

## Regional water management

### How water and its management may contribute to regional economic integration

The Water Research Commission (WRC) has completed a study that considered whether and how different approaches to the development, management and use of water resources might contribute to regional integration in southern Africa.

#### Background

Much of southern Africa's freshwater flows in rivers that are shared between more than one country. It appears obvious that cooperation will be needed to allow that water to be effectively used. So it is assumed that cooperative management of water will make an important contribution to regional economic integration.

This assumption is challenged in a newly published study by the WRC. This study considered whether and how different approaches to the development, management and use of water resources might contribute to regional integration in southern Africa whose main goal is social and economic development.

It concludes that water will not make an important direct contribution. However, its political symbolism as a practical example of cooperation between SADC countries should not be under-estimated.

How were these conclusions reached?

#### Water and development in history

The study considered first how the management and use of water resources contribute to socio-economic development, which is today the primary goal of regional integration in southern Africa.

From earliest times, the availability of water has underpinned the development of great civilisations, from Central America,

Egypt and Mesopotamia to India and China. More recently, the industrial revolution in Europe and North America was initially powered, and its products carried by, water.

That history and experience contributes to the widespread belief that water and its management can still contribute to regional social and economic development today.



#### Can southern Africa repeat history in the 21<sup>st</sup> century?

Since regional integration is a political and economic priority for Africa, it seems logical to focus on the cooperative management of water resources in shared rivers as one way to promote development, which is the fundamental objective of regional integration. However, it is not obvious that development achievements that were driven by water in the past can be replicated in the 21st century.

Technological innovation has provided many, often cheaper, alternatives to water as a source of power and as a means of

transportation. Water can be captured over far wider areas and transported over longer distances than ever before.

Investment in transport and communications infrastructure has opened up new areas for agricultural production. This has reduced the importance of water, whose availability in accessible locations no longer provides a unique stimulus for economic development.

Furthermore, it is not generally necessary to build up new water infrastructure to link countries together. While for transport and telecommunications, countries need to build infrastructure links to enable them to interact and trade with their neighbours, water has its own 'network infrastructure' in the form of rivers and lakes.

## **Water is not likely to be a source of conflict in southern Africa**

The large volumes of water required for economic purposes such as irrigation and their relatively low value means that water will generally to be moved over long distances. Only occasionally will infrastructure shared by more than one country produce cheaper hydropower or water supplies than national or local level projects. Even then, the additional costs and risks of such cooperative arrangements may reduce their attractiveness.

## **There are some, limited, opportunities for practical cooperation**

This is not to deny the scope for cooperation but rather to emphasise its limits. There have been significant cooperative interventions in the region.

The Lesotho Highlands Water Project reduces the cost of South Africa's water supplies and generates significant public revenues for Lesotho. Joint power generation projects between Zimbabwe and Zambia and between Namibia and Angola contribute to those countries' electricity needs and may eventually supply some power to the wider region.

Cooperation between Zimbabwe, Zambia, Mozambique and Malawi has reduced the impact of Zambezi floods. There is local cross-border cooperation in water supply (Ressano Garcia/Komatipoort) and irrigation (Namibia/South Africa; Malawi/Tanzania; Swaziland/South Africa) but these activities are limited in number and scale.

Further opportunities identified include hydropower projects that could serve regional needs although these are often only marginally cheaper than national electricity generating projects. In the eyes of national governments, the benefits of cheaper electricity may be outweighed by the costs of transmission and the perceived risks of depending on external supplies.

And the region has an expanding range of energy alternatives available to it – notably gas as well as renewables such as wind and solar. So the production of electricity derived from hydropower is unlikely to grow as coal declines because of the increase in production from gas and other renewables. Only the rapid development of the full potential of the Inga Scheme in the Democratic Republic of Congo (DRC) could alter this.

Greater cooperation in the operation of dams to regulate flows in the Zambezi River could further mitigate the impacts of floods and droughts more effectively than at present and yield more power, more reliably, while still supporting agriculture and environmental production.

This would, however, benefit some countries while imposing costs on others, notably upstream irrigators, and the design of a satisfactory compensatory mechanism to address this will present substantial political challenges.

## **Indirect contributions to regional integration**

Intra-SADC trade in water-related products whether of irrigated food crops or electricity generated by hydropower is a small proportion of total trade. There are only a few high-impact strategic projects, notably the Inga hydropower project in DRC, which could substantially increase regional trade let alone promote greater regional integration. Currently, only 3% of the value of the proposed regional infrastructure projects in SADC's portfolio is for water projects.

However, because rainfall and water in rivers is unevenly distributed across the region and extreme weather events such as droughts rarely affect the entire sub-continent, there are important opportunities for regional cooperation in agriculture.

Coordinated approaches would reduce risks of food shortage and strengthen food security. However, many practical and political problems would have to be solved

before food production could be coordinated across 15 sovereign countries.

An important final contribution that water could make, indirectly, to regional economic integration is to the political climate in the region. As the study documents, SADC's regional integration strategy has failed to achieve its core goals and is currently under review.

Part of the challenge faced by SADC is a reluctance of member states to cede their sovereign powers to a regional body, not least because there is limited evidence to show that this will bring benefits to them.

The water sector can show that through limited, pragmatic, often simple bilateral cooperation, all parties can benefit. This has the potential to build the trust and confidence in regional initiatives that is essential for more effective regional economic integration.

## How to support cooperation

If water sector cooperation is to contribute to building trust and confidence, the approaches adopted must be practical, affordable and yield results. Thus the study is critical of the emphasis that has been placed by SADC on initiatives to build new institutions for the management of shared rivers, often the result of donor pressures.

It is suggested that the current priority in southern African countries is to manage water in support of their social and economic development. On shared rivers, there will always be a risk – or at least a perception – of competition between actual and potential users, that actions of one country will have negative impacts on another.

Thus, there must be arrangements to avoid this. SADC already has an agreement on how to manage this interaction, namely the SADC Protocol on Shared Watercourses.

## The limitations of river governance

As noted, there has been a concerted effort to establish formal river basin organisations on SADC's shared rivers with aspirations to delegate them to certain governance and management functions currently undertaken by national governments.

This has been driven mainly by a desire to establish new forms of governance within environmental rather than administrative or political boundaries.

While it makes technical sense to use river basins for hydrological and ecological analysis, successful water resource management requires engagement between water users and water managers as well as accountability to the wider society. Most water users are organised within political boundaries while water uses occur within economic regions.

It is therefore suggested that regional integrated will be more effectively supported if water management institutions are organised at those scales, focused on 'policy-sheds' or 'problem-shed' rather than watersheds.

## Learning from our own history – some recommendations

The study concludes with some practical recommendations for approaches that could ensure that water resource management contributes to the SADC goal of greater regional integration.

One recommendation is that approaches to water management on shared rivers should be 'hydro-supportive', focused on what water can do for society, rather than 'hydro-centric', focusing on what society should do for water.

Cooperation to achieve the region's socio-economic development ambitions is more likely to gain support and produce results than a focus on environmental protection.

The other key recommendation is that the focus of cooperation should be functional rather than institutional – addressing specific problems rather than establishing institutions to deal with them if they arise. This recommendation is equally applicable to wider approaches to integration which are currently under discussion in southern Africa.

## Takeaway messages

- There are no major conflicts over southern Africa's shared rivers because the countries that are most dependent on shared rivers are not those that are water scarce.
- Cooperation in the management of shared rivers will not make a major contribution to regional economic integration in southern Africa and most development on shared rivers will be undertaken by national or local agencies, within the countries concerned.
- Successful cooperative developments like the Lesotho Highlands Water Project have been implemented by the countries concerned. New river basin organisations, which have been heavily promoted by donor organisations, have generally not been involved.
- The example of a few successful cooperative projects, as well as practical information information-sharing about floods, droughts and planned development on shared rivers, will build confidence and trust, which will be water's most important contribution to regional integration.
- While it is important to protect river environments as far as possible, the focus of water management should be on what water can do for society, not what society can do for water.
- More generally, the experience of southern Africa's water sector suggests that SADC should concentrate more on promoting practical, functional cooperation and less on building complex regional institutions.

### Further reading:

To order the report, *Water and regional integration: The role of water as a driver of regional economic integration in southern Africa* (Report No. 2252/1/15) contact Publications at Tel: (012) 330-0340, Email: [orders@wrc.org.za](mailto:orders@wrc.org.za) or Visit: [www.wrc.org.za](http://www.wrc.org.za) to download a free copy.