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Water Resource Management and Development in SADC

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Water resources are a critical enabler of development in the Southern African Development Community (SADC). In most member states, rainfall is strongly seasonal and variable. This means that rain-fed agricultures (and the economies that they underpin) are vulnerable to drought. Storage and transmission infrastructure is required to support water supplies to irrigated agriculture, for urban and industrial use as well as for the generation of hydropower. Also, the climatic variability increases the vulnerability of the region to floods.

Although water resource development and management is usually undertaken at a local or regional (subnational) scale, many river systems cross subnational boundaries and some cross national boundaries. The political economy of the processes through which water resources are developed and managed, and their impact on national and regional development and integration, is a useful case study of the underlying dynamics of

regional integration in SADC.

The interaction among local actors (the different water users, potential water users and other stakeholders), national actors (principally governments), the regional structures of SADC and the wider international community have contributed both to some successes that have been realised and to certain development failures.

The analysis suggests that, although there have been some isolated success stories, in general there has been a disjuncture between water resource development and management activities at local and national level and those at a regional level. It further suggests that this is because the regional agenda, which is largely dependent on, and therefore driven by, external funding, has not been adequately informed by national priorities.

The main conclusions are that donors have played an important role in the approaches to the management and development of the region's water resources. Their focus on environmental outcomes and their preference for regional approaches, not firmly articulated in national political structures, may account for their limited impact to date. It could also be argued that the outcome of limited development of the region's resources was indeed the objective of their approach.

In the absence of immediate opportunities for joint projects, it would appear that national governments have been content to adopt donor approaches at regional level, except in the case of South Africa, which has not been donor dependent. National focus has been on local water development and focusing on services delivery, rather than on more systematic water resource development.

The emergence of China and Brazil as financiers for public infrastructure has been a game changer and has revealed preferences that are substantially different to those that governed the discourse from 1980 until recently.¹ This is demonstrated by the dominance of China and Brazil as funders of recent African water resource projects.² A consequence of the investment constraint prior to this development is that significant opportunities to use local and national water resource development and management interventions to support activities that would have underpinned regional development and integration have been missed, and that this has had a negative impact on the development of the countries of the region.

1 For example, Zambia initially refused to accede to the Zambezi Watercourse Commission (ZAMCOM), which involved seven other neighbouring states gaining access to the Zambezi basin, and only ratified the ZAMCOM Agreement in August 2013. In the interim, China has been actively involved in supporting Zambia's water resource developments.

2 See, for example, International Rivers, 2013; World Bank, 2011.

CONTEXT

The SADC Protocol on Shared Watercourses was the first sectoral protocol tabled in SADC in terms of the 1992 Treaty of Establishment. It was agreed by members in 1995 and ratified in 1998. The 2000 Revision of the Water Protocol emphasised a basin-wide approach to water management rather than accentuating the principle of territorial sovereignty.

History of water resource management in Southern Africa

The management of shared water resources has been a focus for Southern African integration since the inception of the Southern African Development Coordination Conference (SADCC) in 1980. It was initially driven by the specific interest of Lesotho, which was responsible for the Soil and Water Conservation and Land Utilization Sector. Under this model, water was a subset of environment and land management activities (ELMS). This was under the model in terms of which each SADCC country was given responsibility for a specific sector. Lesotho's specific interest at that time was to ensure that the Lesotho Highlands Water Treaty with South Africa would be fair and beneficial for Maseru. Taking responsibility for the relevant sector was helpful in this regard.

The establishment of SADC came shortly after the 1992 Rio Conference on Environment and Development, an event that also influenced formal approaches to water resource management in the region. At that conference, a division between European and developing countries was revealed, with Europe promoting a strong 'environmental agenda' while developing countries insisted on the primacy of their 'development agenda'. This debate spilled over into the water sector, and a pre-conference lobbying paper (the Dublin Principles) reflecting the European position became the basis for donor policy rather than Agenda 21, the formal conference agreement.³

In 1992 the SADCC was transformed into a formal regional organisation, SADC. The Water Sector Coordinating Unit was established in 1996 with the objective of promoting the sustainable and integrated

3 Muller M, 2008.

planning, development, utilisation and management of water resources in the region. These apparently unrelated events created a dynamic that goes some way to explain SADC's early focus on regional water resource issues. The limited application of the protocol's provisions in almost two decades since it was agreed on serves to reinforce the conclusion that it had limited operational importance beyond the establishment of core principles to govern relationships between states. Indeed, one substantial area in which the protocol was changed was to remove the prescriptive requirement to establish river commissions, replaced by the formulation 'such as watercourse commissions, water authorities or boards as may be determined'.⁴

Following a 2001 decision of the heads of state, the SADC sectors were relocated from their country bases to SADC headquarters in Botswana, where they were grouped into four directorates. Water falls under the Directorate of Infrastructure and Services, together with Transport and Communications, Meteorology, Energy, and Tourism. The inclusion of water issues in the Infrastructure Directorate rather than in the Food, Agriculture and Natural Resources Directorate suggests that SADC's architects were concerned primarily with water as a development enabler rather than as a natural resource. But the separation from some related activities which fall under the Food, Agriculture and Natural Resources Directorate, is uncomfortable.

INFLUENCING FACTORS

For SADC member states, the priorities in the water domain tend to focus on local services and a few larger projects of national ambit. For donor dependent member states, water is a 'soft' sector that can attract donor flows. Since money is fungible, the maintenance of good relations with donors in relation to activities in the water sector enables national budgetary resources to be increased, and is an incentive to adopt a co-operative approach.

4 SADC, 2010. See Article 5(3) of the Revised Protocol on Shared Watercourses in the Southern African Development Community (SADC) (SADC 2000), which substantially revised the provisions of articles 3, 4 and 5 of the original Protocol on Shared Watercourse Systems in the Southern African Development Community (SADC) Region (SADC 1995).

SADC officials have a direct interest in developing and maintaining good donor relations, since a substantial proportion of the organisation's budget is derived from donor sources. Their priority is likely to be the maximisation of income from donor sources.

For SADC's principal donors, the promotion of the environmental agenda is an important objective. Among the pillars of this agenda are giving greater priority to environmental conservation; constraining infrastructure development that may affect the environment; promoting participative approaches that prioritise the inhabitants of a river basin over the interests of the larger local and national populations; and building river basin organisations (RBOs) in shared river basins that reduce the decision-making power of national governments. To this end, donors have preferred to provide support for water resource management through regional organisations rather than through national governments.

MAIN ACTORS INVOLVED

There are three sets of formal players at the regional level:

- SADC member states;
- the SADC Secretariat; and
- SADC donors.

In addition, there is a wide range of interest groups in both SADC and in donor countries, where specific interest groups may exert considerable influence. Those RBOs⁵ that exist function primarily as facilitation mechanisms, which also serve to generate a common information base on which decisions can be taken.

The management of water and the demand for water supplies and related services is overwhelmingly local throughout the region. It depends on funding from local users, national governments or, in many SADC states, donors. Local drivers include the following.

- Agriculture, which uses the most water but usually has the least ability to fund activities to support water management and supply.
- Industry, which uses a relatively small proportion

5 Including the Orange–Senqu River Commission, Limpopo Watercourse Commission, ZAMCOM and the Permanent Okavango River Basin Water Commission.

and yet is best able to fund water management or self-supply.

- Domestic use, which is usually larger than industrial use but the ability of domestic users depends heavily on their income levels, which in most of SADC is not enough to fund investment in infrastructure or even system operations; this is particularly true of rural communities.

Many of the issues affecting these national interest groups are expressed and addressed at the level of local rather than national government. And most are focused on infrastructure for water supply (or less often, for the management of waste water) rather than on the development and management of the resource itself.

In donor countries, interests include the following.

- Direct beneficiaries from aid transfers (aid agencies, non-governmental organisations and commercial enterprises directly involved in providing related services).
- Groups with indirect interests, often policy related, which seek to achieve poverty reduction, environmental conservation or economic policy objectives.

APPROACHES TO WATER RESOURCE DEVELOPMENT AND MANAGEMENT

Although water resource management and development is critical to economic and social development, water resources are also diffuse and local, and their management is not conveniently centralised. Unlike energy, which can easily be transported, water is a low-value, high-volume commodity, which cannot be transported over long distances without incurring heavy costs, for infrastructure as well as for its operation. As a result, water resources are usually developed and managed at relatively local scales. It is only when the intensity of use rises (ie the proportion of available resource actually used) that the scale of its management increases and multi-user system developments begin to predominate. In SADC, only South Africa, Zimbabwe and Swaziland use more than 10% of their surface water resources⁶ and need to focus on system-wide resource

management throughout their territories.

If the resource is developed and managed at a local level, the river systems from which water resources are derived are typically of a different scale, in the extreme, (as in the case of the Zambezi river), covering vast areas of territory. Economic development demands at various localities on the system may at some point interact and conflicts may emerge. Since rivers can be regarded as unitary ecosystems, there is also concern from an environmental conservation perspective that water use in one part of a system may have impacts elsewhere.

The many different scales at which water is managed and the different objectives of that management means that there is a diverse set of actors engaged in one way or another in water resource management and development. This makes it difficult to achieve effective articulation and co-ordination between the different actors for policy setting, and creates opportunities for jurisdictional arbitrage.

Who is driving the process?

As discussed, most water resource management activities in SADC occur at national and local level, even within shared river basins. This is a logical consequence of the relatively low levels of development and use of the resource.

Aside from major dams in the Zambezi, for hydropower generation (more recently adapted also for flood management) the only major regional project is the Lesotho Highlands Water Project (LHWP), which transfers water from one sub-basin of the Orange river to another. Smaller examples include the pre-1994 co-operation between Swaziland and South Africa to develop the Maguga and Driekoppies dams in the Komati basin and pre-1974 agreement between colonial administrations in Angola and Namibia to build the Ruacana hydropower facility on the Cunene river, whose expansion is currently being reviewed.

Therefore, it is primarily local and national actors who drive water resource management and development in support of economic and social activity. There is a separate (and disconnected) set of activities driven at the regional level that focuses mainly on environmental

6 World Water assessment Programme, *World Water*

Development Report. UN Educational, Scientific and Cultural Organization: Paris, 2006.

protection or related basin-focused initiatives. These initiatives are driven largely by donors acting at the SADC level, with the limited involvement of national governments.

Who is blocking or enabling the process?

There has been relatively limited funding for the development of water resources in Southern Africa, outside South Africa, largely as a consequence of the reluctance of donors to fund such development. This has reflected the situation internationally, as has been well documented by Briscoe in his paper about the challenges of World Bank lending for water resources development.⁷

However, there is substantial funding for transboundary activities, primarily from bilateral donors but also from specialised multilateral organisations, many of which have an environmental conservation focus.

IMPACT

Aside from the major cross-border hydropower developments, the most obvious positive outcomes from regional co-operation in the management of water is the contribution of the LHWP to economic and social development. In South Africa, it has enabled a continuation of economic and social development; while in Lesotho it has contributed to infrastructure development, opening up communications to formerly inaccessible areas, in addition to the significant direct budgetary and employment contributions. Although Phase 1A of the LHWP was implemented under a pre-1994 Treaty, this was revised subsequent to the establishment of a democratic government in South Africa, and Phase 1B of the project was implemented. It is significant that this joint project was implemented under the guidance of a technical structure involving only the two governments rather than through the intermediary of an autonomous RBO.

On a smaller scale, the agreement reached between South Africa, Swaziland and Mozambique on the use of their shared rivers (IncoMaputo agreement, 2002) facilitated significant investment in agricultural expansion in Swaziland, which required confirmation

of a water allocation in an already heavily used system, as well as providing Mozambique with assurances about the future availability of water for urban supplies to the capital Maputo. Again, it is significant that this water-sharing treaty – the only one to be agreed on in SADC since the SADC Protocol was ratified in 1988 – was achieved in basins in which there were no autonomous RBOs, and negotiations were conducted directly between the relevant governments, rather than through an intermediary facilitator.

The negative impacts have been the failure to meet development needs in other river systems, notably the Okavango, where attempts to meet the needs of riparian Namibia (which sought only 2% of the river flow) were rebuffed by Botswana, actively supported by international environmental organisations. A further negative impact has been the failure to develop regional hydropower potential, owing to the unwillingness of donors to fund large water resource development projects. One consequence of this is that when South Africa, as the region's largest economy, sought proposals for new sources of electricity, only Mozambique was in a position to make firm proposals for an expansion of the existing Cahora Bassa dam and the new Mphanda Nkuwa project, which has been developed with Brazilian support. This is because donor funding has not, until recently, been available for project preparation. Now that donor policies have changed, agencies like the World Bank have reported substantial potential benefits from regional optimisation of infrastructure development and operations that were not previously investigated.⁸

It is hard not to conclude that the failures have been associated with a focus on environmental protection driven primarily by donor actors. Aside from the Okavango case, a further example of this is the water resource management plans developed for the Pungwe basin in Mozambique. These plans, largely funded by donors, noted the need for infrastructure development to protect the river from saline intrusion; secure water supplies for Beira; Mozambique's second city, and to expand irrigated agriculture. The plans did not, however, include significant proposals for infrastructure development to meet these needs, although local actors have prioritised these for decades.

The failure to develop the energy, water supply and

7 Briscoe J, 2010.

8 World Bank, 2011.

irrigation potential in large parts of Southern Africa has reduced economic growth and slowed the achievement of development goals. This has been the result of the application of a paradigm of water resource management that excludes infrastructure development, primarily enforced through rule-based donor funding.

The pent-up demand underlying this has been revealed by the preferences expressed in the use of newly available funding from sources such as China (but also Brazil and India) for water resource projects such as Mphanda Nkuwa, the Batoka gorge and a number of other projects in Zambia.⁹

CONCLUSION

Water resource development in SADC member states could have contributed more to meeting the region's needs for agricultural expansion and power generation in support of equitable economic and social development. Suitably supported by appropriate trade and financial agreements, such developments could have contributed to greater regional integration and faster economic growth.

SADC countries continue to face the challenge of developing cost-efficient, import-light renewable energy sources, for which hydropower is an obvious alternative. Future agricultural development, particularly productivity improvement, is also heavily dependent on reliable water supplies to mitigate climate variability for which infrastructure investment is a critical component. However, the main challenge remains the limited availability of long-term (10–20 year) low-cost finance. Indeed, it is widely recognised that most of sub-Saharan Africa does not suffer from a physical water scarcity but rather from economic water scarcity, occasioned by the lack of adequate financial resources to develop and use the resources that are available.

Since water resource development is a long-term

⁹ International Rivers, 2013.

activity, typically financed over decadal time frames, it is heavily dependent on public finance. The limited access of SADC member states to long-term investment finance and its dependence on infrastructure averse donors for such investment have militated against progress in this area.

It is important to understand the potential of water resources to contribute to sustainable social and economic development, in order to ensure that investment and management interventions are designed to yield optimal benefits. For this to be achieved, water resource development and management activities should be firmly located within local and national political economies in order to inform potential regional-scale interventions.

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