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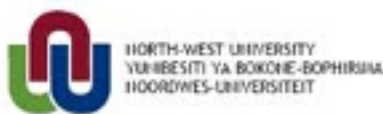
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A normative model for integrating organisations for disaster risk reduction and climate change adaptation within SADC member states

DRR and CCA
within SADC
member states

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Abstract

Purpose – Research has demonstrated that governance of disaster risk reduction (DRR) and climate change adaptation (CCA) have evolved largely in isolation from each other – through different conceptual and institutional frameworks, response strategies and plans, at both international, national and subnational levels. As a result, the management of disaster risk through DRR and CCA is highly fragmented. The purpose of this paper is to investigate the set of actors and their location in government that create and shape governance in DRR and CCA integration within the Southern African Development Community (SADC) member states.

Design/methodology/approach – The study draws upon a range of data collection techniques including a comprehensive literature review relating to DRR and CCA in general and in the SADC member states, face-to-face interviews and an online survey. A mixed method research design was applied to the study with a total of 35 respondents from Botswana, Madagascar, Malawi, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe participating in the face-to-face interviews and an online survey.

Findings – The analysis shows that DRR and CCA are carried out by different departments, agencies and/or ministries in all but three SADC member states, namely, Mozambique, Mauritius and the Seychelles. Participants were able to highlight the different ways in which integration should unfold. In light of this, the paper proposes a normative model to integrate government organisations for DRR and CCA within SADC member states.

Originality/value – The implementation of the model has the potential to accelerate the integration of organisations for DRR and CCA, with the resultant improvement in the implementation of risk reduction strategies and efficient use of resources.

Keywords Organization, Integration, Disaster risk reduction, Disaster risk governance, Climate change adaptation, Southern African Development Community

Paper type Research paper

1. Introduction

Most disaster risk reduction (DRR) and climate change adaptation (CCA) structures in governments have largely developed in parallel, and as a result they operate in isolation (Becker *et al.*, 2013). As a result, debates on addressing disaster risk effectively revolve around the integration of DRR and CCA. Integration of DRR and CCA is seen as both necessary and desirable to address disaster risk more effectively and efficiently (Bryson *et al.*, 2006). Although several studies have highlighted the apparent need to integrate DRR and CCA in the last two or so decades (see Begum *et al.*, 2014; Birkmann and Mechler, 2015; Forino *et al.*, 2014, 2015; Heazle *et al.*, 2013; Howes *et al.*, 2014; Kelman *et al.*, 2015; Mercer *et al.*, 2014; van der Keur *et al.*, 2016), less emphasis has been placed on providing tools to support the integration process (Manyena, 2016). According to Becker *et al.* (2013), there is a need to explore potential ways in which to redesign the structures for more efficient DRR and CCA in the future.

Whereas there are numerous techniques, frameworks and measures to reduce disaster risk, effectuating these from rhetoric to practice still requires proper implementation mechanisms.



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It is thus argued that substantial reduction of disaster risk emanating simultaneously both from natural hazards and climate risks is contingent on institutional and governance structures to implement measures. This paper aims to address this gap by proposing a normative model for integrating structures for DRR and CCA with specific reference to the Southern African Development Community (SADC) member states. First, a theoretical grounding of the study through the conceptualization of disaster risk governance underpinning integration of organisations for DRR and CCA is given. The differences in application and understanding of these domains at national government structures are highlighted. Finally, the findings of the study are followed by a discussion and the presentation of the normative model.

2. Disaster risk governance: theoretical underpinnings for integrating structures for DRR and CCA

Governance is the “rule of the rulers” (The World Bank, 2013). It can be seen as the process by which authority is given to those making the rules and how these rules are executed. It is the art of steering societies and organisations to achieve certain goals for the common good. Governance occurs through interactions among structures, processes, role-players and traditions that determine how power is exercised, how decisions are taken and how citizens or other stakeholders have their say (or not!) (van Niekerk, 2015). Thus, governance is about power, relationships and accountability: who has influence, who decides and how decision makers are held accountable (Hodgson, 2006). It involves processes through which collective goals are defined and pursued wherein the state is not the only or most important actor. The development of a governance perspective involves recognising the roles of supranational and subnational states and non-state actors and their complex interactions in the process of governing. This holds true for disaster risk and climate change governance alike.

Disaster risk governance at global, national and subnational levels is of great importance for effective and efficient reduction of disaster risk (United Nations Development Programme, 2015). It has been argued that institutional and governance mechanisms contribute a great deal to the continual increase in disaster risk in many parts of the world (United Nations International Strategy for Disaster Reduction, 2013). This is so because the lack of appropriate institutional and governance structures and frameworks to deal with risks enhances the vulnerability in communities (Seng, 2013). Whereas there are many techniques, frameworks and measures to reduce disaster risk (Pelling and Wisner, 2009), effectuating these from rhetoric to practice requires proper mechanisms for implementation. Drawing from Ahrens and Rudolph (2006), it is thus argued here that operationalising these measures will require effective institutional and governance mechanisms. Ahrens and Rudolph (2006) further argue that substantial reduction of disaster risk is contingent on institutional and governance structures to implement measures to reduce disaster risk.

Thus, the ability of the institutional and governance mechanisms to facilitate the implementation of risk reduction measures will likely contribute substantially to the reduction of lives lost, number of people affected by disasters and minimise economic losses as a result of disasters.

The importance of institutional and governance issues in risk reduction has only gained momentum a decade or two ago with the adoption of the Hyogo Framework of Action by United Nations International Strategy for Disaster Reduction (UNISDR) (2005). Disaster governance is enshrined in Principle 1 of the Hyogo Framework for Action (UNISDR, 2005). The importance of disaster risk governance to manage risk is further highlighted in Principle 2 of the Sendai Framework of Disaster Risk Reduction adopted in 2015 (United Nations (UN), 2015). Amongst other things Principle 2 states that “strengthening disaster risk governance for prevention, mitigation, preparedness, response, recovery, and rehabilitation is necessary and fosters collaboration and partnership across mechanisms

and institutions for the implementation of instruments relevant to disaster risk reduction [...]” (UN, 2015). Risk governance (and in this regard, disaster risk governance) represents both the institutional structure and the policy process that guide and constrain collective activities of a group, society or international community to regulate, reduce or control disaster risk (Renn *et al.*, 2011).

United Nations International Strategy for Disaster Reduction (2011) observed that existing risk governance capacities and arrangements are failing to achieve their aim of regulating, reducing or controlling disaster risk. Gero *et al.* (2011) are of the opinion that integrating DRR and CCA is made more difficult as projects are often framed according to institutions, policies and legislative frameworks. This creates a barrier for DRR and CCA practitioners trying to develop and implement holistic and strategically placed activities that reduce vulnerability and enhance resilience (Gero *et al.*, 2011). Such failures and barriers, coupled with increased vulnerability and exposure, point to the need to reflect on the range of available institutions, policy and administrative and regulatory mechanism for managing disaster risks (Ahrens and Rudolph, 2006; Gall *et al.*, 2014).

The same holds true for most countries, particularly those in the developing world who face significant disaster risk governance challenges, because they lack coherent organisational mechanisms to address disaster risk emanating from both natural hazards and climate change. Weak national and local institutions for addressing disaster risk are cited as major factors contributing to vulnerability to natural hazards in developing countries (Anderson, 1985). Thus, addressing disaster risk effectively calls for the transformation of governance mechanisms including government institutions that were created in the nineteenth century. These institutions were not designed to address current complex environmental issues and disaster risks (Beg *et al.*, 2002; Howes *et al.*, 2012 citing Beck, 1992; Sokona and Denton, 2011).

Governance is considered as a major framework to investigate the integration of DRR and CCA, although it still represents a confounding topic in the CCA and DRR literature (Forino *et al.*, 2015). Whereas integration occupies the epicentre of several domains, inter-organisational theory has provided frameworks to understand and implement integration endeavours particularly of horizontal nature (Keast *et al.*, 2007). This involved engagement in inter-organisational relations that takes a variety of forms for organisations addressing boundary crossing issues including cooperation, coordination, collaboration and/or merging (Babiak, 2007). Begum *et al.* (2014) identified bridge, blend or cooperate as the different ways of linking DRR and CCA. According to Keast *et al.* (2007), these concepts are different and they are located at different points on a continuum of integrative mechanism depending on formality or informality that governs the integration activities/relationships.

For integration to be successful, certain enablers must be put in place to aid integration. Serrao-Neumann *et al.* (2015) identified a number of enablers for maximising synergies between DRR and CCA. Particularly for cross-sectoral planning, these amongst others include rules and regulations, improved knowledge and capacity, better decision making, higher-order government support and conversation and communication between the agencies. Maximising synergies between DRR and CCA is critical to achieve improved planning outcomes in light of likely increases in the intensification and frequency of extreme weather events (Serrao-Neumann *et al.*, 2015).

3. Research methods

This paper investigates the set of actors and their location within governments that create and shape governance in DRR and CCA integration. The study draws upon a range of data collection techniques including a thorough and comprehensive literature review relating to DRR and CCA in general and in the SADC member states. A number of documents[1] were reviewed to gain a deeper understanding of the organisations for coordinating DRR and

CCA at national level of government within the SADC member states. Additional information was sourced from key informants within government in each country to fill in the information gap. A mixed method research design (Creswell, 2015; Creswell *et al.*, 2011; Tashakkori and Teddlie, 2010) was applied to the study. As Creswell (2015) argues, in mixed-methods research, a qualitative design offers in-depth experience of individual perspectives while quantitative design provides generalisation and precision. A total of 35 respondents from Botswana, Madagascar, Malawi, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe participated in the face-to-face interviews and an online survey. The respondents include DRR specialists, climate scientists, meteorologists, programme officers, operations managers, assistant directors, deputy directors, directors, chief directors and chief executive officers with experience ranging between 7 and 28 years in their respective fields.

All the respondents were selected purposefully using non-probability and snowball sampling (Creswell, 2015; Collins, 2010). First, convenience sampling (Collins, 2010) was applied to select respondents in the fields of disaster risk management, CCA, environment and meteorology within SADC member states to participate in the face-to-face semi-structured interviews. The use of semi-structured interview approach allowed respondents to describe their understanding and experiences of the effects in their own words (Patton, 1990). Second, quantitative data were collected and analysed using survey analytics (see www.surveyanalytics.com). The programme was chosen and used because it offered the benefits of collecting data online. Both closed-ended and open-ended questions with Likert-type scales were applied to collect quantitative data. The analysis in this phase of the study comprise of descriptive statistics used to determine the relative prevalence and importance of different dimensions as suggested by the qualitative study (Creswell and Clark, 2011). The use of multiple methods and different sources of data serves as a kind of triangulation which, according to Polkinghorne (2005) does not serve to verify a particular account but to allow the study to move beyond a single view of experience and deepen understanding.

4. Findings

All interview responses were transcribed verbatim and initially checked and categorised manually to identify core “presenting” themes and patterns. Themes that emerged from the data were pieced together to provide a comprehensive picture of the experience of the respondents. Therefore the findings are presented according to the identified themes to demonstrate how they contributed to arriving at the development of the normative model for integrating organisations for DRR and CCA within SADC member states:

Theme 1. Organisations for coordinating DRR and CCA in each SADC member state.

The results of the analysis show that DRR and CCA as fields of practice are fragmented as they are carried out by different departments, ministries and/or agencies in all but three SADC countries Mauritius, Mozambique and the Seychelles. These findings support results of empirical studies carried by such authors as Becker *et al.* (2013), who found that DRR and CCA are affiliated to different departments and ministries in all the countries in SADC except Mozambique. This despite the fact that the majority of these countries rely on the same source of baseline information such as hydro-meteorological data used in early warning systems and for long-term climate predictions.

In Mauritius, both the National Disaster Risk Reduction and Management Centre and the Climate Change Division are housed in the Ministry of Environment, Sustainable Development Disaster and Beach Management. In Mozambique, the National Disaster Management Institute (INGC), in the Ministry of State Administration is responsible for disaster management and CCA. The analysis further shows that INGC shares the mandate

on CCA with the Sustainable Development Council (CONDES). The situation in Mozambique is complicated by the fact that the Ministry for the Coordination of Environmental Affairs (MICOA) is the designated national authority for climate change (van Logchem and Queface, 2012). As Bussell and Malcomb (2014) indicate, the involvement of both the Ministry of Environment and the INGC in climate change-related activities seem to create turf wars between the two institutions. As a result, no comprehensive strategy for dealing with climate change, or for related DRR efforts, has been developed at the national level (Bussell and Malcomb, 2014). In the Seychelles, the Division of Risk and Disaster Management, Climate Affairs, Adaptation and Information Division, and the Seychelles National Meteorological Services are all located in the Ministry of Environment, Energy and Climate Change. Whereas the linkages and the coordination mechanisms between the two divisions located in ministries and/or departments in the three countries are not clear, their placement in one organisation holds a great promise for addressing disaster risk in a harmonised way.

Moreover, in each of the 15 SADC member states divisions responsible for DRR/DRM and climate change are supported in executing their duties by a number of committees including the National Committees and Technical Committees. The analysis further reveals that in some SADC countries like Botswana, Lesotho and Swaziland, units for CCA are located within the meteorological services. The meteorological division is important in generating and providing early warning information, which is important for DRR and adaptation to the impacts of climate change.

With DRR and CCA coordinated by separate organisations in 12 of 15 SADC member states, the countries lack integrated organisational and institutional mechanisms to effectively address disasters risk emanating from both natural hazards and climate change. Integration of organisation for DRR and CCA becomes pertinent in developing countries including SADC member states that cannot afford parallel structures as these structures might impede each other's work and send mixed messages to policy makers and budget holders (Becker *et al.*, 2013). In their study, Becker *et al.* (2013) concluded that the duplications of structures DRR and CCA are unfortunate, inefficient and fertile soil for conflict over resources to implement similar activities:

Theme 2. Distinction between risk posed by climate change and risk from natural hazards.

As a basis for establishing the need to integrate, respondents were asked to indicate whether their organisations distinguished between risk that emanates from climate change and risk that emanates from natural hazards when addressing disaster risk. This was to verify whether practitioners were engaging in cross-field activities or not. The majority of respondents (53 per cent) indicated that they distinguished between risk posed by climate change and risk from natural hazards as opposed to the 47 per cent who indicated that their organisations do not distinguish between the risks. The statement below captures the views of some of the respondents who distinguish:

Only climate change is our main business.

One respondent from this group acknowledged that the majority of hazards are hydro-meteorological and are linked to climate change and therefore there is no conscious strategy to separate the management of these from CCA. He pointed out that the reason for the separation might be that the two issues are handled by two different institutions that have their own strategies.

The 47 per cent which indicated that they do not distinguish argued that climate change is triggering disaster risks and therefore it was difficult to divorce the two issues. Statements such as "We don't separate them because we believe that climate change (CC) or

climate variability (CV) is contributing to frequent severe weather conditions such as rampart heat waves and flash flood occurrence” were raised:

We deal with disaster risk across the board. We conduct risk mapping for all kinds of hazards and our work is informed by climate projections. We work quite a lot with meteorological services on early warning. So I can confidently say that in executing our duties in disaster risk management, we take cognisance of the changing climate.

Such responses show that some government organisations are considering the effects of climate change on disaster risk and this is shaping how they carry out their responsibilities. This prompted a question on the role of the respondents’ organisations in DRR and/or CCA:

Theme 3. The role of my organisation in CCA/DRR matters.

The question on the role of the respondents’ organisation in either DRR or CCA was raised to verify whether the organisations are involved in both DRR and CCA. All respondents were able to articulate the role of their organisations. Those in the CCA field views DRR as a tool that is used to adapt to the impacts of climate change. The responses below characterise some of the respondents’ views:

Disaster risk reduction forms a core component of the Long Term Adaptation Scenario Phase 2 that we are involved in and our input is by providing early warning and forecasting for disaster risk reduction. By planning better, we are able to reduce disasters and if we reduce the impacts of disaster we are adapting.

Our responsibility is to coordinate disaster management within the country to make sure that the country is prepared for disasters.

We are involved in disaster risk management through early warning and vulnerability assessments. Based on our forecasting we provide advisory to disaster management. We are actually not involved in adaptation implementation but rather our role in adaptation is mainly advisory to the different sectors. We are in the climate science and we only provide information.

These statements do not only show that the respondents know and understand their roles and responsibilities, but also show that they are aware of the linkages that exist between DRR and CCA. In a way they are concurring that their roles and mandates overlap and go beyond purely disaster (risk) management and CCA. It is encouraging to observe that the practitioners noted and understood the overlaps and as such were working together to address disaster risk:

Theme 4. Overlaps between DRR and CCA.

As a result of DRR and CCA having similar aims and mutual benefits (Venton and LaTrobe, 2008), it was essential to verify whether respondents knew and understood the overlaps that exist. An overwhelming majority of respondents (77 per cent) indicated that there are major overlaps between DRR and CCA. Such a positive response is crucial in building a case for integration. Only a combined 22 per cent do not believe that there are major overlaps between DRR and CCA:

Theme 5. Understanding the imperative need to integrate DRR and CCA.

This question was mainly raised to verify if participants see a need to integrate DRR and CCA. This was deemed important drawing from Birkmann and Mechler (2015) who argue that matching the two fields both conceptually and practically requires a better and mutual understanding by the practitioners. A larger majority of respondents (67 per cent) indicated that integration is important as opposed to 33 per cent who believed it was not important. A number of reasons were cited for the necessity to integrate and these included similar effects and impact on the community and development, coping effectively and addressing

the vulnerabilities of populations, easy advocacy for funding from donor agencies since there would be no competition, they would carry out a similar mandate, improving coherence and optimise resource utilisation and they both had to be approached with a developmental focus, both addressing common issues and providing better actions to strengthen communities' resilience.

In total, 33 per cent of the respondents who were not convinced that integration of organisations for DRR and CCA is necessary cited such reasons as the fact that many other areas of operation between climate change and disaster management did not have strong linkages, CCA did not necessarily address natural hazards as it only addresses specific climate-related risks while DRR addressed all kind of hazards:

Theme 6. Ways in which integration of organisations for DRR and CCA should occur.

Respondents were asked to highlight the different ways in which integration of organisations for DRR and CCA should unfold. All respondents unanimously agreed that there is a need for integration, however, their accounts on how integration should unfold varied a great deal.

A few respondents felt the need to locate both DRR and CCA in one department or ministry. One respondent also voiced his admiration of the merged structures for DRR and CCA in Mauritius and the Seychelles:

It is so relevant and important to have similar issues housed at one place. This will assist in proper planning which will lead to building resilience of communities.

However, some respondents indicated that there is no need for structural adjustments to bring DRR and CCA together at this stage. This group of respondents is of the view that efforts should be channelled towards improving cooperation and coordination of activities. This view is encapsulated in these statements that were made during the interviews:

I am not sure about bringing the organisations together because it always brings people's emotions and protectionism where people start thinking about their jobs. I think we should advocate more for working together than merging and moving into one room. Ad hoc as it maybe, we must create a structure of working together while we are housed in separate organisations.

We meet in forums with different stakeholders and therefore it is practically too early to talk about structural adjustments as the mechanisms we are using currently are sufficient enough to address the issues.

Another group of respondents noted that integration is important but rather DRR and CCA must be mainstreamed into sector departments. They are of the view that mainstreaming of DRR and CCA into the different sectors would be more feasible than bringing the organisations responsible for the two together as most countries in SADC are still in early stages of development:

Integration is very important, but we do not need to rush into bringing climate change adaptation under disaster risk reduction. Instead let us focus on mainstreaming the two into different sectors, develop appropriate frameworks to guide what is supposed to happen and the interactions.

Whereas respondents had different views on the ways in which integration should occur, there were consensus that integration would bring greater impact in reducing disaster risk and efficient use of resources:

Theme 7. Formalisation of institutional arrangements.

A large majority of respondents (86 per cent) are of the view that integration of organisations for DRR and CCA requires formalised institutional arrangements. Only 14 per cent of the respondents did not think it was necessary to formalise the institutional arrangements for the DRR and CCA. Whereas the majority of respondents

indicated that integration requires formalisation, responses to a question of whether the relationships between the organisations responsible for DRR and CCA in their country were formalised or not varied. A large number of respondents (67 per cent) indicated that there were formal agreements between the organisations in the form of memorandum of understanding and service-level agreements.

A substantial number (33 per cent) indicated that there were no formal agreements in place. These respondents were sceptical of the sustainability of the arrangement in the long run and this is reflected in the following statement:

There is nothing binding in these structures and it much depends on personalities, The main problem is sustaining the ad hoc nature of these structures in the long term as it depends on people and their feelings. There is a lot of changes in government and there is no continuity in participating in these structures when new officials are appointed.

Despite this scepticism about the ad hoc nature of the arrangements, the interactions are central to the creation of the appropriate environment for accelerated uptake of the interdependent nature of issues by the organisations concerned:

Theme 8. An enabling environment for integrating DRR and CCA.

Having identified the ways in which integration should take place and how respondents are engaging with their counterparts, it was important to solicit the respondents' views on what would constitute an enabling environment for integration of organisations for DRR and CCA to work. The following issues were highlighted as being important:

- (1) legal and regulatory frameworks;
- (2) empowerment of political leaders;
- (3) providing platform for dialogue;
- (4) addressing the will of senior officials;
- (5) providing relevant capacity and systems; and
- (6) support of international organisations.

Some of these factors identified by the respondents are in line with the assertion by the United Nation Framework Convention on Climate Change (UNFCCC) (2008) that enhanced risk reduction prompted by major climate-related disasters would only be sustained in the long term when underpinned by minimum conditions of political, social and economic stability within the context of good governance.

Having presented the findings in the preceding section, the following section discusses these findings in the form of a proposed model for integrating organisations for DRR and CCA within the SADC member states.

5. Discussion

The themes, patterns of behaviour and conceptual understandings of respondents were considered in the context of the development of the model to integrate organisations for DRR and CCA. The convergence of the literature on integration of DRR and CCA and the agreement of the empirical data point to a need to develop and implement a model that will enhance disaster risk governance. Taking these into considerations, a model for integrating organisations for DRR and CCA is proposed. The model uses the existing structure in each SADC member state as its point of departure, while proposing modifications to the existing configuration to ensure the seamless reduction in disaster risk if merging is adopted.

The model is comprised of five constructs A-E, wherein A consist of the main organisations currently coordinating disaster risk, i.e. disaster risk management,

meteorological services and the climate change division in each SADC member states. As it stands the configuration of these organisations differs as reflected in Table I. B is the integration continuum with its distinguishing elements (see NemaKonde, 2016; NemaKonde and Van Niekerk, 2017, for an explanation of the integration continuum). C is the proposed new structures evolving from organisations in Block A if the option of merging is taken. D is the sectors in which DRR and CCA must be mainstreamed and E consist of the enablers for integration to succeed.

The key to interpreting and understanding the model is constituted of the following elements:

- Red line represents the functional relationship between the three divisions in A.
- Purple lines represent the progression of relationships between the three divisions in A in the integration continuum.
- Green lines represent the structural adjustments of organisations in A if they opt to merge. Alternatively, the integration modes in B can be used for mainstreaming of DRR and CCA into sector departments in D.
- Orange line – the newly formed division in C, which is integrated, must coordinate the mainstreaming DRR and CCA into sectorial departments and policies in D.
- Blue line – the enablers in E must be put in place for the integrations modes in Block B to be effected, structural adjustments in C to happen and for mainstreaming of DRR and CCA into sectorial departments in D (Figure 1).

In this model, integration is conceptualised as a continuum with modes ranging cooperation, coordination, collaboration through to merging of the structures as shown in B. These modes are located at different points on the continuum depending on the level of intensity of linkages and degree of formality or informality that governs the integration activities (Keast and Mandell, 2012). Since there are several types of interactions to consider, the appropriate interaction for a particular situation must be chosen carefully based on the objectives of integration (McNamara, 2012). The last mode of integration in the continuum, B, is merging of structures, which brings together distinct and independent organisations or components thereof to constitute a unified whole (Barki and Pinsonneault, 2005) in C. The model proposed considers both the political leadership and technical (administrative) components as important to contribute to the reduction in disaster risk. The proposed integrated structures in C are designed with due regard for the existing configurations of structures for DRR and CCA within the SADC member states as outlined in A.

The Inter-Ministerial Committee on Disaster Risk Governance (DRR and CCA) must be constituted by different minister whose portfolios or sectors are affected by disaster risk from natural hazards and climate risks. This should be the highest political and decision-making body on all matters related to DRRs and CCA. The committee must be convened by the head of the ministry in which the division for disaster risk governance is located. The committee must be responsible for the sanctioning of the joint development of policies and legislation for DRR and CCA. The committee must also serve as a focal point for disaster risk governance.

The Disaster Risk Governance Division (DRR and CCA) must consist of different units including the unit for DRR, CCA, unit for policy and legislation development, unit for coordinating sectorial mainstreaming of DRR and CCA and the unit of information and research. This division will be the functional structure for disaster risk governance at the national level of government. Like in most of the SADC member states, this division must be located in the office with higher authority such as the office of the president, deputy president, prime minister or deputy prime minister. The location of this division in such

| SADC member state | National organisations coordinating DRM | National organisations coordinating climate change (adaptation) |
|------------------------------|---|--|
| Republic of Angola | National Service for Civil Protection in the Office of the Interior Minister National Commission on Civil Protection in the presidency coordinates | Coordination Unit for Climate Change within the Ministry of Environment The Technical Multi-Sectoral Commission for the Environment (CTMA) National Commission on Climate Change and Biodiversity |
| Republic of Botswana | National Disaster Management Office (NDMO), in the Office of the President National Committee on Disaster Management National Disaster Management Technical Committee | Select Committee on Climate Change at Parliament level Department of Meteorological Services (DMS) under the Ministry of Environment Wildlife and Tourism National Committee on Climate Change |
| Democratic Republic of Congo | The Council for Civil Protection within the Ministry of Interior National Crisis Committee, chaired by the Ministry of the Interior is the main national platform for disaster risk reduction | Ministry of Environment, Conservation of Nature, Water and Forestry is the focal point organisation National Authority for the Clean Development Mechanism National Climate change Committee |
| Kingdom of Lesotho | Lesotho Disaster Management Authority (DMA), in the Prime Minister's Office Lesotho Disaster Assessment and Coordination Committee | Ministry of Natural Resources through Meteorological Services Parliamentarian Portfolio Committee |
| Republic of Madagascar | The National Disaster Risk Management Council Unit for the Prevention and Management of Emergencies National Bureau of Disaster and Risk Management | Directorate of Climate Change under the Ministry of Environment, Sea, Ecology and Forests The Thematic Climate Change Group (GT-CC), established in 2009, focus on promoting the exchange of information |
| Republic of Malawi | Department of Disaster Management Affairs under the office of President and Cabinet National Disaster Risk Management Committee The National Disaster Risk Management Technical Committee The National Disaster Risk Management Technical Sub-Committees | The Ministry of Environment and Climate Change Management Department of Climate Change and Meteorological Services in the Ministry of Natural Resources, Energy and Environment National Climate Change Committee (NCCC) National Technical Committee on Climate Change |
| Republic of Mauritius | National Disaster Risk Reduction and Management Centre in the Ministry of Environment, Sustainable Development Disaster and Beach Management National Disaster Risk Reduction and Management Council National Emergency Operations Command under the command of Commissioner of Police | Mauritius Meteorological Services under the Prime Minister's Office The National Climate Committee Climate Change Information Centre (CCIC) |
| Republic of Mozambique | National Disaster Management Institute, in the Ministry of State Administration The Coordinating Council for Disaster Management (CCGC), chaired by the Prime Minister Technical Council for Disaster Management (CTGC) | Ministry of Land, Environment and Rural Development (MITADER) National Disaster Management Institute, in the Ministry of State administration Ministry of Planning Inter-Institutional Group on Climate change |

Table I.
Organisations for coordinating disaster risk reduction and climate change (adaptation) in each SADC member state

(continued)

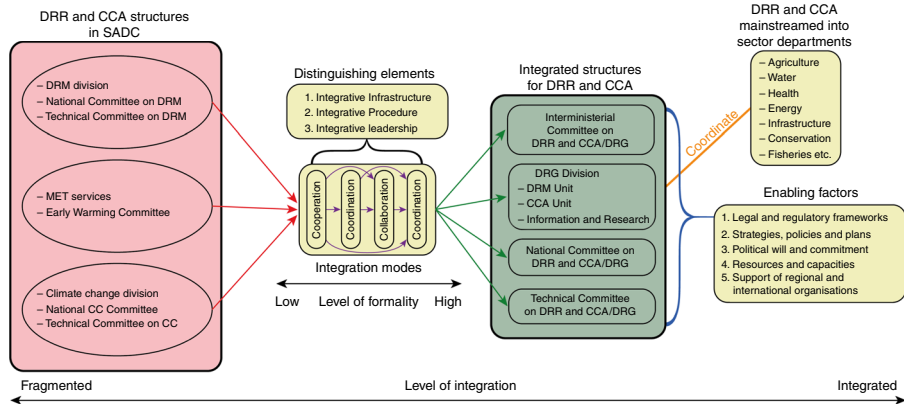
| SADC member state | National organisations coordinating DRM | National organisations coordinating climate change (adaptation) |
|-----------------------------|--|---|
| Republic of Namibia | The Office of the Prime Minister (OPM) National Disaster Risk Management Committee (NDRMC) Directorate for Disaster Risk Management (DDRM) National Focal Persons Forum (NFPPF) Namibia Vulnerability Assessment Committee | Ministry of Environment and Tourism (MET) Climate Change Unit (CCU) The Parliamentary Standing Committee on Natural Resources and Economics National Climate Change Committee (NCCC) Meteorological Services Division of the Ministry of Works and Transport (MWT) |
| Republic of Seychelles | National Disaster Committee (NDC) in the Office of the President The Division of Risk and Disaster Management (DRDM) under the Ministry of Environment, Energy and Climate Change National Emergency Operations Centre | Climate Affairs, Adaptation and Information (CAAI) Division and the Seychelles National Meteorological Services (SNMS) in the Ministry of Environment, Energy and Climate Change Seychelles National Climate Change Committee |
| Republic of South Africa | National Disaster Management Centre, in the Department of Cooperative Governance and Traditional Affairs Intergovernmental Committee on Disaster Management National Disaster Management Advisory Forum (NDMAF) | Climate Change Unit in the Department of Environmental Affairs Inter-Ministerial Committee on Climate Change (IMCCC) National Committee on Climate Change (NCCC) Intergovernmental Committee on Climate Change (IGCCC) |
| Kingdom of Swaziland | National Disaster Management Agency in the Deputy Prime Minister's Office | Department of Meteorology the Ministry of Tourism and Environmental Affairs National Climate Change Committee Swaziland Environmental Authority |
| United Republic of Tanzania | Disaster Management Office in the Office of the Prime Minister Tanzanian Disaster Relief Committee | Division of Environment in the Vice President's Office National Climate Change Steering Committee National Climate Change Technical Committee |
| Republic of Zambia | Disaster Management and Mitigation Unit in the Office of the Vice President National Disaster Management Council National Disaster Technical Committee | Ministry of Lands, Natural Resources and Environmental Protection, formerly Ministry of Tourism, Environment and Natural Resources Zambia Climate Change Facilitation Unit National Climate Change and Development Council (NCCDC) |
| Republic of Zimbabwe | Department of Civil Protection in the Ministry of Local Government, Rural and Urban Development National Civil Protection Coordination Committee | National Climate Change Office under the Ministry of Environment and Natural Resources National Climate Change Committee National Task Team on Climate under the Directorate of the President's Office |

Table I.

offices must not be symbolic but rather be afforded the necessary status for effective and efficient functioning in addressing disaster risk.

The National Committee on Disaster Risk Governance (DRR and CCA) must comprise of the senior representatives of the relevant national departments whose ministers serve on the Inter-Ministerial Committee on Disaster Risk Governance. This committee must serve to provide a mechanism for all the relevant role-players to consult one another and coordinate

Figure 1.
Disaster risk
governance model for
integrating structures
for DRR and CCA
within SADC
member states



Source: NemaKonde (2016)

their activities on DRR and CCA issues. On the other hand the Technical Committee on Disaster Risk Governance (DRR and CCA) is a multi-sector technical advisory body composed of professionals and specialists from various sector departments and from supporting local, regional and international partners. United Nations International Strategy for Disaster Reduction (UNISDR) (2009) indicates that effective routes to address disaster risk requires diverse means and expertise with the different fields of science joining forces to produce well suited solutions to risk-related problems. The main function of the committee should be to advise the DRG Division and the National Committee on DGR on operational issues and activities. The establishment of this committee is crucial as the use of scientific and technical knowledge is an essential foundation for the reduction of disaster risk (UNISDR, 2009).

In the proposed model, over and above the integration of the organisation for DRR and CCA, both must be mainstreamed into the most vulnerable sectors to climate risk and natural hazards and these amongst others include agriculture, water resources, health, land use, environment, and finance and planning (D). The proposed unit for sector coordination within the newly formed division of Disaster Risk Governance in Block C must be tasked with the duty of establishing focal point in each of these sectors to make sure that DRR and CCA are mainstreamed.

Since theoretical approaches of inter-organisational relationships are largely assumed to reflect free choice, produce benefits for all parties and only continue when there are ongoing mutual benefits (Budd, 2015), certain enablers, E, must be put in place for the successful integration of DRR and CCA. Most important amongst these are the legal and regulatory frameworks, political will and commitment, joint development of strategies, frameworks and plans, resources and capacities allocations and the support of international organisations.

6. Conclusion

The results of the analysis of structures in this study show that DRR and CCA as fields of practice are fragmented as they are carried out by different departments, ministries and/or agencies in all but three SADC member states. This paper presented a model for integrating structures for DRR and CCA within SADC member states. It is anticipated that the proposed model will provide insights for practitioners and researchers alike who would like to empirically test the integration of structures for DRR and CCA. The model is comprehensive because it considers all the main organisation addressing disaster risk in each SADC

member state, provides the different modes of integration while considering the level of integration intensity, proposes structural configurations, suggests integrated structures and considers different enablers that will help facilitate integration. The model is generic in the sense that it is not tailored for any specific country but rather can be adopted and implemented under different circumstances.

In implementing the model, SADC member states can opt to adopt different modes (to cooperate, coordinate, collaborate or merge) of integrating their efforts which will suite their particularities. The development of this model should be viewed as an ongoing process, as there is a need to continuously evaluate the successes and failures (or shortcomings) of the model and making appropriate modifications, as and where necessary. It is acknowledged here that despite placing both DRR and CCA under the department, ministry or agency in this model, creating synergies might still pose a challenge because these departments have separate mandates even at regional and international level. We argue that the setting up of these organisations should not become a goal in itself or a pseudo-indicator of success; it is the effects that they may, or may not, bring that provide the basis for considering success. The ultimate purpose for integration should be to enable development to be resilient in the face of climate change.

Note

1. Sub-regional assessment on mainstreaming and implementing DRR measures in Southern Africa; strengthening university contributions to climate compatible development in Southern Africa, volume 2; review of current and planned adaptation action: Southern Africa; report on the status of DRR in Sub-Saharan Africa; Southern Africa Sub-regional framework of climate change programmes; toolkit for national platforms for DRR in Africa.

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