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Mainstreaming climate adaptation into development assistance: rationale, institutional barriers and opportunities in Mozambique

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ABSTRACT

In Mozambique, weather extremes threaten development progress, while pronounced poverty aggravates the climate vulnerability of the population. With the country being a major recipient of official development assistance, Mozambique's development strongly depends on donor investments. Against this background, we aim to encourage the mainstreaming of climate adaptation into development assistance. An analysis of donor investments at a sub-national level showed that a significant proportion of development assistance was invested in climate-sensitive sectors in regions highly exposed to extreme weather conditions. Major damage caused by weather extremes motivates a stronger integration of climate policies into development assistance. Although Mozambique has a supportive legislative environment and climate awareness among donors was found to be high, the limited institutional capacity restricted mainstreaming initiatives. Given major barriers at the national level, bilateral and multilateral donors are able to play a key role in fostering mainstreaming in Mozambique.

1. Introduction

Extreme weather conditions occur with great frequency and severity throughout south-eastern Africa and are likely to increase in both respects with future climate change (Baettig et al., 2007; IPCC, 2007a; Lal, 2001; New et al., 2006). Current weather extremes inducing droughts, floods and cyclones have already caused serious disasters in Mozambique, hampering the country's development progress. With Mozambique being a major recipient of official development assistance (ODA) (World Bank, 2010), donor investments strongly influence the country's development progress. Because the linkages between climate and development progress have become more apparent in recent times (for an overview see Markandya and Halsnæs, 2002), this paper seeks to encourage the mainstreaming of climate adaptation into development assistance, i.e., the integration of climate policies into decision-making for development assistance, in the context of Mozambique. It first strengthens the rationale for this mainstreaming process and then identifies institutional barriers and opportunities at the donor–government interface.

At the core of the paper lies the concept of climate vulnerability, referring to "the degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes" (IPCC, 2007b). The paper starts from the viewpoint of social vulnerability (Adger, 1999) which links individual and collective vulnerability with public policies being shaped by the specific institutional setting in which it evolves. The institutional setting was particularly critical when Mozambique was hit by

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a major flood in 2000, one of the most serious climate-related disasters in the past two decades (EM-DAT, 2009). Causing tremendous destruction and affecting 4.5 million people, the flood revealed that in spite of a decade of political stability and economic growth, awareness and institutional capacity to deal with climate risks were still limited. Nevertheless, it also served as a starting point for newly emerging activities and policies to improve the management of climate risks.

2. Why mainstream climate adaptation into development assistance?

The adverse effects of climate have been shown to reverse human progress and to make development goals unattainable (Magrath, 2006; ODI, 2004; Simms and Reid, 2005; Sperling, 2003). Successful adaptation to climate variability and change (here referred to as climate adaptation) would help to address this challenge. As climate variability is projected to intensify under climate change in many regions (IPCC, 2007a), climate adaptation is likely to become increasingly important in ODA and other activities aimed at eradicating poverty (e.g., Huq et al., 2003; Mirza, 2003; Sperling, 2003). In operational terms, the climate perspective on mainstreaming would encourage development assistance that reduces structural causes of climate vulnerability, while the ODA perspective would seek to minimise climate risks for development goals.

Mainstreaming, however, challenges decision-making for development assistance in five major respects (e.g., Agrawala, 2005; Huq et al., 2006; IDS, 2006; Sperling, 2003). Firstly, donor and national institutions are often not yet set up to encourage mainstreaming. A lack of communication and coordination, poor information dissemination, incoherent mandates and a shortage of funding all impede mainstreaming. Secondly, climate and development concerns are normally tackled on different spatial and temporal scales and respond to different priorities. Overcoming these differences is especially important with respect to the long-term effects of current development activities on climate vulnerability and vice versa. In this context, decision-makers face particular uncertainties inherent in the modelling of future changes in climate and socio-economic conditions. Thirdly, the effects of climate come on top of other environmental, gender or health care issues. The potential excess of mainstreaming issues may paralyse development planning and implementation. Fourthly, while attempts are being made to open up developmental decision-making for the newly emerging issue of adverse climate, climate adaptation needs to further broaden its scope by overcoming technology-centred approaches. Fifthly, mainstreaming may shift existing funding patterns. There is concern that scarce funds dedicated to climate adaptation could be diverted into more general development activities (Yamin, 2005). But at the same time, funding for climate adaptation could also divert money from ODA intended to address challenges seen as more urgent than climate risks, including sanitation, education and health care (Michaelowa and Michaelowa, 2007). In view of these challenges, little attention has been paid to the impact of climate on development goals, even in domains that already suffer from adverse effects (Klein et al., 2007). However, mainstreaming is recognised as a prerequisite for development progress, and initiatives are currently being consolidated at an international level (e.g., OECD, 2009; World Bank, 2008).

In the example of Mozambique, weather extremes in the early 2000s caused destruction with annual recovery costs of 16–47 million USD at the national level (GoM, 2005a). This destruction contributed to difficulties in achieving important development goals (GoM, 2005b). In particular, the overarching goal of reducing extreme poverty and hunger was undermined, as the negative weather effects reduced people's livelihood assets and impinged upon food production (Chigwada, 2004; SETSAN, 2005). Given that Mozambique is one of the poorest countries in the world, mainstreaming offers important opportunities for development progress.

3. Role of institutions

Effectively performing institutions are central to the reduction of climate vulnerability and are an important element in advancing a country's development. Broadly defined, institutions are structures of social order designed to organise human interactions at all scales (Ostrom, 2005). Institutions aiming to improve climate adaptation need to be able to anticipate and prepare for climate risks. The question arises as to what constitutes the capacity of institutions to perform climate-specific functions, solve climate-related problems and manage adaptation to adverse climate effects.

In this paper, institutional capacity is understood as the ability of people, organisations and society to manage their climate concerns successfully. Based on this, institutional capacity extends beyond individual experience, knowledge and technical skills and depends on the organisational environment in which people apply their skills (Fukuda-Parr et al., 2002; OECD, 2006). The broader enabling environment of institutional frameworks, power structures and the legal environment in turn shapes the functioning of organisations. The enabling environment also reflects the societal context in which mainstreaming processes take place and can create opportunities for organisations and people to engage in actions.

In this sense, adaptive institutions rely on the capacities at the three levels – individuals, organisations and the enabling environment – to foster climate adaptation and integrate adaptation into development assistance. A supportive organisational environment between donor and national institutions is required to integrate and operationalise the individual skills fully by promoting cooperative processes, designating clear mandates as well as generating the necessary climate and development data. The potential of mainstreaming for improving development progress lies in shifting discourses and paradigms towards the recognition of the necessary integration of climate adaptation measures into the planning and implementation of development assistance.

4. Interlinkages between climate and development assistance in Mozambique

Official development assistance constitutes about a quarter of the Mozambican gross national income (OECD, 2010) and acts, therefore, as an important development driver. To analyse the

climate-ODA nexus in Mozambique, we determine which proportion of ODA investments is dedicated to climate-sensitive sectors. Climate sensitivity describes the degree to which an activity, sector or a system is affected by climate stimuli (IPCC, 2007b).

In our analysis, we concentrate on sectors which have already been affected adversely by droughts, floods and cyclones. They encompass the sectors of infrastructure, agriculture and food security, water, health and natural resource management (SETSAN, 2005; INGC, 2006). Activities in those sectors would, thus, need to consider climate risks and related multiple sectoral interlinkages in their design and implementation. For example, road infrastructure damaged by floods and cyclones was revealed to have been climate-sensitive. Even though they may be able to resist some of the destructive effects if constructed according to safety standards, roads may increase the vulnerability of the local population in promoting settlement in areas which are already, or may become, exposed to floods and cyclones, such as parts of the Beira region (SETSAN, 2005).

The sectoral categorisation provides a broad overview of ODA investments which could be directly affected by climate risks. Other sectors such as education, capacity building or governance are, in contrast, considered to be less directly affected. In practice, however, the suggested divide between directly and indirectly affected sectors rather constitutes a transition zone. For example, education projects would not generally be climate-sensitive, but the school attendance of food insecure people largely depends on food availability and supply – which may well be affected by climate-related events.

We use the project objectives provided in the ODAmoz (2009) database to identify the climate-sensitive ODA investments of five main donors with a long-term commitment, including the World Bank, the European Union, the United States, Denmark and the United Kingdom accounting for 59% of total gross ODA in 2006 (OECD, 2010). The sector of the OECD's Development Assistance Committee (OECD/DAC) is used to derive the overall project objective if project descriptions do not yield sufficient details. Acknowledging that ODA investments vary over time, we calculate average annual budgets by dividing a total project budget by the number of months in which it is implemented. All projects that have been implemented in a period including the year 2006 are covered, referring to the institutional analysis outlined in Sections 5 and 6. If not all objectives of a selected project are climate-sensitive and no breakdown of the budget according to the objective is available, the total budget committed to this project is included in the analysis.

As a result, the climate-sensitive ODA budget of the five main donors amounted to about 248 million USD which constitute 36% of their total gross disbursements to Mozambique in 2006 (OECD, 2010). Specific investments in infrastructure, agriculture and food security made up 76% of the climate-sensitive ODA from four of the main donors. As an exception, the United Kingdom dedicated all climate-sensitive investments to the management of natural resources. However, these investments accounted for less than one percent of the total climate-sensitive ODA from the five main donors. The significant proportion given above reflects the greater investment that these sectors require as compared to, for example projects promoting sustainable water use or natural resource management. To consider only the infrastructural, agricultural and food security sector would yield a more restrictive perspective on the climate sensitivity of ODA investments. It indicates some uncertainties related to the sectoral categorisation and considerations of project budgets. Nevertheless, the more restrictive analysis still reveals major investments potentially threatened by extreme weather conditions.

We refine the portfolio analysis by spatially disaggregating the climate-sensitive investments to a sub-national level, recognising the spatial differentiation of current exposure to extreme weather conditions (SETSAN, 2005). For this, the respective development activities are attributed to the highest resolved administrative unit indicated in the project description or based on the targeted sectors, for example coastal zone management. Investments committed on the national scale are evenly distributed among the 10 provinces. This may overestimate funding for the Maputo province which has the smallest number of districts. However, as the province includes the capital city with the highest density of people, roads, water and sanitation infrastructure, it is assumed that ODA projects are likely to invest a high proportion of the budget into the Maputo province.

The sub-national analysis shows that the majority of climate-sensitive ODA in 2006 was invested in the three provinces of Zambézia, Sofala and Maputo (Fig. 1 and Table 1). Given the partially high exposure of these provinces to current weather extremes (Table 1), the risk of ODA deliverables being adversely affected becomes evident. For example, the European Commission, one main donor in Zambézia, mainly invested in road infrastructure in this province. Important constructions such as the Caia Bridge and Namacurra Road are, however, positioned in districts highly exposed to cyclones, with some of them also exposed to floods. Similarly, the World Bank Railways and Ports Project was implemented in Maputo, Nampula and Sofala where the majority of districts are highly exposed to cyclones or floods.

Major climate damage in regions that received large climate-sensitive ODA investments (Table 1) clearly demonstrates the insufficient adaptation to the recurring extreme events. Recognising the need for better integration, some donors have targeted adaptation interventions, for example in the areas of early warnings, climate-resistant infrastructure and adaptive technologies (ODAmoz, 2009). However, these interventions follow individual adaptation projects since they have not been designed within one comprehensive climate adaptation framework. This is why each of them only captures specific aspects of climate vulnerability in a distinct region. Most ODA investments do not take into account current or future climate risks and climate-resilient development is generally not assured. As several development projects have the potential to integrate climate adaptation into their design, the following sections outline reasons why mainstreaming is restricted and discuss opportunities to overcome these barriers.

5. Institutional barriers to mainstreaming

Referring to institutional challenges for mainstreaming as outlined in Section 2, the following section presents key

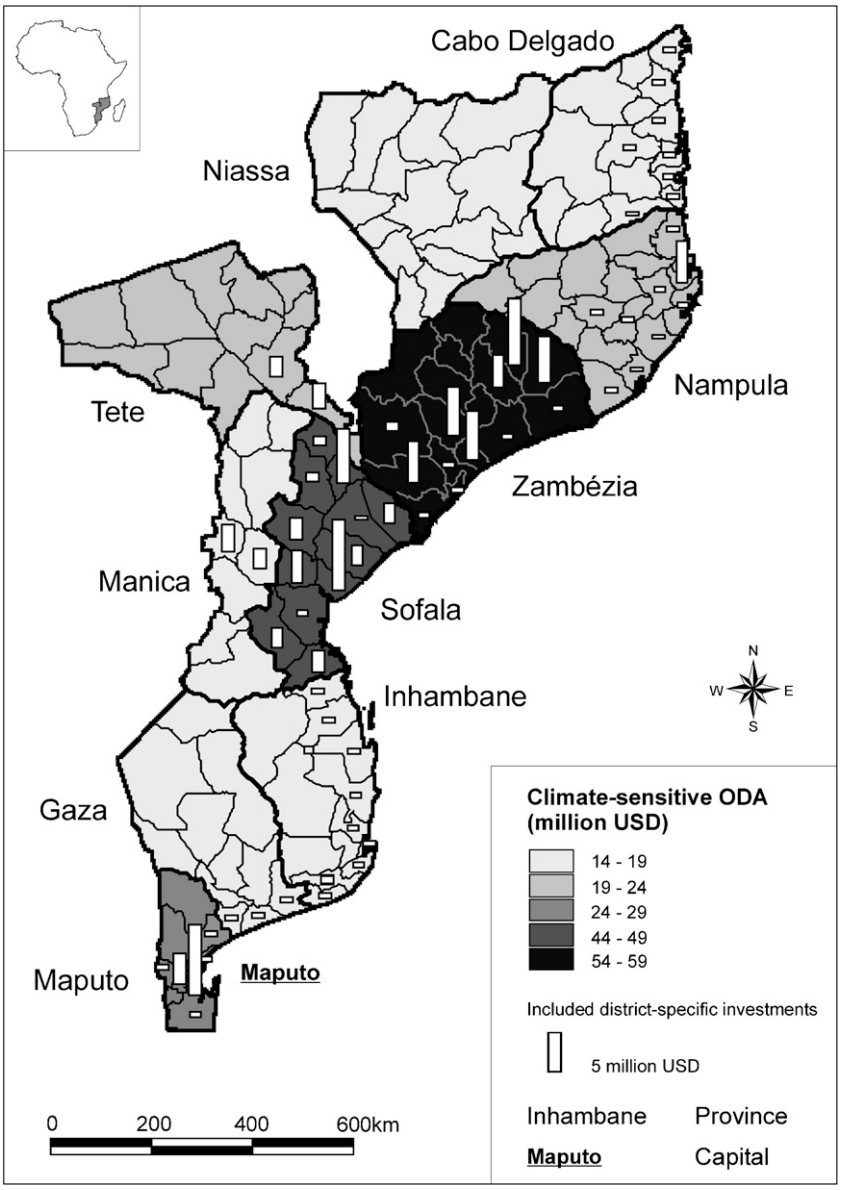

Fig. 1 – Sub-national distribution of average annual climate-sensitive ODA in 2006 from five main donors: the World Bank, the European Union, the United States, Denmark and the United Kingdom. Data source: ODAmoz (2009).

institutional barriers to incorporating climate adaptation into development assistance in Mozambique. The results are based on expert consultations held as semi-structured interviews. Experts in Mozambique and Europe were identified by chain referral sampling and by screening the climate relevance of institutional structures in sectors which are involved in the planning and implementing of ODA activities. Reflecting the fact that experts may prefer to refer to colleagues who hold a similar opinion, the institutional screening complemented the chain referral sampling to capture the diversity of opinions. We systematically compiled the findings in an institutional network diagram to identify key positions and responsibilities. This approach allowed us access to the climate-related development community and enabled the efficient targeting of key experts.

We invited 58 key experts to participate in the interviews in 2006, with a balance between international and national experts. 31 of them ultimately participated representing 24 institutions. They involved the positions with the highest institutional responsibilities in key institutions at the donor-government interface. Important positions included the international and national focal points for climate change and leaders of disaster risk management units. The experts interviewed engaged strongly in the climate discourse and participated regularly in related meetings at international and national level. Overall, 13 experts were associated with bilateral and multilateral donor institutions, four worked in international developmental, humanitarian or environmental networks and 13 experts represented national governmental or academic institutions.

Table 1 – Average annual climate-sensitive ODA in 2006 from five main donors (Data source: ODAmoz, 2009), exposure to current weather extremes (SETSAN, 2005) and related recovery costs in 2002–2005 (GoM, 2005a).

Provinces	Climate-sensitive ODA (million USD)	Proportion (%) of districts highly exposed to			Recovery costs (million USD)
		Droughts	Floods	Cyclones	
Zambézia	55.9	0	19	69	11.8
Sofala	46.8	25	67	50	6.9
Maputo	27.1	75	63	0	20.4
Nampula	20.0	17	0	78	14.9
Tete	19.3	50	17	0	9.9
Manica	18.8	44	22	0	3.9
Inhambane	16.0	21	7	100	12.1
Cabo Delgado	15.2	13	0	0	6.4
Gaza	14.4	73	64	0	9.1
Niassa	14.1	0	0	0	2.2
Total	247.5	27	22	35	97.6

The experts interviewed mainly represented the agricultural, water, rural planning and environmental sector. These sectors have been directly impacted by extreme weather conditions, so the experts were convinced that their participation would benefit the inter-institutional networking and related knowledge transfer. In contrast, participation from the health, education and consultancy sector remained limited due to, for example personnel fluctuations, reservations or a lack of interest. Climate-relevant activities in the health and education sector were strongly related to the sectors covered in the expert interviews. Therefore, we assume that perceptions captured reveal the diversity of prevailing opinions. Our experience in the expert interviews already indicates some of the dynamics and barriers inherent in the institutional setting in Mozambique. The personnel fluctuations we faced in initiating the interviews may significantly influence institutional continuity and capacities to design and implement activities. Moreover, if personnel in important positions are involved in oversized tasks, their capacities may easily become strained. To deal with some of the uncertainties resulting from this situation, we repeated the consultations with 25 key experts in 2009. The results reveal persistent patterns in the main barriers.

During the interviews, the experts were asked to indicate the five most important barriers to mainstreaming. The experts' responses range across all three levels of institutional capacity: the individual and organisational level as well as the enabling environment. The level of perception is evaluated according to the number of experts identifying a specific barrier as being most important. A barrier receives the highest perception level (+++) if more than two-thirds of the experts highlighted it as the main barrier, while the medium perception level (++) is given if between one and two-thirds of the experts identified a barrier. Less than one-third of expert identifications result in the low perception level (+). We find that perceptions are fairly consistent among both international and national experts, but differ significantly between the two groups. They are, therefore, presented (Table 2) and discussed accordingly. Overall, the barriers are not entirely climate-specific, but also extend to development barriers. The following sections outline the most important barriers at each institutional level.

Table 2 – Main institutional barriers to mainstreaming climate adaptation into development assistance as perceived by international and national experts. Level of perception: +++ high, ++ medium, + low. Source: Key expert consultations.

Institutional barriers to mainstreaming	Perception of experts	
	International	National
Individual level		
Lack of human resources within relevant institutions	+	++
Organisational level		
Insufficient data and information availability	++	+++
Weak data and information management	++	++
Inadequate data and information dissemination	++	++
Erosion of institutional memory	+	+++
Enabling environment		
Lack of inter-institutional coordination and communication	+++	+++
Gaps and overlaps in institutional mandates	+++	+
Short-term development goals are given a higher priority	++	++
Scarce sources of adaptation funding	+	+++
Lack of communication with and participation of local communities	+	++

5.1. *Individual level*

Addressing climate vulnerability requires human resources with appropriate levels of climate-specific skills and capacity to network and cooperate on climate issues. These resources and skills are important for assessing climate vulnerability as well as for formulating related strategies and development targets. Most national experts highlighted the shortage of human resources as an important barrier. This echoed the limited availability of skilled personnel with only a few thousand Mozambicans holding a university degree (Stasavage, 1999). Moreover, limited incentives in the national public sector were frequently mentioned by the experts as contributing to the shortage of skilled staff in the most climate-relevant institutions such as the National Meteorological Service (INAM) or the National and Regional Water Authority (ARA).

5.2. *Organisational level*

The limited data collection and information management in Mozambique was identified by the majority of both international and national experts as a main barrier to mainstreaming. This has two major reasons. Firstly, the national climate data network is weak partially due to war-related damages and inadequate spatial coverage. Secondly, there is a lack of clear hierarchies and decision-making centres for providing consolidated data and information (INGC, 2006). For example, the forecasting systems in the areas of meteorology and food security are limited in scope as they are not integrated into a single forecasting system to ensure adequate conclusions and initiatives. Similar to other countries in Sub-Saharan Africa (UNFCCC, 2006), therefore, Mozambique has limited capacity to disseminate climate information timely for planning purposes and for responding to extreme weather events. As a result, decision-makers likely adopt development interventions without directly considering the effects of extreme weather events (IRI, 2006).

Moreover, the majority of national experts highlighted the eroding institutional memory. This clearly hampers the continuity of institutional processes. For example, three key experts involved in preparing Mozambique's Initial National Communication to the United Nations Framework Convention on Climate Change (UNFCCC) are no longer available for further strategy development, since they left the Ministry of Coordination of Environmental Affairs (MICOA) to work with other institutions or went abroad.

5.3. *Enabling environment*

With respect to the enabling environment, almost all experts identified a lack of coordination and communication as a major barrier. Moreover, the majority of international experts also pointed out gaps and overlaps in institutional mandates as impeding factors. The relevant Mozambican institutions have overlapping mandates and sectoral competencies creating conflicts and slow responses in the case of natural disasters (INGC, 2006). In addition, important ministries, for example the Ministries of Education as well as Planning and Development, lack clear focal points for the environment. Instead, one or several contact persons attend meetings relating to environmental concerns. The resulting lack of continuity together with the limited awareness and personal capacity were reported to limit knowledge sharing significantly.

This weak inter-institutional cooperation and communication together with the lack of institutional memory has hampered governmental processes for the approval of documents. It took several years, for example for the Initial National Communication, the National Adaptation Programme of Action (NAPA) and the National Capacity Self Assessment to be submitted to the UNFCCC. This delay was particularly disadvantageous since the NAPA identified urgent adaptation needs (MICOA, 2007) which could not be addressed immediately even though resources for implementation were available under the UNFCCC Least Developed Countries Fund (LDC Fund). In addition, limited effectiveness and vested interests influence governmental procedures in Mozambique (Kaufmann et al., 2007). A lack of transparency impinges on budgetary processes, regulations and policy implementation and impede decision-making and fiscal planning for adaptation.

Furthermore, experts reported that limited financial resources represented a major barrier, though this was primarily noted by the national experts. However, a distinction needs to be made between the actual existing means for climate adaptation and access to these resources. Gaining access to existing financial resources for adaptation is a complex and lengthy process for all African countries (UNFCCC, 2006). Therefore, increasing institutional capacity is necessary to prepare project proposals.

6. Institutional opportunities for mainstreaming

As shown in the previous section, each of the three levels of institutional capacity reveals different mainstreaming barriers. Next, we present specific opportunities identified through the expert consultations and literature review. Planning and implementing climate adaptation for development assistance is not only shaped by bilateral and multilateral donors, but also depends on national development planning. The opportunities focus, therefore, on donors and the Government of Mozambique (GoM). While some barriers can be addressed by either the donors or the GoM, certain opportunities can be seized in partnership. The options for mainstreaming are presented in an actor-oriented way to facilitate the recognition of specific opportunities and collaborative actions.

6.1. *Individual level*

6.1.1. *Bilateral and multilateral donors*

Donor initiatives have helped in staff training at two important national institutions: INAM and the Eduardo Mondlane University. These two institutions play a key role in collecting, processing and disseminating climate data. INAM benefited from the training of local scientists, meteorologists and maintenance people in the period 2002–2006, so they can now better manage the national weather service

system and distribute meteorological data. In the educational sector, the United States Agency for International Development, the University of Port Elizabeth, the University of Washington and the Seattle Partnership Project on Interdisciplinary Marine Studies established two Sub-Saharan Africa Coastal Initiative Groups. They provide opportunities for academics from the Eduardo Mondlane University in Maputo to participate in research on the impact of climate on coastal zones.

6.1.2. *Government of Mozambique*

The GoM has created basic individual capacity for assessing climate vulnerability and formulating adaptation strategies. This basic capacity could be strengthened further. The stable economic growth at the national level together with improved access to climate adaptation funds at the international level would allow for the allocation of resources to train further personnel in ministries and other national institutions and to hire new skilled staff for planning and implementing national adaptation strategies.

6.1.3. *Partnership between GoM and donors*

The Board for International Food and Agriculture Development, the United States Agency for International Development and African stakeholders jointly responded to the frequently expressed barrier of an insufficient number of scientists with strong capabilities in formulating and carrying out agricultural research (Skelton et al., 2003). The team designed specific programmes to train scientists at the National Agricultural Research Institute. With agriculture being one of the most vulnerable sectors (SETSAN, 2005), such individual capacity building plays an important role in integrating climate adaptation into development concerns.

6.2. *Organisational level*

6.2.1. *Bilateral and multilateral donors*

The organisational capacity for managing climate risks was strengthened by a project on disaster risk management and its institutionalisation at the regional and local level supported by the German development cooperation (Bollin et al., 2005). One central initiative was the creation of local committees for disaster risk management responsible for data collection and dissemination, early warning, transport and evacuation measures. The local level structuring, thereby, included a close collaboration with INAM and ARA at the national level. Being two of the most climate-relevant Mozambican institutions, the improved coordination and communication will also benefit data and information management for other climate and development concerns.

6.2.2. *Government of Mozambique*

Resources are available under the Global Environment Facility to advance the Second National Communication to the UNFCCC. These resources would help in restoring the national institutional memory which is essential for the implementation of the NAPA (MICOA, 2003). In this context, it would be important to integrate new experts to assess climate vulnerability and adaptation options for those sectors not included in the Initial National Communication, for example health, education and fisheries.

6.2.3. *Partnership between GoM and donors*

The Mozambican government prepared the National Statistical Development Strategy supported by the multi-donor Trust Fund for Statistical Capacity Building. It provides a valuable framework for fully integrating the available climate data, seasonal forecasts and early warning systems to facilitate climate-informed development. For this, forecasts and early warnings are available at the regional and national level, for example the Southern African Regional Climate Outlook Forum, the national food insecurity monitoring by the Technical Secretariat for Food Security and Nutrition and the Famine Early Warning System Network (FEWS NET).

Moreover, a consortium of national and donor institutions, including the National Institute for Disaster Management, the Eduardo Mondlane University and FEWS NET, assessed the potential impact of and responses to scenarios for floods, cyclones and droughts in the Limpopo basin (INGC et al., 2003). The resulting Limpopo Atlas provides a comprehensive source of information for disaster preparedness on the scale of a complete river basin serving as a model for data collection and dissemination efforts. Finally, the Netherlands Climate Assistance Programme (1996–2008) stimulated the stronger involvement of policy makers, scientists and the population in the climate adaptation debate and assisted the Mozambican government in preparing, implementing and evaluating its policy in relation to climate adaptation.

6.3. *Enabling environment*

6.3.1. *Bilateral and multilateral donors*

Mozambique is a participant of the 2005 Paris Declaration on Aid Effectiveness which gives impetus for budget support. Budget support provides opportunities for advancing environmental considerations by offering the prospect of increased funding through the budget, strengthening budgetary processes within MICOA and increasing ownership over environmental spending plans. Nonetheless, project-type support plays a key role in Mozambique (GoM and PAP, 2006). In addition, assistance under the Global Environmental Facility to develop NAPA is a key funding vehicle for adaptation. Besides funding for preparing its NAPA under the LDC Fund, Mozambique has received further funding under the Strategic Priority on Adaptation and the Special Climate Change Fund. Improving coherence and identifying synergies between these international initiatives would be an important step without necessarily developing new instruments.

Coordination on adaptation implementation may be undertaken under the Development Partners Group in a working group at a technical level. Coordination for climate adaptation is, however, only effective if it avoids gaps and duplications (Killick et al., 2005). For this, the Country Analytical Work platform provides experience on policy dialogue, country strategies and operational aspects, while the database ODAmoz enables the tracking of bilateral and multilateral donors' activities. To increase awareness of adaptation measures, a new category for adaptation could be created under the targeted sectors following an OECD/DAC

initiative to identify projects in support of the Rio Conventions (so-called ''Rio Markers'').

6.3.2. *Government of Mozambique*

Stable political conditions in Mozambique (Kaufmann et al., 2007) have created a suitable environment for considering newly emerging policy issues. Mozambique has made considerable progress in integrating climate concerns into national development planning as demonstrated in its Poverty Reduction Strategy Paper, the current 5-Year Plan and Agenda 2025 (GoM, 2003, 2006, 2010). However, it performed poorly among 19 countries subject to evaluations of their Poverty Reduction Strategies on the integration of climate adaptation (Kramer, 2007). Mozambique's environmental assessment legislation is conducive to the mainstreaming of climate adaptation, though implementation capacity has been identified as a limiting factor (CIDA, 2004). This is why international support remains important for implementing adaptation measures.

Strengthening environmental units in all relevant sectors would foster institutional coordination by improving networking and organisational capacity building. Specialists within the environmental units who are able to identify the sector-specific effects of climate-related events and develop appropriate adaptation strategies are crucial for strengthening the capacity to address climate risks effectively. Given limited resources for specific adaptation measures, enhancing synergies with the other Rio Conventions would be an action beneficial to increasing the effectiveness of existing resources. Here, the National Capacity Self Assessment process constitutes a key opportunity for creating synergies since it considers cross-cutting issues among the Rio Conventions and links to other socio-economic issues (UNFCCC, 2005). MICOA has undertaken valuable efforts to coordinate the work among the Rio Conventions (MICOA, 2006). Even though MICOA is not a ministry with a broad mandate as Sperling (2003) suggested as a prerequisite, the communication and coordination among the Rio Conventions has advanced considerably since all three national focal points have been based at MICOA.

6.3.3. *Partnership between GoM and donors*

Besides international frameworks for mainstreaming adaptation, donors may make use of the opportunity of developing new country strategies for Mozambique to plan better for climate risks (GoM and PAP, 2006). For example, the United Nations, a major partner in assisting the GoM in disaster risk management, aligned the strategic objectives of its Development Assistance Framework (UNDAF) for 2007–2009 (UNDAF, 2007) with the Poverty Reduction Strategy. Supporting Mozambique in reducing poverty, UNDAF includes approaches for efficient disaster prevention, preparedness and response options. Since there is no national strategy in place for integrated disaster risk management, UNDAF significantly increases the national risk management capacity.

An important entry point to advance the implementation of climate adaptation would include considerations for ensuring the integration of climate risks across all climate-sensitive sectors, for example agriculture, health and infrastructure in Mozambique's ''External Aid and Cooperation Policy''. In addition, a clear aid policy statement from the GoM indicating preferences for receiving aid in the form of programmatic, project and technical assistance would help to set priorities for climate-informed development (GoM, 2006; Killick et al., 2005).

Stronger coordination between project mainstreaming under the Development Partners Group and budget mainstreaming under the Programme Aid Partnership (PAP) is an important mechanism to complement adaptation planning and implementation. For example, lessons learnt from existing ODA interventions that specifically incorporate climate adaptation could assist the further development of vulnerability indicators under the PAP's monitoring framework (Batley et al., 2006). Another opportunity for enhancing the policy dialogue on mainstreaming is strengthening the current environment-specific Sector Working Group (SWG). Up to now, environmental governance has been narrowly defined and has been still strongly associated with MICOA's activities. Moreover, the environment SWG, if integrated more strongly with other regular SWGs on agriculture, roads, natural disasters and food security, would provide further opportunities for mainstreaming climate adaptation.

Finally, non-governmental organisations, international networks and the civil society are often instrumental in ensuring that climate concerns are on the national policy agenda. They have been already actively undertaking important adaptation activities. For example, CARE International integrated climate change adaptation into its development activities in Mozambique, while the Mozambican Red Cross supported by the Red Cross/Red Crescent Climate Centre contributed to disaster preparedness at the national and local level. Involving this expertise in the planning and implementing of adaptation measures would foster significant long-term prospects for mainstreaming.

7. Conclusions

This paper laid out a strong rationale for mainstreaming climate adaptation into development assistance in Mozambique. An analysis of donor investments at the sub-national level showed that Mozambique received substantial investments in climate-sensitive sectors in regions that are highly exposed to weather extremes. Current recovery costs underline the fact that the effects of weather extremes have already hampered development. Moreover, future climate change will likely even increase the challenges, meaning that integrating adaptation measures into development initiatives is important to safeguard existing and future development progress. Contrary to this argument, however, mainstreaming was found to be still in its early stages. Adaptation efforts have been limited to stand-alone projects mainly in the agricultural and infrastructural sector, reflecting that current climate risks have not been systematically integrated into the design of ODA projects. Instead, each of these projects focused only on specific aspects of climate vulnerability in a distinct region.

Expert interviews in climate-relevant sectors revealed country-specific barriers and opportunities at the donor–

government interface. Although the legislative environment in Mozambique is conducive to mainstreaming climate adaptation, the experts identified barriers at all institutional levels, from individuals and organisations to the enabling environment. The most pronounced barriers were reported in the areas of data availability and management, institutional continuity, mandates and networking as well as financial resources. Generally, the barriers encompass constraints specific to both climate adaptation and development progress. Though seriously limiting mainstreaming, these barriers demonstrate some progress compared to other ODA recipients where decision-makers lack awareness and political will despite adverse climate impacts, for example in Kenya or the Philippines (Kramer, 2007; Lasco et al., 2009). Overall, bilateral and multilateral donors are well-positioned to catalyse the mainstreaming of climate adaptation into development assistance in Mozambique.

The opportunities identified in this paper reveal important aspects of how climate concerns could be integrated into decision-making for development assistance. Among these, procedural, organisational and normative aspects of mainstreaming (Persson, 2008) can be distinguished. Specific procedural dimensions relate to efforts towards adjusting decision-making processes within and between donor and national institutions. They include impact assessments, indicator and reporting systems as well as improvements of the policy dialogue. The sub-national analysis of climate-sensitive ODA activities in Section 4 delivered important arguments to advance related decision-making processes. Furthermore, organisational aspects focus on changes in institutional structures, competencies and financing mechanisms. As an important dimension, strengthening the Ministry of Coordination of Environmental Affairs would increase its leverage and convening power to coordinate other ministries that are instrumental for mainstreaming. Moreover, Programme Aid Partners could stimulate relevant budgetary planning and implementation processes. Climate concerns that have been progressively integrated into donor and national development planning illustrate normative dimensions of mainstreaming. Thereby, the credibility of and consequently the resonance to donor activities in Mozambique would increase with more convincing adjustments in their domestic policies serving as models (Yamin, 2005). Ultimately, donors may explicitly consider climate concerns in developing their new country strategies.

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