, and the majority of population lives in rural areas, flooding as an almost annual episode presents a serious threat to livelihoods (Shela et al. 2008; Nkomwa et al. 2014). Recurrent and extreme floods damage infrastructure, wash away crops and livestock and leave negative impacts on local communities social, economic, cultural and psychological values (Mijoni & Izadkhan 2009; Nillson & Chavula 2010). In January and February 2015, Southern Malawi was affected by one of the largest floods on record, causing destruction to properties, loss of more than 170 lives, with many more displaced from their homes and livelihoods (Rudari et al. 2016). This event attracted extensive media coverage and received international aid for flood response and recovery.

Following the Local Government Act and Decentralisation Policy of 1998, Malawi developed a decentralised institutional system for disaster risk management (DRM), providing administrative and political power to local governments. The central coordinating body at the national level is the Department of Disaster Management Affairs

(DoDMA), which coordinates implementation of National Disaster Risk Management Policy (Government of Malawi 2015). Local government structures are at the District level, Area level and Group Village Head (GVH) level. Civil Protection Committees (CPCs) at these levels are in charge of DRM issues, and for coordination and implementation of disaster risk reduction activities and policies. In addition, CPCs prepare and annually update Contingency Plans and Disaster Risk Management Plans. The main objective of contingency plans is to provide a detailed overview of disaster context in the area, and to guide different stakeholders in the implementation of various projects and activities. Since there are no readily available resources for the plans' implementation (Chiusiwa 2015), governmental institutional structures tend to rely on non-governmental organisations (NGOs) and donors for implementation of activities (Shela et al. 2008), who play a key role in DRM (Mijoni and Izadkhah 2009).

As in Malawi, across the developing world, disaster risk management activities are predominantly led by NGOs, and implemented at local levels through community-based disaster risk reduction (CB-DRR), a relatively well established field and practical approach in DRM (Carby 2015; Shaw 2012). CB-DRR approaches gained momentum through realization that disasters are more a consequence of socio-economic than natural factors (O'Keefe et al. 1976); and the evidence that the traditional, top-down approaches very often do not adequately face the vulnerabilities of those at risk (e.g. Wisner et al. 2004). CB-DRR presents a bottom-up approach, where communities at risk transition from subjects to objects of disaster risk management (Maskrey 2011). Local communities are recognised as a resource, with a great deal to offer in terms of local knowledge, skills and capacities (Dekens 2007; Dumaru 2010; Scolobig et al. 2015).

In a process of CB-DRR, communities at risk take an active role in risk identification, selection and prioritization of solutions, project implementation, monitoring and operation. Due to participatory processes and inclusive approach, evidence to date indicates that CB-DRR approaches deliver multiple benefits, including: more sustainable solutions, strengthened local capacities, increased local resilience and cohesion, and empowered communities (Maskrey 1989; Shaw 2006; Gero et al. 2011; Maskrey 2011). However, previous research also acknowledges a number of challenges. Very often, participatory approaches are done 'at community level rather than with community or local ownership' (Maskrey 2011), which can hinder previously mentioned long-term sustainability of solutions and community ownership (Shaw 2006; Maskrey 2011). Further critique of the approach include: the level of community involvement is often unsatisfactory; CB-DRR is often not incorporated in policies at local and national levels; the underlying causes of vulnerability are not tackled (e.g. access to land, inequality); often the lack of resources, political will and technical capacities to implement (Shaw 2006; Maskrey 2011; van Niekerk and Coetzee 2012).

Motivated by the frequent occurrence and impacts of flooding in Malawi, predominance of community-based approaches in the country and previously mentioned challenges of CB-DRR, this paper aims to explore the realities and challenges of community-based flood risk management (CB-FRM) in the Lower Shire Valley in Malawi. It does so through presenting the results of a scoping fieldwork conducted in Malawi in April 2016. In this research, CB-FRM is adopted as a hazard-specific type of CB-DRR. In the next section

a case study area followed by a detailed description of the fieldwork is presented. The subsequent section discusses results of in-depth case study analysis, focusing on flood impacts, activities and roles of different stakeholders, and challenges for CB-FRM in Malawi. Finally, the main conclusions and implications of the research are outlined.

METHODS

Guided by the questions on the status of and challenges for community-based approaches in Malawi, viewed through the lens of stakeholders involved in community-based flood risk management (CB-FRM) process, the research adopted a qualitative research framework. An in-depth case study approach to research design, often used by researchers in the field (e.g. Mercer et al. 2009; Hiwasaki et al. 2014) was employed. The Lower Shire Valley was selected as a case study for several reasons, including: it is the most flood prone area of Malawi (Nillson et al. 2010); it has an extensive presence of NGOs implementing CB-FRM projects; and, previous contacts of research team, which allowed for an ease of access to stakeholders.

Introduction to case study

The fieldwork was conducted in Nsanje and Chikwawa Districts in the southern part of Malawi as shown in Figure 1. The hydrology of the Lower Shire Valley is dominated by the Shire River, the only outlet of Lake Malawi. Flooding in the region tends to be caused by flooding of the Shire River itself, flash flooding of the Ruo River and backwater effects from the Ruo River joining the Shire River (Nillson & Chavula 2010; Atkins 2011). Flood hazard in the Lower Shire Valley is exacerbated by a number of confounding factors, including: location, siltation of river beds, topography (low-lying area), rainfall characteristics, hydrology, soil structure, land use and land cover (Mwale 2014).

Disaster risk, however, comprises more than simply the characteristics of hazard and is a consequence of vulnerability and exposure of the people and places in hazardous areas (e.g. Wisner et al. 2004). Whilst quantifying vulnerability of rural communities to flooding in the Lower Shire Valley, Mwale et al. (2015) discussed vulnerability through a lens of exposure, susceptibility and capacity coupled with the thematic areas of sustainable development, namely social, economic, physical and environmental factors. The findings indicate that vulnerability is shaped predominantly by the socio-economic and environmental susceptibility (Mwale et al. 2015). In other words, the communities in the Lower Shire Valley lack economic resources, diversification of employment opportunities and local economies; and demonstrate low levels of literacy, high poverty and environmental fragility (Mwale et al. 2015).

The Lower Shire Valley is the poorest region of the country, and as in much of Malawi, livelihoods are directly dependent on subsistence farming and rain-fed agriculture (Shela et al. 2008; Mwale et al. 2015). During flooding, the livelihoods are directly impacted through washing away of crops and livestock, and damages to infrastructure (e.g. housing, transport) (Mijoni & Izadkhah 2009).

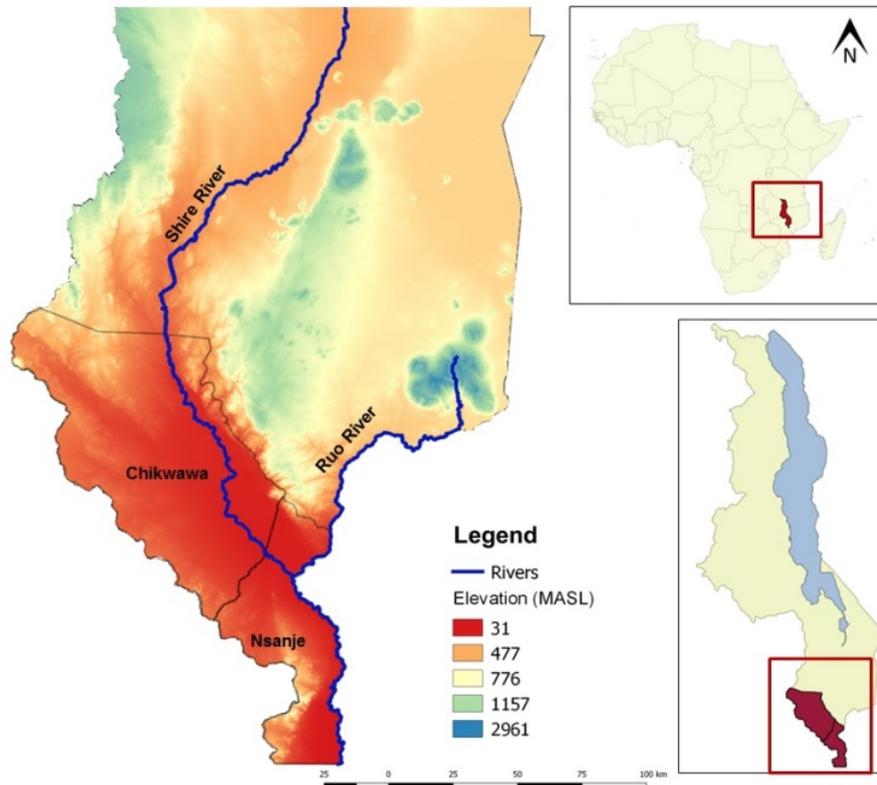


Figure 1: Location of the case study area (created by first author using QGIS; source of the GIS data: Department of Surveys (2017) and USGS (2017))

Fieldwork

Primary data were collected through focus group discussions (FGDs) with core stakeholder groups, namely: i) local communities (i.e. Village Civil Protection Committees- VCPCs), ii) NGOs, and iii) local government (i.e. District Civil Protection Committees- DCPCs). For this research, community scale refers to the scale of the operation of the VCPC. FGDs were selected as a preferred method for primary data collection when practical considerations were taken into account (e.g. duration of fieldwork, ease of access to the stakeholder groups, collection of diversity of views by different groups). Alongside the FGDs, primary data were collected through both informal conversations with the local facilitators and a short survey distributed to the FGD participants from the DCPC and NGOs. Secondary data were collected through a desk study, by reviewing available consultancy reports and policy documents. The FGD topics were concerned with the experiences and impacts of flooding, the roles different stakeholders take across various stages of the disaster risk management cycle, experienced challenges with community-based flood risk management (CB-FRM) and identified needs. The survey was designed to inform future development of the study (i.e. inform the selection of the case study areas for the next research stage).

In total, 11 FGDs were held, with FGD details provided in Table 1. In all FGDs an attempt was made to ensure gender representation (which was the case in all but one). The stakeholders were recruited through contact with the Disaster Risk Officers in Chikwawa and Nsanje. When visiting the villages, the research team was accompanied by a member

of the DCPC, acting as a facilitator and translator. In addition, a Malawian project co-investigator also acted as a translator.

All FGDs were audio recorded, transcribed, coded and analysed following established qualitative analysis approaches (e.g. Bryman 2012). Types of impacts of flooding were divided into direct (i.e. occurring due to direct contact with flood water) and indirect (i.e. induced by flooding but occurring spatially and temporally outside the actual event). For representing roles and activities of different stakeholder groups, a combination of desk study (for understanding the roles) and classification of activities according to different stages of disaster risk management cycle (i.e. mitigation, preparedness, response and recovery) were used. Finally, the challenges for CB-FRM were analysed by looking through a lens of different stakeholders groups (i.e. communities, NGOs and local government).

Table 1: Details of the focus group discussions (* indicates the name of the community)

	District	Stakeholders	Number of participants	Male	Female
FOCUS GROUP DISCUSSIONS	Nsanje	Bitrinyu*	10	7	3
		Nyathando*	11	8	3
		Mbenje*	7	5	2
		Nyan'ga*	10	6	4
		NGOs	8	7	1
		NGOs	3	3	0
		DCPC	9	8	1
	Chikwawa	Chikhamwi*	16	12	5
		Medram*	7	3	4
		Khunghbwe*	9	5	4
		DCPC	17	12	4

Research limitations

The limitations of the presented research are primarily concerned with data collection activities and, whilst they could not be fully avoided owing to the type of research being undertaken, the lessons learned will be used to inform further research. Full attention has been given to detailed translation, however the on-spot translation from Chichewa to English resulted in a possible loss of some in-depth information. This was the case in FGDs with communities. Furthermore, the quality and amount of gathered data was in some cases influenced by previous experience of local FGD facilitators and rapport with communities. In addition, cultural factors (i.e. researchers as outsiders to community, presence of village chiefs) might have had an impact on the information shared in the discussions. These limitations are the realities of qualitative social research, and the researcher minimized them whenever possible. Furthermore, the present study presented a scoping study of an ongoing research, and lessons learned will be used to inform future activities.

The identified flooding impacts only represent the views of communities; NGOs and District Civil Protection Committees (DCPCs) were not asked the questions about flooding impacts, as the study was concerned with understanding the flooding impacts on the communities at risk. Consequently, some aspects (e.g. recovery expenditure) did not emerge in the findings, since those impacts are not experienced by communities. However, other aspects of the study fully involved NGOs and DCPCs. Furthermore, the fact that the discussions were held in the aftermath of the unprecedented floods of 2015 may explain why communities focused on effects of this extreme flood event. Being aware of potential bias ensured an informed and therefore balanced analysis of the focus group data.

RESULTS

The results section is structured in a manner elaborated in the methodology section.

Flooding impacts

The results presented in Table 2 indicate that floods impose adverse impacts and disruption to everyday activities for rural communities in the Lower Shire Valley. In a situation where income generation opportunities of people are limited (Mwale et al. 2015), floods have long- term consequences for full recovery. In the case of the 2015 floods, the recovery efforts by local actors and the international community were hindered by the El Nino induced droughts of 2016, bringing further disruption to income generating activities (i.e. farming). Furthermore, the displacement of large numbers of people due to flood events can lead to disruption of essential services. For example, communities reported that boreholes in their villages become non-functional under increased population pressure.

The impacts of flooding posed a challenge to what is culturally accepted (e.g. men and women using the same accommodation in the shelter camps), and have influences on other cultural practices (e.g. delay of funerals due to inaccessibility of cemetery). Furthermore, loss of crops and livestock resulted in food insecurity, hunger, loss of earnings, and the floods themselves also, resulted in non-trivial impacts, both for physical (e.g. cholera) and mental well-being (e.g. long term trauma).

Table 2: Flood impacts as seen by focus group discussions participants from rural communities (not presented in any particular order)

DIRECT	<ul style="list-style-type: none"> • Loss of homes • Loss of crops • Loss of livestock • Damage to infrastructure (e.g. roads, bridges, schools) • Loss of life • Health and well-being effects (e.g. occurrence of cholera) • Psychological effects • Displacement of people and livestock • Limited or total lack of access to services (e.g. water, sanitation, health care)
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INDIRECT	<ul style="list-style-type: none"> • Increased population pressure on boreholes leading to non-functioning • Violation of cultural values • Disruption to educational system • Crocodile attacks • Hunger • Health and well-being effects (e.g. sexually transmitted diseases, long-term trauma) • Family members separated
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The roles and activities of different stakeholders in community-based flood risk management (CB-FRM)

During the field visits, the researchers had an opportunity to visit some of the implemented projects and understand the roles of different stakeholder groups. The fieldwork findings indicate that NGOs are implementing the majority of community scale projects in the Lower Shire Valley, with limited contributions from government and individual donors. This is in line with previous findings (e.g. Mijoni and Izadkhah 2009).

The community-based projects are implemented in the villages through Village Civil Protection Committees (VCPCs). As mentioned earlier, the VCPC represented the stakeholder groups of local communities in this research. When asked about their roles in disaster risk management (DRM), the participants provided various examples. For instance, the members of the VCPC disseminate early warning messages; operate and maintain community-based rainfall and/or water level gauges; lead search and rescue operations in the case of flooding; and, coordinate the distribution of relief items at community scale. In addition, the members of the VCPCs are targeted to receive capacity building trainings (related to the topics of DRM and climate change adaptation), and responsible for propagating the training further to community members. However, one of the main roles, as seen by FGD participants, is the development and annual update of Village Contingency Plans and Action Plans, planning documents that serve as a cornerstone of local level DRM. These plans at Group Village Head level feed into plans at Area Level which further feed into the plans at District level, hence representing local needs and priorities to higher decision making levels.

The main role of NGOs is to work in partnership with both governmental institutional structures (i.e. VCPC, Area Civil Protection Committee (ACPC) and District Civil Protection Committee (DCPC)) and communities to help build capacity and deliver CB-FRM projects on the ground. As stated by Waylen and Martin-Ortega (2013), NGOs and their development partners financially assist and support the implementation of Contingency and DRM Plans at the district levels. Some of the examples of activities undertaken by NGOs across different stages of the DRM cycle are (also see Figure 2):

- Risk mitigation phase (e.g. river training works, awareness raising, planting of trees and grass, village savings and loans)

- Preparedness (e.g. early warning infrastructure, warning message dissemination, first aid training, identification of possible evacuation routes, cell phones provision)
- Response (e.g. food distribution, sanitation and hygiene, shelter provision, drinking water)
- Recovery (e.g. livelihood support, small monetary contributions)



Figure 2: Example projects: a) community operated rainfall gauge, b) evacuation structure, c) community-based dike, and d) seed bank (Source: Taken by first author, April, 2016)

As described earlier, the DCPC is the main body within the local government in charge of coordinating and overseeing issues of disaster risk reduction at the district level. As such, the DCPCs are in charge of mobilizing resources; information sharing through decentralized structures; training of Civil Protection Committees (CPCs) at Area and Village levels; development of Contingency Plans and Disaster Risk Management Plans; directing NGOs to project sites; and, impacts and needs assessments.

Challenges for community-based flood risk management (CB-FRM) in Malawi

An overview of the main challenges, for different stakeholder groups, emerging through the FGD discussions is provided in Figure 3.

As the main project implementers at community scale, NGOs recognised a number of deficiencies in the current approaches to CB-FRM in the districts. NGOs identify the issues of project ownership and sustainability as one of the core obstacles in CB-FRM. It was repeatedly mentioned that implemented projects fail (i.e. lose functionality and effectiveness) over longer time frames, due to the poor operation and maintenance. As one possible explanation, participants offered a lack of appropriate exit strategies by NGOs. In other words, in current approaches, project ownership is not adequately translated to communities.

CHALLENGES FOR COMMUNITY-BASED FLOOD RISK MANAGEMENT

<ul style="list-style-type: none"> Aid dependency syndrome Lack of project ownership Communal activities fail Power relations in communities Problems in project allocation Too much focus on response and recovery Projects match donors requests, not local contexts Duplication of efforts Issues with projects sustainability Lack of exist strategies for NGOs 	<ul style="list-style-type: none"> Lack of financial resources Lack of funding for monitoring Absence of multi-sectoral approach Lack of project ownership Inadequate project sustainability Aid dependency syndrome Power relations in communities Issues in the operation of decentralised structures Duplication of efforts Inadequate coordination between core actors Lack of NGOs accountability and transparency Inadequate quality of projects 	<ul style="list-style-type: none"> Lack of financial, material and human resources Lack of/inadequate capacity building Power relations in communities Lack of inclusion of local knowledge Operation & Monitoring Inadequate quality of projects Lack of transparency and accountability Overlapping of responsibilities Communication between NGOs Upstream practices hinder downstream efforts
NGOs	LOCAL GOVERNMENT	COMMUNITIES

Figure 3: Challenges for community-based flood risk management in the Lower Shire Valley as seen by different stakeholder groups

In their work, NGOs come across a high level of aid dependency syndrome (i.e. communities are accustomed to hand-out culture), as well as obstacles due to power relations in the communities (i.e. people with power influence the selection of project beneficiaries). Furthermore, NGOs members raised concerns regarding the fact that some areas in the districts are still not covered by the work of NGOs. This creates an unwanted situation in which some areas lack projects and interventions, whilst in other areas there is a duplication of efforts. As a possible explanation, it was mentioned that some areas in the districts are difficult to access. Finally, NGOs pointed out the fact that the current approach does not meet the actual needs of communities due to the resources available for specific donor request activities. In other words, the potential projects to be implemented in the villages reflect the current donor requirements rather than what was recognized by community members as crucial for improving their welfare in terms of CB-FRM.

Local communities also identified a number of challenges. Although participants acknowledged that certain challenges arise due to community structure (e.g. power relations in the community, lack of capacity), the vast majority of identified challenges were related to direct interaction with NGOs and local government. For instance, communities felt that their rich, local knowledge is often disregarded. A lack of budget transparency from NGOs was also seen as directly influencing project implementation and evaluation, and participants stated that both NGOs and local government lack more general accountability towards the communities. Additionally, communities felt that lack of communication between NGOs leads to duplication of efforts, particularly in the relief phase. Interestingly, participants stated that good practices in their villages are often hindered by upstream behavior of others (e.g. deforestation), that further increases flood risks.

The final stakeholder group, local government, highlighted the lack of financial resources, making it a challenge to implement Contingency and Disaster Risk Management Plans at the district level. The scarce resources made available for local governments are used for flood response and recovery. Hence, a challenge of shifting towards more proactive, mitigation and preparedness oriented approaches remains. Participants from local government also pointed out a range of problems occurring at community level, including: lack of project ownership, sustainability, aid dependency and duplication of efforts. They felt that the existing decentralized system is in need of improvement, since it is not fully operational. Furthermore, District Civil Protection Committee, as a main disaster risk management coordinating body at the district level, felt that the existing coordination between core actors is not satisfactory.

DISCUSSION AND CONCLUSIONS

The aim of this paper was to present the realities and challenges of community-based flood risk management (CB-FRM) in Malawi through presenting the findings of recent fieldwork in the Lower Shire Valley in Malawi. The findings of this research confirm that community-based approaches present preferred avenues for flood risk management. Whilst multiple stakeholders are involved in this process, implementation initiatives are mainly led by NGOs.

Even though the focus of the study was on the hazard of flooding, it was concluded that communities often do not make distinction between hazards; rather they have a tendency to discuss the challenges disasters bring in general and how they deal with it. Possible explanations lie in the fact that the Lower Shire Valley is frequently affected by different hazards (floods, droughts, strong winds) and in addition, during period of fieldwork, it was experiencing a severe drought. Hence, this makes the findings of this study interesting not just in the light of CB-FRM, but in a wider context of community-based disaster risk reduction (CB-DRR) and different hazards.

The findings demonstrate that flooding in Malawi has severe impacts. Destruction of houses, crops and livelihoods hinders sustainable development and poverty alleviation in the case study area. The study revealed that next to frequently mentioned flood impacts, there is a range of consequences that are quite often overlooked, such as long-term psychological trauma and disturbance to cultural values. Some of these consequences can perpetuate already existing problems (e.g. rate of HIV and STDs transmission).

The study showed that the CB-FRM in Malawi is a multi-stakeholder effort, with strong ties between NGOs, local government and communities. Whilst visiting projects in the communities, researchers noticed a number of implemented projects that are oriented towards risk mitigation and preparedness (e.g. community-built dikes, community-operated early warning systems, village savings and loans). Still, a vast majority of efforts is oriented towards flood relief and recovery. However, a narrative of change and a perceived necessity for proactive approach to disaster risk management (DRM) presents an encouraging finding. In order to facilitate this transition, there is a need for a creation of dedicated funding sources for the implementation of Contingency and DRM Plans at district levels, in addition to tailoring donors funding towards a creation of long term community resilience through more risk mitigation and preparedness oriented activities.

As findings revealed, the CB-FRM approach in Malawi has many challenges. Among others, they can be classified into challenges in financing, participation, governance, project management (from onset to operation and maintenance) and also cultural dimensions (e.g. structure of communities that determine power relations). The challenges of different stakeholder groups are unique to their specific context and experiences. Some examples include: communities feel that their local knowledge is often disregarded; NGOs and local government pointing out the aid dependency syndrome in communities; and, communities noticing the influence of upstream practices on flooding in their villages. However, most challenges can be related to the above proposed classifications. For instance, all groups are aware of the financial constraints and challenges in coordinating with different groups.

The research revealed the frontiers and directions in which improvement is needed for CB-FRM in Malawi. As such, the results can be used to point stakeholders involved in the CB-FRM to revisit their approaches. This is especially relevant for the NGOs and local government. For instance, this research revealed that sustainability of projects is a realistic challenge hindering long-term effectiveness. In order to ensure the sustainability, there is a need for an increased buy-in from the local government, multi-stakeholder partnerships and increased consideration of local communities' capacities. An example of CB-FRM projects in Chikwawa discussed by van Niekerk & Coetzee (2012) shows benefits of this approach. However, the present research demonstrated that examples like this still present an exception. For upscaling of good practices and ensuring sustainability, there is a need for development of localized policies. These recommendations are in line with the work of Maskrey (2011).

The study contributes to the wider literature on CB-FRM and CB-DRR by adding a systematic overview and in-depth analysis of a case study. By having a detailed understanding of CB-DRR challenges and designing solutions for improvement, a step towards the creation of a 'good practice' for effective CB-DRR on an international scale can be made.

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