Understanding the SADC water agenda

Managing or developing regional water resources?

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This background paper is part of a series on the Political Economy Dynamics of Regional Organisations (PEDRO). It was prepared in March 2017. In line with ECDPM's mission to inform and facilitate EU-Africa policy dialogue, and financed by the Federal Ministry for Economic Cooperation and Development, BMZ, the studies analyse key policy areas of seventeen regional organisations in Sub-Saharan Africa. In doing so they address three broad questions: What is the political traction of the organisations around different policy areas? What are the key member state interests in the regional agenda? What are the areas with most future traction for regional organisations to promote cooperation and integration around specific areas? The studies aim to advance thinking on how regional policies play out in practice, and ways to promote politically feasible and adaptive approaches to regional cooperation and integration. Further information can be found at www.ecdpm.org/pedro.

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1. Introduction

The uneven distribution of Southern Africa's water resources, and the presence in the region of numerous major transboundary rivers, has long provided a rationale for cooperation between countries in the region on the management and development of these resources. The opportunities for such cooperation are recognised by SADC, whose Water Division addresses water resource management issues through the Revised SADC Protocol on Shared Watercourses and a series of Regional Strategic Action Plans for the water sector. A number of river basin organisations have been established under the Protocol as autonomous institutions for the governance of the region's shared rivers. While these are functionally independent of the SADC Water Division, they respond to the overall guidance provided by the Protocol and the Regional Strategic Action Plans, with the latter being developed by SADC member states with the support of the SADC Water Division.

This paper examines the evolution of the regional water agenda in Southern Africa and the political traction of this agenda. It also looks at the political interests of member states in engaging with SADC on water issues, as well as the areas of the regional water agenda with the most apparent traction. In doing so the study shows that regional water cooperation has been characterised by two parallel agendas: a formal agenda focused on the management of shared water resources; and a series of *ad hoc* bilateral or trilateral cooperation initiatives between member states. The former reflects the significant influence of development partners and their interests in the environmental aspects of water management, while the latter more accurately reflects the interests of SADC member states in exploiting the region's water resources for economic and developmental benefits.

The paper closes by suggesting a number of activities and approaches which SADC and/or the region's river basin organisations can adopt to promote beneficial outcomes for SADC member states and which would likely have political traction in the region.

This is primarily a desk-based study with a limited number of interviews.

2. The political traction of SADC on regional water cooperation

2.1. Structural and institutional drivers and obstacles

SADC's geography and climate provide a priori arguments for regional cooperation on water resource development and management. The region is large, and although it possesses significant renewable water resources, including major transboundary rivers that account for the bulk of the region's water supply, these are unevenly distributed across tropical areas in the north of the region and arid and semi-arid climatic zones in southern and central regions. There is also a relatively weak correlation of rainfall variability between these zones. This uneven distribution of water resources in space and time, along with differences in levels of socioeconomic and water infrastructure development between SADC member states and the challenges that the impacts of climate change bring, suggest an important role for regional cooperation on the development and management of shared water resources. Furthermore, such cooperation is seen as a way to build trust between riparian states and thereby avoid conflicts arising from disputes over shared water resources (interview SADC Secretariat).

However, despite the significant attention that has been given to transboundary water resource management in SADC, other factors suggest that the management of shared rivers is not the region's primary water challenge. Only a few countries in the region are severely water stressed in terms of the

current availability of water per capita at the national level, and those countries in the region that are water scarce have only a limited dependence on supply from upstream countries, limiting the likelihood of conflict (Muller et al., 2015)[1]. Although many potential water users in the region lack access to sufficient water to meet domestic needs and/or support their economic activities, this is not the result of physical water scarcity in shared rivers in the region, but rather due to the underdevelopment of the region's existing water resources (ibid). On this reading, the challenge the region faces is rather one of 'economic water scarcity'.

SADC's original water agenda was profoundly influenced by global water politics and by the perspectives of development partners, who have continued to have an influence. Member states of the Southern African Development Coordination Conference (SADCC), the precursor to SADC, sought to foster cooperation through initiatives that promoted their development and reduced their dependence on Apartheid South Africa. Cooperation on water resources was mentioned in the founding documents of SADCC, which identified the development of the hydroelectric potential of the region's rivers as the primary opportunity for such cooperation. To the extent that this and other water resource issues were considered, SADCC's analysis dealt almost exclusively with opportunities for hydropower development in a manner that could support irrigation and other consumptive water uses.

The Zambezi River was an obvious focus for cooperation since it was the main water resource for SADCC member states. The United Nations Environmental Programme (UNEP), then still a relatively new organisation, eager to undertake a 'show project' in the field of shared water resources in Africa, developed a plan for the management of the Zambezi river basin (ZACPLAN). However, the ZACPLAN developed by UNEP, which was adopted by the basin countries in 1987, failed to address the SADCC regional ambition of promoting hydropower projects. Instead, 18 of its 19 proposed projects related to environmental, social and governance issues with the sole energy-related project relegated to a second phase, subject to the availability of finance. Thus from the earliest phases of regional water cooperation in Southern Africa, there has been a tension between developmental and environmental objectives and, correspondingly, between SADC(C) governments and development partners who became actors with their own interests in the regional water agenda.

SADCC's transformation into SADC in 1992 coincided with a period of momentous change in the region and it would be understandable if long term water resource issues had not been a high priority. The rapid adoption of the SADC Protocol on Shared Watercourse Systems (Water Protocol) in 1995 is therefore puzzling. Adopted a full year before the SADC Energy Protocol, it was the *first* technical SADC protocol adopted after the establishment of SADC, yet it is not obvious that water resource management was a SADC priority at the time. SADC's Annual Report for 1995/6 stated that "the most important activity was the drafting of the Energy Protocol which was approved by Energy Ministers in July 1995". Under the Environment and Land Management section, all that was reported was the restructuring of the sector with "water resources programme divorced from the sector and put under the newly proposed Water Sector". The section also stated that "[m]ost activities in the Sector are capacity building and information exchange".

The reason for this haste has been attributed to challenges in designing the institutional arrangements for the ZACPLAN, leading to implementation hold-ups. Agreement between participating states was needed, but this required consultation at the regional level, which the states involved found easier through SADC (Nakayama, 1998).

It has also been suggested, however, that the Protocol was a trial run for concepts being proposed for adoption in the United Nations Convention on the Law of the Non-Navigational Uses of International

[1] Indeed, in an interview, a senior regional official acknowledged that, in a decade in SADC institutions, the only water-related conflicts he could recall that had reached SADC level were border-related matters involving rivers.

Watercourses (Watercourses Convention) which was being negotiated at the time. The 1992 Earth Summit in Rio had been characterised by a conflict between the environmental priorities of Europe and North America and the developmental priorities of the Group of 77. The refusal of the former to accept the compromise positions adopted at the Summit had a particularly significant impact in the water sector in developing countries, as the Integrated Water Resource Management (IWRM) paradigm promoted by Western countries, which emphasised environmental protection and constrained resource development, was subsequently imposed on developing countries through the use of conditional funding by donors and the promotion of funding for policy and research by Western governments (Schmeier et al., 2013; and see Muller, 2010; Muller et al., 2015).

2.2. External vs regional drivers

In SADC's case, the 1995 Water Protocol reflected the influence of Western development partners, who, at the time, were looking to emphasise environmental protection and the establishment of supranational organisations that would reduce national powers over shared rivers. The Protocol included a provision requiring the establishment of joint institutions on shared river basins - before the protocol, there was a well-established trend to cooperate through Commissions or similar joint committees. The intent for RBOs was that they should take over management of shared water resources i.e. with executive powers. This provision would later be rejected in the Watercourses Convention.

Indeed, when the Protocol was substantially revised in 2000 to reconcile it with the "more modest and realistic, although still contested" approach contained in the Convention, the provision on river basin organisations (RBOs) was removed in favour of a more pragmatic provision for member states to establish institutions such as watercourse commissions or water authorities as they saw fit, with responsibilities determined by the nature of their objectives (McCaffrey, 2001; Salman, 2007; Muller et al., 2015). The Revised SADC Water Protocol also introduced a new principle emphasising the need to ensure that interventions on water "are consistent with the sustainable development of all Watercourse States and observe the objectives of regional integration and harmonisation of their socio-economic policies and plans" (SADC, 2000). The omission of such a principle in the 1995 Protocol is indicative of the focus of the original Protocol.

Tension between the environmental concerns of development partners and the developmental concerns of SADC member states has impeded progress on the implementation of the SADC water agenda. This lack of progress can be seen in the dearth of physical infrastructure developed in the region, despite significant potential and substantial need. Aside from the Lesotho Highlands Water Project (LHWP) between Lesotho and South Africa, a project initiated by Apartheid South Africa, cooperative water resource development in SADC has been very slow.

The first Regional Strategic Action Programme (RSAP) for 1999-2004 acknowledged that its objective was to support SADC's overall Regional Indicative Strategic Development Plan (RISDP). But, although the RISDP explicitly set as an objective for the sector, "promoting the development of water infrastructure", the only infrastructure investment items it addressed concerned the navigability of Lake Malawi and the Shire River, and stabilisation of the course of the Songwe river.

These weak outcomes reflect the fact that the SADC water agenda has tended to reflect the priorities of (primarily European) development partners, rather than those of SADC member states. Despite supporting water supply programmes to meet basic needs, development partners have been primarily concerned with supporting the *protection* of water resources rather than with encouraging, let alone supporting, the development of physical water infrastructure. Because water resource management has been seen as a 'soft' sector to which donor funding could be directed, donors have funded much of the agenda and have had significant influence on it. Indeed, the Mid-Term Review of the first RSAP

noted that programme activities had largely been funded by development partners who had "played a seminal role" in guiding its implementation (MTR). This influence has led to a number of officials privately expressing concern about who was setting the SADC water agenda.

Since the start of the new millennium, the SADC water agenda has continued to focus on resource management and the establishment of autonomous RBOs, but has given increasing focus to the development of regional water resources through infrastructural investment. When the Water Protocol was revised in 2000 there was still little evidence that water was a particularly high priority for SADC. Water was not even a subject heading in SADC's 1999/2000 Annual Report while meteorology was extensively dealt with, as was electricity and the challenges of implementing the Southern African Power Pool. Similarly, in the 2000/1 report, the revised Protocol was not mentioned; the main mention of water was under energy, in relation to hydropower potential. However, the second RSAP (2005-2009), titled "Integrated Water Resources *Development* and Management" [emphasis added], stated that "water has been recognised as an engine for economic growth and regional integration. No wonder water is high on the SADC agenda". It also noted that the "SADC Summit of May 2004 urged member states to embark on water management and development programmes to facilitate agricultural development", and that the RISDP highlights integrated water resources management and related infrastructure development as one of the intervention areas that is seen as contributing to regional integration and poverty eradication.

By 2010, a number of global factors had contributed to significant changes of approach to water in SADC, as in the rest of Africa. The global economic crisis had imposed constraints on traditional (Western) development partners, but China had become a much more active investor in African infrastructure. It thus became much easier for countries to fund water resource development projects that had previously been delayed by the cautious and painstaking processes of the international financial institutions (IFIs), concerned about criticism from social and environmental activists. And even where the IFIs funded the projects, they were often built by Chinese companies. In Zambia, for instance, the expansion of generation on Kariba and the lower Kafue project, were partially funded and built by Chinese companies[2]. Against this backdrop, SADC became more vocal about the developmental priorities of SADC member states in the domain of water resources.

SADC water data analysis challenged the narrative of water scarcity in the region, but also reinforced the need for practical coordination and cooperation on water, and especially on water infrastructure development. According to the SADC Regional Infrastructure Development Master Plan (RIDMP) of 2012, the "most compelling indicators revealed by the Water Diagnostic Study [A SADC study undertaken to inform the RIDMP] are that the SADC region only retains 14% of the available renewable water resources of which 10% is retained in the Kariba and Cahora Bassa dams respectively, which are the largest man-made reservoirs in the region, both of which are on the Zambezi River. The rest of the total available renewable water resources go back to oceans." The RIDMP further noted that the

> *"statistics show that there are adequate water resources to support the citizen of SADC, however the challenge is that there is insufficient infrastructure which is appropriate to make these resources available to the populace for their economic and social use. It is a notable fact that the distribution of water resources varies significantly from north to south and from east to west. These challenges therefore require concerted effort in joint planning, management and development of water resources in order to achieve the regional targets and to ensure availability and adequacy across the SADC region."*

This represented a clear recognition of the fact that water scarcity in the region is economic rather

[2] https://www.internationalrivers.org/sites/default/files/attached-files/chinese_dams_in_africa_table.pdf.

than physical, and a direct challenge to the IWRM narrative of water conservation and protection that had influenced the early years of the SADC water agenda.

Having recognised this, SADC's water agenda now prioritises water infrastructure development. The SADC Executive Secretary, in his preface to the third RSAP (2011-2015), noted that the RSAP's "focus is on the development of water infrastructure in the region to improve the assurance of water supply for domestic, industrial, energy and food security" (one of the priorities of the third RSAP was to help SADC member states to mobilise infrastructure investment finance), and this message was repeated by SADC's new Executive Secretary in her preface to the recently published fourth RSAP (2016-2020). The RIDMP's Water Chapter, meanwhile, identified 34 water infrastructure projects that were ready for immediate implementation between 2013 and 2021.

Climate change has also belatedly appeared on the SADC water agenda, and while there is increased recognition in the region as to the importance of building resilience to climate change, the water-climate change nexus is still considered a largely donor-driven topic in the region. Climate change was not mentioned in the first two RSAPs, but since 2010, SADC has taken a considered approach. It notes that the immediate challenge that has to be addressed is the extreme climate variability experienced by the region and that building resilience to climate variability will also develop the capacity to address the longer-term challenge of climate change. RSAP-3 and RSAP-4 thus focus(ed) on building resilience by strengthening water resource management and integrating adaptation initiatives into water resources planning and management. While severe droughts in the region have focused attention on the need to build resilience to climate change, the topic is still considered to be donor driven, and SADC has not yet assumed an effective role in this area.

2.3. Implementation challenges

The achievements to date of SADC's water agenda have been relatively limited. Certainly, a number of RBOs have been established and a lot of capacity building has taken place and through its knowledge development work, the SADC Water Division has been able to generate greater awareness and understanding of the contribution of water to development in general and the potential for cooperation on the region's shared water resources more specifically. The SADC Water Division also initiated a useful hydrological monitoring initiative, implemented with the World Meteorological Organisation (WMO) as a regional pilot for a global observation system, and supported by development partners (SADC, 2013a). Nonetheless, the SADC water agenda has not made significant progress on developing water infrastructure and has therefore largely failed to translate interest in water into useful developmental action. The regional water agenda has also diverted human and financial resources from national activities that were arguably of a higher priority.

One of the factors limiting the success of the SADC water agenda is the relative absence of coherent national resource development plans in SADC member states. This is due partly to the reluctance of development partners to support such plans and partly to the fact that the focus in member states has tended to be on solving problems in individual locations. The result is that the building blocks (national resource monitoring and planning) of a coherent regional approach to water resource development are not in place. Regional action is hard to achieve if it is not underpinned by national capacity, as governments are unlikely to agree to regional proposals if they are not in a position to understand their national impacts.

The inability of the SADC Secretariat to recognise and effectively address strategic intersectoral challenges (e.g. relating to energy or agriculture) has also limited the results of the regional water agenda. This inability, which has contributed to the region's failure to develop water resources in pursuit of critical regional objectives in other sectors (e.g. increasing land under irrigation to improve agriculture, developing hydropower potential to address persistent energy shortages, etc.), derives

from a lack of coordination within the SADC Secretariat. The institutional structure of SADC in both energy and water (as too with agriculture, environment and disaster management) results in a silo approach. These sectoral structures, controlled as they are by sectoral Councils of Ministers, simply replicate domestic silos. This is exacerbated by the sectoral focus of development partners on whom much of SADC's activities depend. As a result, SADC has been largely ineffective in potentially its most valuable role - coordinating diverse sectors and actors[3].

The SADC Water Division is located in the Infrastructure and Services Directorate of the SADC Secretariat. This arrangement has the benefit of locating water together with infrastructure-related activities, but its disadvantage is that the two major "water-user" sectors of agriculture and environment are under separate management, a division which creates coordination challenges. Furthermore, water does not fit the infrastructure focus on connectivity (linking roads, rail, energy, etc.), as shared rivers provide a natural connecting infrastructure and the primary infrastructure development requirements are within member states, not between them (Muller et al., 2015).

SADC's role in implementing the regional water agenda is quite limited. It does not have a mandate to manage water resources - actual water management is done by agencies of national governments, with RBOs playing, at best, an advisory role. The SADC Water Division's main roles on water are: i) to provide overall guidance as custodian of the Water Protocol and set the agenda for regional cooperation on water through the RSAPs; ii) to act as a convener and facilitator of regional water stakeholders (and, in theory facilitate engagement across sectors) and as mediator in the case of disputes between stakeholders; and iii) to raise, coordinate and channel donor funding. The latter function is particularly relevant in relation to the region's RBOs, which present an obvious potential channel for multi-country assistance.

With regard to RBOs, the SADC Water Division's role includes identifying and utilising resources to support RBOs, ensuring political support for their activities and strengthening their capacity. The key RBOs are presented in Table 1 below. Conceived in 1995 as regional institutions with their own powers and functions, the region's RBOs were reduced to advisory bodies under the Revised Water Protocol. In practice, the RBOs have conducted some interesting studies and promoted stakeholder meetings, but with little evidence of significant impact on decisions or behaviour in or beyond the water sector. Some, such as LIMCOM on the Limpopo appear to have been allowed to lapse because there was not enough activity to justify their permanence. By contrast, the Komati, arguably the most highly developed (and contested) basin in the region, has apparently been governed well, even in the absence of an RBO but rather through a Tripartite Joint Permanent Technical Committee.

Table 1. Key Established River Basin Organisations

Key SADC River Basin Organisations	Countries	Mandate
OKACOM The Permanent Okavango River Basin Water Commission	Angola, Botswana, Namibia (Zimbabwe has a small portion of territory in the basin but is not a member)	Significant advisory mandate since, except for the environmental aspects, the member states have given limited attention to the use, management and development of the resource in the past.

[3] For example, SADC could potentially have addressed the lack of progress on the development of Mozambique's hydropower potential (Mphanda Nkuwa Project), by convening stakeholders to negotiate an appropriate set of arrangements to equitably share the benefits. Moreover, when the 'stakeholder dialogues' that the SADC Water Division convenes every couple of years do attempt to convene stakeholders from other sectors, these stakeholders often fail to show up, leaving the water stakeholders talking to themselves.

ORASECOM The Orange-Senqu River Commission	Botswana, Lesotho, Namibia, South Africa (although Botswana does not have access to any permanent tributary, it has chosen to be a member).	Weak advisory mandate that is bypassed by bilateral structures but offers a location for four riparians to meet where there are matters that cannot be addressed bilaterally. Has produced a significant volume of informative material on the river
ZAMCOM The Zambezi Watercourse Commission	Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania, Zambia, Zimbabwe	Wide mandate in theory, including collection, evaluation and dissemination of data, promoting, supporting, coordinating and harmonising management and development of the water resources, promoting the harmonisation of national policies. But, with limited resources (9 staff total) will only have limited scope. Most usefully, will be a platform to build on high-level basin planning and systems studies as core of its advisory mandate.
LIMCOM The Limpopo Watercourse Commission -	Botswana, Mozambique, South Africa, Zimbabwe	LIMCOM was agreed a decade ago but no progress has been made on its formal establishment. Inter-governmental arrangements on joint technical data sharing and modelling of catchment for disaster management purposes etc. are continuing.

In summary

The SADC water agenda is extensive and complex, with a variety of drivers. From the beginning the agenda has involved an uneasy compromise between the environmental priorities and associated water management strategies and instruments (e.g. RBOs) of development partners, who have sought to ensure that the water sector adopts a precautionary approach to the environmental (and to a lesser extent social) dimensions of water resource development, and the resource development aspirations of SADC member states. Reflecting the interests and influence of development partners, the SADC water agenda historically focused on i) the establishment of RBOs; ii) producing IWRM plans; and iii) environmental protection. The result has been limited traction and impact, as SADC member states have been more interested in attempting to attract funding for the development of water resource infrastructure to meet national development goals, particularly in respect of energy and agriculture, but also to underpin water supply and sanitation in growing urban areas.

These interests have increasingly found their way onto the formal SADC agenda, as the dominant narrative of physical water scarcity and a need to prioritise water resource management has been weakened due to economic growth and increased investment by China (and other emerging powers) in African infrastructure development. Today, the SADC water agenda focuses on how the development and management of water resources in the region can contribute to SADC's sustainable development. Overall, however, one could argue that the regional water agenda in Southern Africa represents a series of compromises between SADC member states and development partners, rather than a coherent programme.

3. The political interests of SADC member states in relation to the SADC water agenda

SADC member states have two main interests in the regional water agenda: 1) Protecting and promoting national interests in current water-related conflicts and ensuring future opportunities are not inadvertently or unnecessarily constrained; and 2) mobilising financial and institutional support for water resource development and management activities that address their development goals and

challenges. At the national level, SADC member states tend to be interested in water resource development in terms of irrigation, hydropower, sanitation and water supply, seen as a largely local or national issue, rather than water resource management for conservation, an issue with more obvious regional relevance.

The interests which they seek to protect and/or promote through SADC and the region's RBOs include access to transboundary water flows and navigational use rights and longer-term interests such as maintaining the right to future use and development of transboundary water resources. Table 2 below gives a summary of the main interests of all SADC member states in the regional water agenda. Managing and demonstrating cooperation is another objective of SADC member states, but is of somewhat less importance.

Table 2: SADC member states' shared rivers and main interests in the SADC water agenda

Country	**Shared river(s) in SADC**	**Main interest(s) in the SADC water agenda**
Angola	Okavango, Zambezi, Congo, Cunene	Protecting long term regional interests. Shared resources are not a priority because they are in relatively remote parts of the country, but Angola does not want to find itself in a position in the future where there is so much development downstream that it can no longer exploit these resources' upstream potential (a situation in which some Nile Basin countries now find themselves).
Botswana	Okavango, Orange, Zambezi, Limpopo	Protecting its interests while managing its conflicting approaches to its four shared rivers. Botswana is in the unusual position of being an upstream state (Limpopo), a downstream state (Okavango) as well as a riparian with no physical access (Orange-Senqu) or very limited access (Zambezi) to a flowing tributary of a shared river. Its diplomatic position on each is carefully calibrated. Thus it has opposed development of the Okavango (to keep its environmental tourism lobby happy) despite Namibia's urgent requirements, while it justified extensive development of Limpopo dams with significant impact on downstream users. It also claims the right to share in water resources produced by the Lesotho Highlands Scheme on the Orange and to participate in projects on the Upper Zambezi.
DRC	Congo	Developing hydropower potential. The development of the next phases of the Inga hydropower project depends on the identification of potential offtakers able to underpin financing of the project through a power purchase agreement.
Lesotho	Orange	Maximising returns (domestic political capital and associated developmental spinoffs, as well as financial) from cooperation with South Africa
Madagascar	None	Mobilising support for domestic water management issues.
Malawi	Zambezi	Mobilising support for water management under scarcity (Malawi is the second most water stressed country per capita after South Africa); managing cooperation and territorial claims with Tanzania; navigational claim on the Zambezi (access to sea)
Mauritius	None	Limited
Mozambique	Maputo, Umbeluzi, Komati,	Ensuring equitable access and cooperative management of resources (as a downstream nation it has the greatest interest of all SADC countries in this), mobilising support for water management and development as well

	Limpopo, Save, Pungue, Zambezi, Rovuma	as disaster management and developing hydropower for export. Mozambique seeks to exploit its substantial water-related potential to promote development. It is also vulnerable to extreme climate events (primarily tropical cyclones – in 1984 and 2000, Maputo had its water supplies cut off due to flooding) so it seeks to ensure that its infrastructure can deal with extreme floods as well as droughts. Mozambique has not agreed to Malawi's use of the Zambezi because of the environmental and administrative burdens involved and is meeting its obligations to its landlocked neighbour by instead upgrading the railways to the ports of Nacala and Beira.
Namibia	Orange, Okavango, Cunene	Protecting its interests in three major shared rivers, developing potential, particularly of Okavango, and meeting urban needs. Namibia has sought to abstract water from the Kavango tributary to the Okavango to support its growing water needs. It is estimated that its maximum demand would constitute about 2% of the river's flow, but proposals have been opposed because of the environmental concerns of Botswana (and the global environmental community). Costs are also an obstacle.
Seychelles	none	Limited
South Africa	Orange, Limpopo, Komati, Pongola/Maputo	Meeting its internal needs and protecting its economic and social interests while information sharing etc, demonstrating its commitment as an 'upstream' country to equitable regional development and cooperative management of shared resources.
Swaziland	Komati, Umbeluzi, Pongola	Mobilising support for water management under scarcity and managing its role as 'midstream' country while meeting domestic demands, primarily from its sugar industry
Tanzania	Rovuma, Zambezi	Limited, mainly managing cooperation on border rivers and its territorial claim to Lake Malawi (prompted by the discovery of oil in the lake basin).
Zambia	Zambezi	Managing potential constraints on water-related development, developing hydropower (national and bilateral with Zimbabwe, though Mozambique consulted) and irrigation (national) and supporting regional integration (it has been suggested that the Ministry of Foreign Affairs, overruled the Water Ministry in relation to the latter's reluctance to join the Zambezi Commission)
Zimbabwe	Zambezi, Pungue, Save, Limpopo	Developing hydropower and mobilising support for water management and development, in particular to supply major urban demand centres.

Source: Author's own assessment

SADC member state engagement in the SADC water agenda varies from member state to member state and from issue to issue, depending on the national interests involved. SADC member states engage in (and support the implementation of) the regional water agenda through SADC or RBOs, depending on the issue and where it is in their interest to do so. Lacking shared water resources, island member states demonstrate limited engagement. Those member states with more at stake, seek to shape and implement only those elements of the agenda most relevant to their national interests (e.g. Botswana objects to small abstractions on the Okavango river but has undertaken extensive dam development in the headwaters of the Limpopo). As a result, different member states display different degrees of influence over different parts of the agenda.

The day-to-day influence of member states on the SADC water agenda depends to a large extent on the capabilities of individual Ministers and the capacity of the country which is chairing the water sector at the time (the chair rotates). In a more general sense, South Africa is the most influential SADC member by dint of its status as regional hegemon. Mozambique and Botswana are very active in promoting their complex sets of interests at the regional level - in the former's case this involves trying to influence discussions as a downstream riparian subject to significant flood risks; Zambia actively pursues its interests as the primary riparian in the Zambezi; and Namibia and Malawi have specific interests that they ensure are taken into account. While member states recognise regional engagement as an important site in which to engage development partners and as a useful venue for information sharing and for developing policy positions to engage with continental or global issues and events, they do not appear totally sold on truly regional water cooperation.

There are few examples of SADC member states actively blocking the implementation of the SADC water agenda. One example was Zambia's refusal to join ZAMCOM (the Zambezi RBO). For a number of years, Zambia held out on joining ZAMCOM for fear that its potential for future development on the Zambezi would be constrained by a joint mechanism. It eventually did join, but only after responsibility for the decision was taken from the Water Ministry and given to the Ministry of Foreign Affairs. It has been suggested that this was done "because regional cooperation was a strategic priority for Zambia that overrode sectoral considerations" (Muller et al., 2015). It should also be noted that Zambia's change of heart occurred after it had completed a number of substantial investments in hydropower and irrigation. Although these were promoted under the SADC Water Protocol, it is possible that Zambia feared that such investments might have been contested under an activist ZAMCOM regime.

Where SADC member states cannot pursue resource development in shared river basins on a national basis, they prefer to pursue it through bilateral (or trilateral) cooperation or engagement, and not through RBOs or SADC. Zambia and Zimbabwe cooperate on the management of the shared infrastructure of Kariba Dam on the Zambezi through the jointly-owned Zambezi River Authority; Malawi and Tanzania are working together on the development of the Songwe scheme without the involvement of ZAMCOM; conflict between Malawi and Mozambique over Zambezi navigation has been handled bilaterally, rather than through ZAMCOM or the SADC Water Division; and the LHWP on the Orange-Senqu is proceeding under the guidance of a Joint Commission between Lesotho and South Africa, with ORASECOM playing no role beyond providing an additional channel of communication between some of the affected parties (Muller et al., 2015). Furthermore, SADC and the RBOs appear to play little more than a complementary role in member states' decisions on major water-related policies or investments. On the Okavango, for example, Namibia used data collection by OKACOM "to support and reinforce its pre-OKACOM proposals with which it is now proceeding" (Muller et al., 2015).

The interests of national elites have influenced SADC member states' engagement on regional water issues. Two examples where the role of national elites has become evident are the proposed Mphanda Ncua hydropower project on the Zambezi in Mozambique and the second phase of the LHWP between Lesotho and South Africa. In the former, a public-private partnership concession was given to a Brazilian company with politically prominent Mozambican partners participating in their private capacity. But this group failed to find South African counterparts willing to convince South African authorities to enter into a power purchase agreement, not least because South Africa has a range of competing energy projects which are the subject of major lobbying and the Mozambican proposal was relatively marginal. Progress on the LHWP, meanwhile, appears to have been delayed while private parties from Lesotho and South Africa cooperate to try to take control of project governance. In Lesotho in particular, there is intense competition between local elites for participation in what will be the major economic opportunity in the country for the coming decade.

National special interest groups have also influenced SADC member state positions on regional water-related issues. For example, tourism operators in Botswana, supported by international environmental groups, have influenced the Botswana government's resistance to any Namibian development on the Okavango, while transport operators in Malawi and coal miners in Mozambique have influenced the Malawi government's attempts to ensure a right of navigation to the sea on the Zambezi, and the Mozambique government's response.

In summary

The pursuit of specific national interests in accessing water and developing water resources by SADC member states results in uneven engagement in and implementation of the SADC water agenda. While member states generally do not seek to block the agenda, they see relatively little added value in it, and tend to pursue cooperation on water resource development in shared river basins through bilateral (or trilateral) mechanisms rather than through SADC or RBOs. The positions of SADC member state governments on water-related issues of regional relevance have at least in some cases been influenced by the interests of national elites or specific interest groups.

4. Areas of the regional water agenda that exhibit the most traction for regional cooperation through SADC

Two parallel processes of water resource management and development have evolved in Southern Africa: a formal regional process and a set of national processes coupled with ad hoc bilateral or trilateral cooperation. While there is limited need for joint water infrastructure development in Southern Africa, which is mostly at national and local levels, and an absence of serious conflicts between SADC member states over the impact caused by one state's use of water on its riparian neighbours, there are areas of the regional water agenda that are likely to bring developmental benefits and which are also likely to have traction among member states given their interests.

There is agreement, for instance that more information is required about the region's water resources and their use (interview, GIZ Lusaka) as well as a desire to invest in improving the relevant information systems. There is also agreement on the need for structured approaches to the planning of water resource development and management in order to support broader development objectives. Below are some suggestions regarding activities and approaches that the SADC water agenda can adopt or scale up, and which are likely to bring significant benefits and find political traction among SADC member states.

One area with potential traction would be to support member states to develop their national water resource plans so that they can coordinate with their neighbours regarding the potential for cooperative development as well as to avoid future conflicts. This could lead to a situation where agreements are reached while water use is relatively low as a proportion of the total available. In turn, this would provide countries with a firm base for their national development planning and enable them to guide water using-sectors as to the likely trends in the availability of water and its costs. Such agreements can over time be expanded to cover more detailed parameters which will include water quality as well as the maintenance of minimum flows and environmental flows. Such cooperation will facilitate the harmonious development of national projects rather than involve the promotion of joint projects, and is very much in line with SADC's role of providing overall guidance on transboundary water management.

Relatedly, the SADC agenda might continue to support and promote the collection and sharing of hydrological information, not least to limit the impact of floods and droughts. Effective management of shared rivers requires knowledge of the entire river system, across national boundaries, including

information about the resource and about the uses to which it is being put in neighbouring jurisdictions. This is best obtained through cooperative institutional arrangements which may be formal organisations or informal networks of officials and technicians. The real challenge is to develop the social capital inherent in such river-basin relationships without weakening the social capital inherent in its integration with national inter-sectoral political, administrative and economic networks. Specific roles that the SADC Water Division and/or RBOs could play in this regard include: further developing and supporting water resource information activities such as the SADC-HYCOS programme to generate hydrological data for monitoring and planning; assisting with systems to monitor and regulate water use (which will become increasingly important as water use increases); and collecting data from the operational units at national level and collating and publishing this (through ICT channels).

Coordination of planning and implementation of national water resource development projects in shared river basins would also be valuable, not least to identify and mobilise synergies where they are available. Measures that improve the availability and quality of hydrological information in shared river systems and administrative systems that reduce the time taken for consultation between countries about planned projects will bring direct financial benefits. The development of financing models for priority projects with long time horizons but producing transformative benefits (the EU's LUSIP project in Swaziland is, potentially, an example here, as are generic models for climate change adaptation) would also be beneficial. Benefits may also be derived from optimisation in the design and coordination in the use of national infrastructure on shared rivers. However, these benefits are likely to be small relative to total output, as demonstrated by the Zambezi optimisation studies.

The facilitation of technical interactions between member states can help build relationships and trust, allowing them to develop a more nuanced understanding of their interdependencies. That understanding requires the development of a range of human and social capitals, the human capital to understand the hydrologies and the social capital and networks to enable that knowledge to be shared across borders and inform new perceptions. It is for this reason that, even as they acknowledge the absence of conflict over water and the limited opportunities for direct cooperation in its use, regional officials still believe that regional water cooperation contributes to regional integration. The opportunities that are developed, the interactions through flood warnings that are seen to reduce risks and the investments in hydropower that yield joint benefits all contribute to a more positive regional climate.

In line with the above, regional initiatives could involve relevant structures of member states' national development programmes, rather than only those involved in SADC mechanisms. One example of such an approach used on the Komati, where there is no RBO, is the Dutch funded Programme for the Progressive Realisation of the IncoMaputo Agreement (PRIMA), which supported cooperative actions by giving money to Mozambique to administer. Mozambique implemented projects overseen by a committee of the three participating Ministries. Because this forced officials to work together on practical problems (prompting them to bring in farmers, municipalities and disaster management experts) it was far more effective in building practical cooperation than setting up an RBO to do studies, produce reports and convene meetings (an evaluation of this approach against that used for LIMCOM on the Limpopo, which involves many of the same government actors, could be illuminating). This type of approach can help strengthen and support SADC member states' ability to work across borders and ensure that water sector activities are better integrated into broader national development activities.

Finally, since most water development, management and use in Southern Africa occurs at the local and national level, rather than at the regional level, SADC could do more to improve national water resource management capabilities. Indeed, a primary objective of regional water cooperation through SADC should be to develop and support technical capabilities at the national and/or local level.

Training technicians to work in a range of different contexts is productive, and doing so regionally would also contribute to building a regional cadre of resource managers which would contribute substantially to trust and cooperation. The existing WaterNet programme is a good nucleus, but more attention is needed for similar programmes for mid-career staff.

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