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ARTICLE

Perceived Adverse Effects of Separating Government Institutions for Disaster Risk Reduction and Climate Change Adaptation Within the Southern African Development Community Member States

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Abstract Integration of disaster risk reduction (DRR) and climate change adaptation (CCA) is widely recognized as a solution for reducing the risk and impacts of disasters. However, successful integration seems elusive, and the two goals continue to function in isolation and in parallel. This article provides empirical insights into the perceived effects of separating government institutions for DRR and CCA within the Southern African Development Community member states. A mixed method research design was applied to the study. A total of 40 respondents from Botswana, Eswatini (until April 2018 Swaziland), Madagascar, Malawi, Namibia, South Africa, Tanzania, Zambia, and Zimbabwe participated in face-to-face interviews or an online survey. Five major effects of separating the organizations for DRR and CCA that impede efforts to reduce disaster risk coherently were identified: duplication of services, polarization of interventions, incoherent policies, competition for the same resources, and territorial contests. Given the continued fragmentation of institutions for DRR and CCA, highlighting these effects is important to emphasize the need for integrated approaches towards the reduction of disaster risk.

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1 Introduction

Over the last two decades, the disaster risk literature has emphasized an increasing need for integrating disaster risk reduction (DRR) and climate change adaptation (CCA). Despite progress of the discussions on integrating DRR and CCA, less is happening in practice as there are many challenges to integrating DRR and CCA (Dias et al. 2018). Mysiak et al. (2018) noted that there are few examples of how coherence between DRR and CCA is achieved in practice. One of the challenges to integration is that the concept has been conceptualized across disciplines, and as a result it is understood in various ways (Barki and Pinsonneault 2005). Hord (1986) pointed out that the attractive ideals of integration have not necessarily translated into clear actions among practitioners, partly because the concept of integration is ill defined in the literature. The challenge regarding interorganizational integration was clearly articulated by Axelsson and Axelsson (2006) who indicated that it is a difficult task for management to integrate activities of different departments in an organization. Whereas integration occupies the epicenter of several domains, in this article integration is conceptualized drawing from organizational studies, and mainly interorganizational theory, which has provided frameworks to understand and implement integration endeavors, particularly those of a horizontal nature (Keating et al. 2014).

Different terms—including mainstreaming, linking, convergence, and synergy—have been used in the literature (Mitchell and Van Aalst 2008; Solecki et al. 2011; Djalante

and Thomalla 2012; Begum et al. 2014) to denote the coming together of those who are involved in DRR and CCA. We prefer to use the term integration because integration is central to organizational design and performance (Kodner and Spreeuwenberg 2002). Shannon and Schmidt (2002, p. 17–18) defined integration as "the processes that cross or expand boundaries fixed by existing institutional rules, organizations and division of authority." Keast et al. (2007) defined service integration as the bringing together of previously dispersed and independent services into a more comprehensive service delivery system. Some authors such as Axelsson and Axelsson (2006) have presented integration as a continuum with full segregation on the one extreme (organizations that hardly interact with each other when it comes to dealing with public problems that extend beyond their capabilities) and fully integrated structures on the other extreme (organizations that have merged into a new entity meant to address the public problem through fully shared authority and capabilities). At the midrange of the integration continuum are organizations that share information, undertake coordination activities, or develop shared power arrangements, through collaboration in order to pool their capabilities to address the challenge (Page et al. 2015).

The need for the integration of DRR and CCA is heightened because of disconnects between policies and practices that are often centered in different departments/ministries with little or no coordination (Chmutina et al. 2016). However, the literature on the integration of DRR and CCA mainly focuses on those elements that link the two and make them compatible, with greater attention paid to the similarities, differences, areas of convergence, and the challenges for integration (Mitchell and Van Aalst 2008; Birkmann and von Teichman 2010). Some studies focus on the mainstreaming of both into sectoral policies (Kelman and Gaillard 2010; Turnbull et al. 2013) and into planning and development strategies (Serrao-Neumann et al. 2015; Galderisi 2017). Advances in the last 5 years have focused on developing frameworks and models for integrating the two (Forino et al. 2015; Nemakonde and Van Niekerk 2017). Kelman et al. (2017, p. 503) argued that "no reason exists to separate DRR and CCA, no reason exists to be territorial and no reason exists to create silos and cliques, labelling each other as being different and searching for separation."

Disaster risk reduction is the policy objective of disaster risk management (DRM), and its goals and objectives are defined in disaster risk reduction strategies and plans (UN 2016). In this regard, disaster risk reduction strategies and policies define goals and objectives across different timescales and with concrete targets, indicators, and time frames. In line with the Sendai Framework for Disaster Risk Reduction 2015–2030 (SFDRR), these should be aimed at preventing the creation of disaster risk, the reduction of existing risk, and the strengthening of economic, social, health, and environmental resilience (UN 2016). Disaster risk management is the application of disaster risk reduction policies and strategies to prevent new disaster risk, reduce existing disaster risk, and manage residual risk to contribute to the strengthening of resilience and the reduction of disaster losses (UN 2016). The United Nations (2016) further defines disaster management as the organization, planning, and application of measures that prepare for, respond to, and help recover from disasters. The Intergovernmental Panel on Climate Change (IPCC 2014, p. 5) defined adaptation as "the process of adjustment to actual or expected climate and its effects in order to moderate or avoid harm or exploit beneficial opportunities." Eakin et al. (2009) identified three distinct forms of adaptation—social vulnerability approaches aimed at addressing the underlying social issues, resilience approaches that focus on enhancing systems resilience, and targeted adaptation approaches that target climate change risks. According to Kelman (2017), climate change adaptation embraces a suite of activities that is explicitly encompassed within disaster risk reduction's definition, aimed at reducing risks and exploiting benefits from extremes or changes in the climate. However, implementing CCA only cannot address all DRR concerns, while implementing DRR will by definition address all CCA concerns (Kelman et al. 2017).

Disaster risk reduction and CCA are connected through common goals of reducing the impacts of extreme events and increasing resilience to disasters, particularly among vulnerable populations (Solecki et al. 2011). Pilli-Sihvola and Väätäinen-Chimpuku (2016) indicated that DRR and CCA share many similar objectives as they both address exposure and underlying vulnerability, and aim at enhancing the resilience of affected people, assets, and ecosystems. In their definition of adaptation, the UNISDR (2009) acknowledged that many DRR measures can directly contribute to better adaptation because by definition, DRR accounts for all drivers of hazards and vulnerabilities including climate change (Kelman et al. 2016). By scrutinizing the Paris Agreement (PA) and the SFDRR, Sushchenko and Schwarze (2020) explored the commonalities and differences between CCA and DRR and concluded that the two have common targets, priorities, and areas of action. Schipper (2009) pointed out that both DRR and CCA are concerned about developmental patterns and customs that exacerbate or reduce risks. Pilli-Sihvola and Väätäinen-Chimpuku (2016) indicated that the borders between DRR and CCA are increasingly becoming blurred, even though they evolved from different backgrounds, approaches, and time periods and they use different vocabulary. Banwell et al. (2018) argued that linking DRR

and CCA is essential for addressing the ever present, complex, and increasing risks, particularly those from weather and climate extremes. With a long history of incorporating climate-related changes at all times and space scales, and from multiple causes, DRR is a suitable place where CCA can be located (Kelman et al. 2016).

The recognition of the linkages between DRR and CCA has fostered a growing advocacy for the need for integration of the policy areas (Begum et al. 2014; Birkmann and Mechler 2015; Forino et al. 2015; Kelman et al. 2015). Prominent among the reasons for the resurgence in advocacy for integration is that the problems people face, such as disaster risk, are not defined or shaped in the same way in which departments and agencies are structured. Most of these complex and intractable problems cut across boundaries of separate authorities and functional jurisdictions. Thus, integration is viewed to carry the potential to link actors, organizations, and networks across sector boundaries (Shannon and Schmidt 2002).

Despite the linkages that have been established between DRR and CCA (common objectives, similarities, and benefits) and the development of tools (frameworks and models) to help the integration process, it is important to acknowledge the distinctions that exist between DRR and CCA that are potentially hindering integration. Disaster risk reduction addresses all types of hazards including hydrometeorological and geological ones, along with a wide range of risks, while adaptation only focuses on climate change-related risks (Schipper 2009). As Kelman et al. (2017) points out, there are hazards that are addressed by DRR that cannot be affected by climate change and therefore adaptation is irrelevant. Most importantly, each field focuses on risk-society dynamics through different actors and institutions, and with different time horizons and policy frameworks (Schipper 2009). van der Keur et al. (2016) view the involvement of multiple stakeholders with varying perceptions of risk and uncertainty as one of the major challenges to integration. According to Nalau et al. (2015), the distinctions are most pronounced in the ways the key concepts and terms are interpreted and used, leading to distinct differences in the ways research, policy, and practice are carried out.

However, maximizing the synergies between DRR and CCA is critical to achieve development outcomes that cannot be achieved by each field individually. The IPCC (2014) report stated that closer integration of DRR and CCA—along with the incorporation of both at local, subnational, national, and international development policy and practice levels—could provide benefits at all scales. Nalau et al. (2015) argued that the integration of DRR and CCA can result in practical benefits such as the rational use of resources, increased access to a broader range of expertise, sharing the growing international funding for adaptation, and embedding a forward thinking approach in DRR by considering longer time frames. To integrate DRR and CCA, priority must be given to establishing institutional linkages, particularly at the national level, by removing structural barriers, thus providing a mechanism for convergence of policies, planning, and programs (Mall et al. 2019).

The purpose of this article is to highlight the adverse effects of separating institutions for DRR and CCA as perceived by government officials within the Southern African Development Community (SADC) member states. No previous study on this issue has been done for the SADC region. Whereas the findings of this study might not be a representation of the situation in the region, it is envisaged that the identification and presentation of these adverse effects will provide further impetus on the rationale and justification for the integration of government institutions responsible for DRR and CCA within the SADC member states. In the following we briefly introduce the research methodology used in the study and then present and discuss the findings.

2 Research Context and Methodology

This study was conducted within the Southern African Development Community (SADC) (Fig. 1), an organization comprising 16 member states for the purpose of the development of the southern African region (Shams 2003). The member states are Angola, Botswana, Comoros, Democratic Republic of Congo, Eswatini (until April 2018 Swaziland), Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, Zambia, and Zimbabwe.

The study draws on 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 specifically, key informant interviews, and an online survey. A mixed method research design was applied to the study based on the premise that qualitative methods offer in-depth experience of individual perspectives, while quantitative methods provide generalization and precision (Creswell 2014). Specifically, the study applied a sequential exploratory mixed method design wherein 14 key informant interviews were conducted and the findings of the interviews were used to develop the online survey questionnaire (Johnson and Onwuegbuzie 2004; Creswell 2014).

A total of 40 respondents (14 face-to-face interviews, of which two respondents were female and 12 were male, and 26 online survey respondents) from nine SADC member states—Botswana, Eswatini, Madagascar, Malawi, Namibia, South Africa, Tanzania, Zambia, and

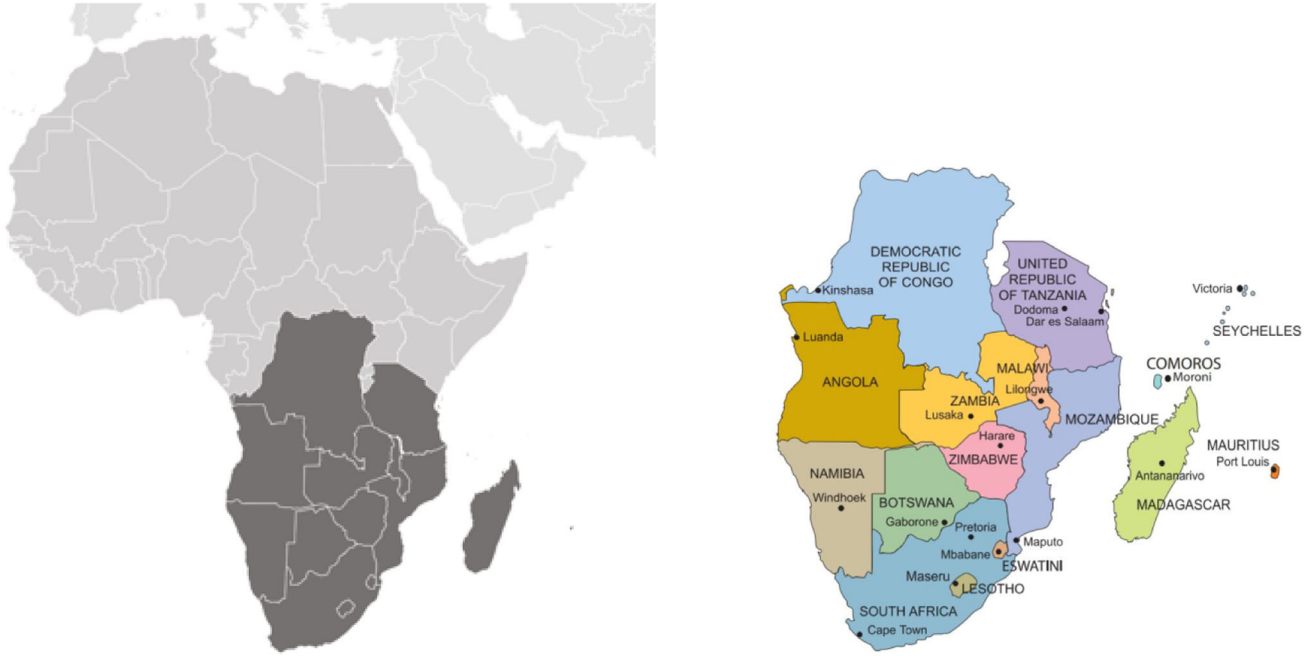

Fig. 1 Map of the Southern African Development Community (SADC) Region. *Sources* Authors and SADC (https://www.sadc.int/about-sadc/overview/)

Zimbabwe—participated in the face-to-face interviews and the online survey that took place between February and April 2016 (Table 1). Supplementary online data were collected between February and March 2019. No demographic data were collected for the online survey. Convenience sampling (Collins 2010) was applied to select respondents from South Africa, Botswana, and Eswatini to participate in the face-to-face semistructured interviews. Because there are diverse official languages spoken in the SADC region, the limitation of the study is that all interviews and the online survey were in English. This led to non-response to the online survey from countries where English is not an official language. The list of countries that participated in the study thus excludes Portuguese and French speaking countries in the region. It is therefore important that for future research, questionnaires are translated into all official languages used in the region in order to maximize participation from all countries.

All respondents were purposefully selected from government departments, ministries, or agencies responsible for DRR/DRM, and CCA/Environment authorities and/or meteorological organizations at both management and

Table 1 Breakdown of respondents in the Southern African Development Community study

Country	Face-to-face		Online questionnaire		Total/Country
	DRR	CCA/Environment/MET	DRR	CCA/Environment/MET	
Botswana	2	1	2	1	6
Eswatini	3	2	4	1	10
Madagascar			3	1	4
Malawi			1	1	2
Namibia			1		1
South Africa	3	3	4	1	11
Tanzania			1	1	2
Zambia			2	1	3
Zimbabwe			1		1
Total	8	6	19	7	40

DRR, disaster risk reduction; CCA, climate change adaptation; MET, meteorological organizations

technical/operational levels. Other government institutions such as hydrological services, geological services, and geophysical or climatological institutions were not considered for the study.

All interviews were recorded and transcribed verbatim and initially grouped into core thematic areas and patterns. Content analysis was used to analyze qualitative data and the data are presented thematically. Quantitative data were collected and analyzed online using QuestionPro. The program was chosen because it offered the benefits of collecting data online. Both closed and open-ended questions with Likert scales were used to collect quantitative data. The analysis of the findings as presented in the following section comprise descriptive statistics used to determine the relative prevalence and importance of different dimensions as suggested by the qualitative study (Creswell and Clark 2017).

3 Findings

This study sought to explore the major adverse effects of separating government institutions for DRR and CCA within the member states of the SADC region, as perceived by the participating government officials with the purpose of encouraging the integration of the organizations. Five major adverse effects that impede efforts to reduce disaster risk coherently emerged from the study: (1) duplication of services; (2) polarization of interventions; (3) incoherent policies; (4) competing for the same resources; and (5) territorial contests. Each of these effects as perceived by the respondents is presented and briefly discussed below.

3.1 Duplication of Services

The findings of the key informant interviews revealed that an effective implementation of measures to adapt to climate change implies that considerable risk of disasters will be reduced. Respondents were of the view that CCA activities such as vulnerability reduction depend to a large extent on disaster risk reduction approaches. Most respondents highlighted that whereas the situation is changing for the better, those involved in DRR and CCA hardly interact to understand what their counterparts are doing. The respondents indicated that DRR, CCA, and meteorology practitioners are engaged in similar activities, particularly dissemination of early warning information, but they hardly plan together or coordinate their efforts. Sixty-five percent (65%) of the online survey respondents indicated that they communicate with their counterparts only when "necessary," and 23% indicated that they communicate with their counterparts once in a while. Respondents were of the view that without knowing and understanding the mandates of the other departments, chances of engaging in similar activities are high. Poor or lack of communication between practitioners was identified as the main cause of duplication.

A sizable majority of respondents who participated in the online survey (80%) (Fig. 2) were of the view that poor communication and lack of coordination are the main factors driving the duplication of services. Only 20% of the respondents did not believe poor communication and lack of coordination play a role in the duplication of services. The following statement made during key informant interviews encapsulates some of the respondents' views on problems related to the duplication of services characterized by lack of coordination:

> Coordination becomes a nightmare as everyone is all over the place. As such something that can be achieved in 5 years can be achieved in 15 years. (Interview with CCA Official, South Africa, February 2016)

An example of the Disaster Management Agency and Meteorological division in different ministries, of not coordinating their efforts, with both sending early warning information using the same platforms, which becomes costly for the government, was cited as a classic example of services that are duplicated. However, some respondents did not consider duplication an issue. This group of respondents argued that each department or ministry has its own mandate and therefore a large number of people can be reached in a short span of time within the limited resources of government. The following statement made during key informant interviews captures the views of those who did not view duplication as an issue:

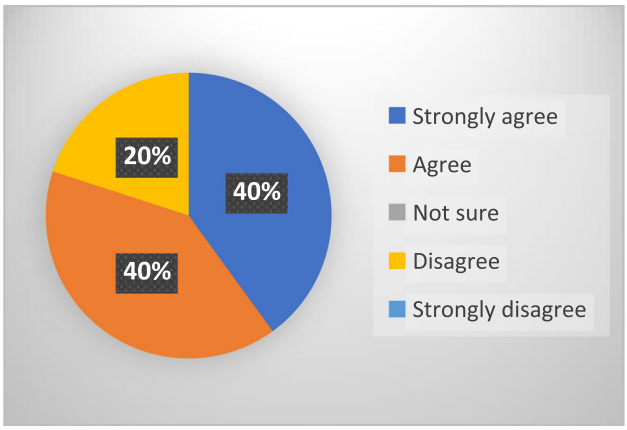

Fig. 2 Lack of communication between the practitioners of disaster risk reduction and climate change adaptation activities drives duplication. *Source* Online survey of respondents in the Southern African Development Community study ($N = 26$)

> In my view I don't see any duplication of DRR and CCA activities. In our country, the roles have been defined clearly as per legislation and in the National Policy. (Interview with Meteorological official, Eswatini, February 2016)

On the issue of the activities that respondents consider duplicated, respondents indicated that those in DRR and CCA are involved in vulnerability assessments, promoting conservation agriculture, urban planning, promoting livelihood diversification, ecological management, and early warning systems. While they are involved in these activities, they hardly plan together and coordinate their efforts. Generally, both interview respondents and online survey respondents concurred that duplication is a serious issue considering the lack of resources in SADC member states, the lack of complementarity in each other's work, and the lack of sharing important information on matters that cut across departments. Respondents suggested sharing of information, establishment of coordination structures for the different governmental role players, and joint planning of programs and activities as some of the issues that can easily be addressed to reduce duplication. Only 20% of the respondents indicated that they plan jointly with their counterparts, specifically for the distribution of early warning information, while 20% of the respondents had never interacted with their counterparts.

3.2 Polarization of Interventions

Respondents in this study understood polarization as having contrasting or different opinions, ideas, understandings, and even beliefs about the same issue. Respondents argued that, as a result of the different skill sets required for DRR and CCA and the fact that they are placed in different departments or ministries, practitioners in these departments have different understandings of the issues of disaster risk. The essence of this is highlighted in the following statement made during key informant interviews:

> There is polarization even though it is not sharply contrasting because the two disciplines do not interconnect. The practitioners in these two fields fail to understand that these two disciplines need to work together to make a difference in the communities they serve. (Interview with DRR official, Eswatini, February 2016)

Respondents argued that the main driver of polarization is the personalities and selfishness within the different government institutions. Disaster risk management practitioners who participated in this study were of the view that those in climate change are protective of their field because of funding opportunities associated with climate change, and this makes it difficult to integrate efforts. This group of respondents further argued that because there is no coordinating mechanism between the different institutions, and they do not share information, practitioners have conflicting ideas about what the other department is doing. The statement below from the key informant interviews captures some of the major drivers of polarization:

> The main drivers of polarization include failure to jointly develop policies, programs, strategies, and legal frameworks for CCA and DRR; lack of realization by the practitioners that the two are involved in similar activities and selfishness of the various line ministries to have control over financial resources. (Interview with DRR Official, Botswana, February 2016)

Online survey findings revealed that 80% of respondents held the view (as compared to 15% who did not) that polarization drives the departments or ministries to continue to work in silos, with each department focusing on its mandates. Five percent of the respondents were not sure whether this was the case.

Despite these differences, 90% of the online survey respondents held the view that to address the situation better coordination, collaboration, and a change of attitudes are needed, particularly of senior managers in the departments. Respondents emphasized that for each department to fully achieve its core mandate requires input from the other departments and therefore there is no room for egos.

3.3 Incoherent Policies

The findings of this study reveal that policies for DRR and CCA are perceived to be incoherent as a result of different locations and lack of coordination between the departments/ministries involved during the policy formulation. Some of the respondents, particularly those in the area of climate change were of the opinion that those in DRR are still response-based and that the function is carried out by the security cluster (Ministry of Defense, Civil Service, and/or Police). This makes it difficult to bring the two policy areas together as these institutions are not engaged in climate change whatsoever. The statement below from the key informant interviews captures the view of these respondents:

> There are a whole host of organizations which are involved in disaster response such as Defense Force and Police and they do not engage in climate change adaptation issues. So, the issue of integration can be very complicated. (Interview with CCA Official, Eswatini, February 2016)

Most participants in the online survey (70%), as opposed to 20% who did not agree and 10% who were not sure (Fig. 3), were of the opinion that the differences in the respective mandates, programs, and sets of measures on how to deal with climate change issues on the one hand and DRR issues on the other provided great obstacles when trying to develop coherent policies and strategies. This is despite the fact that there are extensive consultations when policies are reviewed. Respondents acknowledged that currently policies for DRR do not cover much on climate change adaptation, and the same is the case for CCA policies with respect to disaster risk reduction. In most instances, the policies just mention the other policy area without going into detail on areas of cooperation.

Importantly, 90% of the survey respondents thought that incoherent policies exacerbate other effects such as competition for resources and territorial contests. With most countries within the region reviewing their DRR policy and legislative frameworks, practitioners see opportunities for addressing climate change risks with a particular focus on adaptation actions in those frameworks. The respondents argued that the majority of the hazards that affect the region are hydrometeorological in nature and that therefore it makes sense to incorporate actions to address climate change risk in DRR policies and legislation.

3.4 Competing for the Same Resources

The majority of the respondents who participated in the online survey (81%) (Fig. 4) agreed that the separation and duplication of organizations for DRR and CCA compromises the effective use of resources, particularly financial resources in an era where most countries in the region are struggling economically. Respondents indicated that in the region resources are split between three entities, which share cross-cutting issues—disaster management

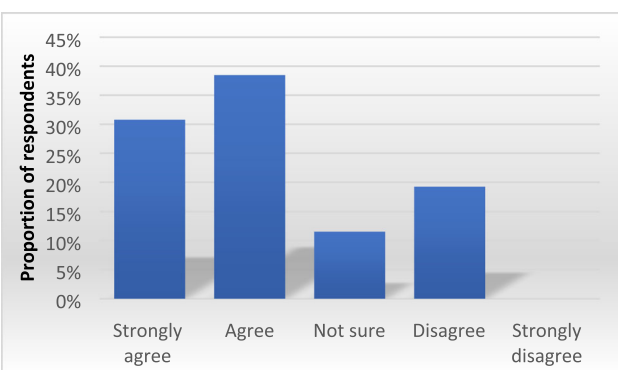

Fig. 3 Different mandates, programs, and measures are obstacles to developing coherent disaster risk reduction and climate change adaptation policies. *Source* Online survey of respondents in the Southern African Development Community study ($N = 26$)

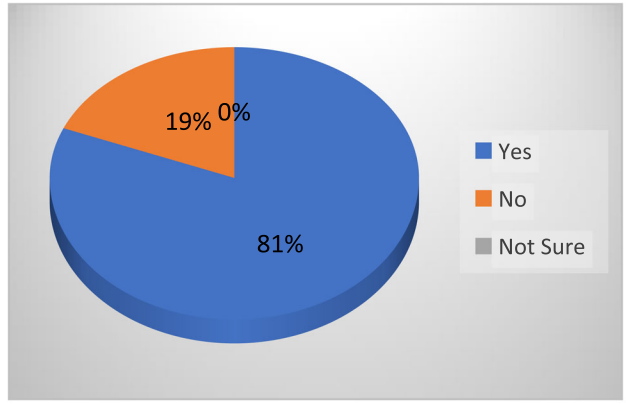

Fig. 4 Separation and duplication compromise the effective use of resources in disaster risk reduction and climate change adaptation. *Source* Online survey of respondents in the Southern African Development Community study ($N = 26$)

departments/agencies, meteorological services with their responsibility for early warning systems, and environmental affairs that drive national adaptation programs of action (NAPA).

In their responses, the respondents did not consider resources that are available in other sector departments that implement DRR measures. These respondents contended that splitting resources results in resources being thinly spread, and this subsequently leads to low impacts. As the following quote from key informant interviews suggests, "Resources are spread all over and we are not even making an impact" (Interview with DRR Official, Botswana), so it is apparent that there is a need to use the limited resources efficiently through coordination and cooperation.

Generally, the respondents cited financial resources as the main resource that the departments are competing for. Respondents argued that both organizations for DRR and CCA rely on the National Treasury/Ministry of Finance for funding similar programs. With both organizations approaching their Treasury for funding, some respondents see this as stretching government resources. In this regard, this group of respondents argued that placing DRR and CCA in the same department or ministry will maximize the benefits and reduce government expenditure. What is important in these findings is that 19% of respondents do not see the need to place DRR and CCA in the same department, but rather a need to improve communications, coordination, and the sharing of information to avoid duplication.

3.5 Territorial Contests

A large number of online survey respondents (79%) (Fig. 5) were of the view that there were no critical turf wars that affected the working relations of organizations

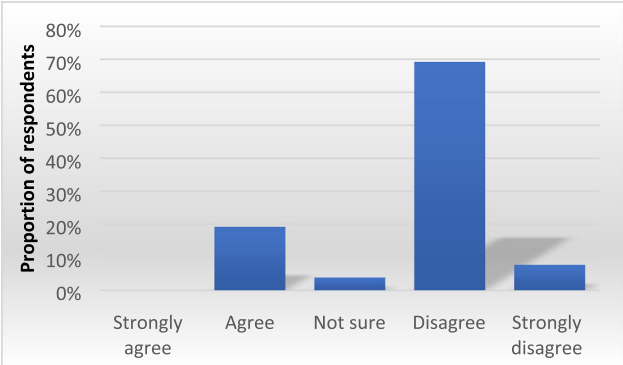

Fig. 5 Turf wars affect working relations in disaster risk reduction and climate change adaptation. *Source* Online survey of respondents in the Southern African Development Community study ($N = 26$)

for DRR and CCA, with merely 20% indicating that there were turf wars.

The majority of the respondents, and mainly those in the DRR field, argued that climate change came with a lot of opportunities, mainly funding, and as such those in the climate change arena tend to protect their turf. The following statement from the interviews with key informants captures this sentiment:

> Climate change and adaptation are buzz words and most government resources are channeled towards climate change. As disaster management we are probably the last to be allocated funds if there are any left. (Interview with DRR Official, South Africa, February 2016)

However, those in the climate change arena felt that their field is pure climate science and their main role is to provide information such as early warning messages. They see this as complementary rather than competing with those responsible for DRR. This is evident in the following statement from the interviews:

> With the collaboration and the relationship that we have with those in disaster risk management, there are no issues. We are cooperating and coordinating our efforts, we participate in forums and they participate in our workshops and they inform our strategies. In fact, we have benefited a lot from their processes and we are playing a crucial role in informing their processes with the information that we provide. (Interview with CCA Official, South Africa, February 2016)

Some respondents felt that the organizations work well even when they are separate, but that the biggest challenge is the personalities within the institutions. These respondents argued that some managers want to be seen as frontrunners and want to be seen as doing something and want all the glory, and this creates problems for junior officials. The respondents identified coordination as a serious challenge and suggested that to address the situation, coordination between institutions for DRR and CCA needs to be improved.

4 Discussion

The research findings of this study highlight five major adverse effects of having separate government institutions for DRR and CCA within the SADC member states—duplication of services, polarization of interventions, incoherent policies, competing for the same resources, and territorial contests. Generally, the participants understood that the effects of separating these institutions are hindering efforts to address issues of common interest. In most cases there was convergence between the views of the interviewees and the views of the online respondents. Most importantly the findings show convergence with the scholarly literature on integrating DRR and CCA.

On the issue of the duplication of services, the findings are in line with the views of Begum et al. (2014) who stated that the dispersion of efforts to reduce disaster risk through duplication of services brings lower output and may confuse those receiving the services. Functions such as early warning communication, for example, may belong to both DRR and CCA institutions, hence the need for alignment. Assessments after 2019 Cyclone Idai in Mozambique established that the two separate institutions for DRR and CCA used different color codes in early warning communication to communities. This can lead to confusion among the recipients of the information. Interorganizational integration may create platforms for information sharing and cooperation that leverage the expertise in each institution.

With regard to polarization, the literature argues that the presence of multiple players who are polarized reduces the ability of governments to adjust policies (Keefer and Knack 2003). It has been widely articulated that CCA has developed in parallel to the already existing practice of DRR, and as a result they operate in isolation. That means that various government organizations are often discouraged from including both CCA and DRR initiatives since this would require interministerial or interorganizational coordination and cooperation that in most cases is not seen as advantageous by the respective ministries or agencies (Birkmann and Pardoe 2014). As evident from the findings of this study, this has led to polarization, and organizations responsible for DRR and CCA measures focus on their departmental mandates and priorities.

This study has shown that differences in respective mandates, programs, and sets of measures on how to deal with climate change issues on the one hand and DRR issues

on the other provides great difficulty when developing coherent policies. This is despite the fact that practitioners are engaging with each other in the process of reviewing the current policies. The literature indicates that policy incoherence refers to contradictions within policy design, structure, and roles (Mutimba and Wanyoike 2013). Challenges to policy coherence may also emanate from the conceptual inconsistences within the disaster field where DRR, DRM, and disaster management may be incorrectly applied synonymously, yet operationally they all mean different things. These contradictions (both within and across sectors) causes policy design to become ineffective or not implemented. Incoherence occurs when policies deliberately or accidentally impair the effects of development policy or run counter to its intentions (Ashoff 2005). Policy incoherence can be assigned to four areas: (1) societal and political norms; (2) political decision making (divergences of political interests at the national level add complexity to political decision-making processes as a consequence of globalization and decentralization, and weaken development policy in the play of political forces); (3) policy formulation and coordination (shortcomings in policy formulation and in the structure and process of policy coordination, shortages of information); and (4) the conceptual area (increasing complexity of the development agenda, knowledge gaps, complexity of the development process) (Ashoff 2005).

With regard to competition for the same resources, the findings of this study are in line with other research, which suggests that the integration of DRR with CCA is globally recognized as a rationale to use resources efficiently to benefit both areas. Becker et al. (2013) found that duplication and separation of organizations for DRR and CCA is unfortunate, inefficient, and fertile ground for conflict over resources to implement similar activities. Similarly, Mitchell et al. (2010) stated that the duplication of efforts, administrative inefficiencies, and even competition among various groups not only hamper DRR and CCA efforts but also compromise the overall effective use of resources. Given that most, if not all, SADC member states are poorly resourced in terms of financial and human resources, there is urgency required in the integration process to ensure further inefficiencies are curtailed. The integration of CCA and DRR will reduce redundancy while simultaneously enhancing the value for money for the services offered by respective institutions to the recipient communities whose lives and livelihoods both CCA and DRR seek to protect. DasGupta and Shaw (2017) argued that in reality it is extremely difficult to separate issues of climate change as a hazard driver and hazards, as communities do not feel the impacts of natural hazards and climate change separately, and therefore the need for integration cannot be overemphasized.

Territorial contests play themselves out particularly in the form of silos and turf wars. The findings of this study underscore the importance of addressing territorial contests and underlying personality obstacles to ensure there is meaningful political will from the top echelons of the institutions running through to policy implementers. In addition, it is essential to ensure that dialogue between the two disciplines is owned and committed to by both fields. This is important, because it is insufficient to simply participate in each other's forums—what is needed is effective political will that follows through on efforts and resolutions made at these forums. Tactics for territorial contest might include withholding crucial information or using decision-making rights to shunt rivals' activities into low-profile tasks (Herrera et al. 2017). The concept of silos is synonymous with the barriers that separate work teams, departments, and divisions that are supposed to coordinate their efforts and work together rather than antagonizing one another.

For most of the respondents, the continued separation of DRR and CCA organizations hinders effective engagement of both communities in addressing issues of common interest. Poor communication or lack of communication was cited as one result of the disintegrated disciplines. For Begum et al. (2014), successful integration of DRR and CCA rests on the establishment of joint coordination and collaboration across sectors, stakeholders, institutions, and programs. Therefore, based on the study findings here, and findings in other similar studies cited here, this article argues for the need to step up efforts to improve interdisciplinary communication and coordination between those involved in DRR and CCA. Suggestions include promoting networking and collaborations between professionals from the two disciplines, which is expected to improve communication and information sharing. We argue that communication and joint planning provides opportunities for sharing knowledge and resources and saves governments much-needed resources. When deliberate steps are taken to improve communication between the practitioners in CCA and DRR, ultimately this will address the polarization that exists between the practitioners.

When government officials are offered platforms to network, collaborate, and engage, this may encourage cross-pollination of ideas, promote deliberations between policy areas and middle ground may be forged. In this regard, government officials must maximize the use of academic and research institutions in the regions to share knowledge, expertise, mutual beneficial engagement, mentoring, and skills transfer. They also need to participate in other established academic and practitioner networks such as the Southern African Society for Disaster Reduction (SASDiR), a community of practitioners for disaster risk reduction within the SADC region established in 2010,

which convenes biannual conferences in DRR. Moreover, academic institutions must support the professionalization of the career path of practitioners in disaster risk reduction linked to higher-level qualifications.

Although the results of this study are only directly applicable in the studied context, they illustrate the apparent need to integrate DRR and CCA to address disaster risk effectively and efficiently. This is important given the magnitude of the fragmentation of DRR and CCA structures that persists. Integration does not necessarily have to mean the merging of departments/ministries and/or agencies responsible for DRR and CCA. In order to address the effects identified in this article, officials from the different departments might need to cooperate, coordinate, or even collaborate on issues of common interest. This may be especially essential in those member states where the DRR function still lies within the Defense/Police ministries. Findings established by this study were that such non-civilian institutions by their militaristic nature posed challenges for integration. Integration of government institutions for DRR and CCA is important as it facilitates management of cross-cutting issues that do not correspond to the institutional responsibilities of individual departments. Additionally, integration of DRR and CCA may also need to extend beyond the two conventional communities to also include other government sectors whose mandates and activities may also be contributing to DRR and CCA, such as social welfare, water affairs, health, finance, and economic development.

While some adjustments from the present fragmented existence of the two sectors within SADC member states and at the regional level are necessary, consolidation and integration need to start at the global level through the UN processes of climate change, sustainable development, and DRR. Furthermore, the process of integration of the two disciplines needs to be a dualized approach, where best practices and strategies from individual countries and regions can be used to inform the global integration process. Likewise, processes at the global level would also be cascaded down to implementation level and will need to be conducted within each member state's context.

5 Conclusion

This study investigated the perceived adverse effects of separating government institutions responsible for DRR and CCA within the SADC member states from the perspective of the participating government officials. The findings revealed duplication of services, polarization of interventions, incoherent policies, competing for the same resources, and territorial contests as the major adverse effects. We believe that improvements in the integration (where integration is a continuum of cooperation, coordination, collaboration, and merging) of DRR and CCA can be realized when the effects of separating government institutions for the implementation of DRR and CCA are understood and minimized by those in the science, practice, and decision making communities. Highlighting these effects is important in advocating for the integration of DRR and CCA as they are found to impede efforts to reduce the risk from natural hazards and climate change coherently. The article argues that fragmented governance structures are unlikely to provide the capacity required to tackle problems such as disaster risk. Whereas DRR and CCA are two different policy areas, the perceived relationship between the two is changing as more people are realizing that the two are intertwined and not mutually exclusive. This study is the first to comprehensively highlight the adverse effects of having separate government institutions for DRR and CCA in the SADC region as perceived by the participating government officials. Future research can focus on factors that would enable the realization of integration and expand to also consider integration in other sectors that address disaster risk, such as health, water affairs, agriculture, and social development. Future research can also focus on the importance of understanding gendered perspectives on integrating DRR and CCA and ensuring gender balance among government officials and respondents.

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