

International Water Management Institute

Southern Africa Regional Strategy 2014-2018



Solutions for a
water-secure world

Front cover photos (clockwise from top left): David Brazier, Graeme Williams, David Brazier

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Photo: Steve McCurrach/IWMI







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Message from the Director General and Director for Africa

IWMI's *Strategy 2014-2018* lays out the research agenda to provide sustainable land and water management solutions to key development challenges affecting the world's food supply and the underlying natural resources and ecosystems. From the outset it was recognized that the incidence, severity and priority attached to these development challenges will vary across regions just as there will be varying opportunities and constraints within regions to address them. With this in mind, IWMI's Board of Governors endorsed the development of regional strategies to serve three purposes. Firstly, to contextualize the global strategy and implement key actions within the socioeconomic, institutional and biophysical realities of each region where IWMI works. Secondly, to align IWMI's regional research program with the development agenda and priorities of national governments and development partners in each region. Thirdly, to demonstrate clear opportunities for promoting and achieving uptake of IWMI's research results at the farm household, national and regional levels.

The *Southern Africa Regional Strategy 2014-2018* was developed through an iterative and consultative process that builds on over two decades of IWMI's work in the region and on the more recent research activities of the CGIAR Research Programs (CRPs) active in the region, i.e. Water, Land and Ecosystems (WLE), Climate Change, Agriculture and Food Security (CCAFS), Aquatic Agricultural Systems (AAS) and Dryland Systems (DS). It was also significantly shaped by consultations with a cross section of stakeholders and partners in the Southern African Development Community (SADC) region.

The strategy identifies seven niche areas through which IWMI's expertise and competence will be brought to bear on the most pressing land, water, climate change and ecosystems management challenges impeding improved food security, livelihoods and economic development in the SADC region. It is a statement of intent of what IWMI, in collaboration with national governments, regional organizations, development investors and other stakeholders, aims to achieve in the region during the next five years. It will be implemented through a portfolio of interlinked research and research-related (i.e. capacity building, communication and research uptake) activities which will lead to results that will assist national governments in the SADC region to meet their development goals. It will also assist them in implementing the post-2015 development agenda on Sustainable Development Goals. Attaining these goals will ultimately lead to poverty alleviation, improved food security, environmental management and economic development in the SADC region. We look forward to working with our partners in pursuit of these goals.



A handwritten signature in black ink, appearing to read 'Jeremy Bird'.

Jeremy Bird
Director General



A handwritten signature in black ink, appearing to read 'T. Olalekan Williams'.

T. Olalekan Williams
Director for Africa

Overview

The global *Strategy 2014-2018* of the International Water Management Institute (IWMI) seeks innovative, evidence-based and integrated solutions to six development challenges to improve food security, enhance people's livelihoods, and support a healthy and productive environment.

The aim of the present strategy of the IWMI-Southern Africa (IWMI-SA) regional program is to:

- regionalize IWMI's global strategy and its development challenges to Southern Africa;
- align IWMI-SA's research program with the water development priorities of national governments and Southern African institutions;
- demonstrate clear opportunities for achieving research uptake, outcomes and impact; and
- reflect on the comparative strengths of IWMI-SA.

IWMI-SA's specialist niche areas are given below:

- Revitalizing public irrigation schemes.
- Promoting sustainable conjunctive use of surface water and groundwater.
- Capacity building, and monitoring and evaluation (M&E) of the agriculture and water sectors.
- Protecting against extreme climatic events and adapting to climate changes.
- Ecosystem services and the efficient use of resources.
- Assessing pro-poor and gender-equitable investments in water.
- Improving transboundary water resources management.

Research conducted by IWMI-SA focuses at the regional level of the Southern African Development Community (SADC). Although we work in all countries, our focus, at present, is on the Limpopo and Zambezi river basins, and at country level in Botswana, Malawi, Mozambique, South Africa, Tanzania, Zambia and Zimbabwe.

IWMI-SA's research approach for uptake and impact is characterized by:

- an interdisciplinary approach;
- integrating ecosystems, ecosystem services and society;
- being non-partisan and neutral;
- conducting research for sustainable development and a participatory approach; and
- partnership building, knowledge sharing and a synergetic research program.

IWMI has adopted a new vision of 'A water-secure world' with the aim of 'providing evidence-based solutions to sustainably manage water and land resources for food security, people's livelihoods and the environment'. IWMI's Strategy 2014-2018 outlines its role as a think tank driving innovative research and ideas for solutions to complex development challenges; a provider of science-based products and tools; and a facilitator of learning, strengthening capacity and achieving uptake of research findings. As one of the global research centers of the CGIAR Consortium, IWMI leads the CGIAR Research Program (CRP) on Water, Land and Ecosystems (WLE), and participates in five other CRPs. As a special focus, the Institute positions agricultural water management within a context of water security in rural and urban settings, as well as at national or international river basin scale.

Through local, national and global partnerships with research institutes, policymakers, development implementers, nongovernmental organizations (NGOs), financiers and donors, IWMI's comparative research in Africa and Asia identifies practical solutions to improve food security, enhance people's

livelihoods, and support a healthy and productive environment for the following six generic challenges:

- Intensify agricultural productivity sustainably.
- Manage risk and increase resilience.
- Benefit from functioning ecosystems.
- Enhance efficient resource use and reuse.
- Promote gender and social equity.
- Maximize shared benefits across sectors and borders.

Committed to tailored solutions that are responsive to regional needs and priorities, and to broker global knowledge and forge partnerships from local to global levels, IWMI has regional offices across Africa and Asia, with its headquarters in Colombo, Sri Lanka. IWMI-SA was established in 2000 in Pretoria, South Africa, and is hosted by the Department of Agriculture, Forestry and Fisheries of South Africa.



Photo: David Brazier/IWMI

Context of the Southern African region

The Southern African region is characterized by an unequal distribution of resources (water resources, in particular), with some parts of the region well-endowed but others suffering hardships due to scant resources. The region also has a heterogeneous socio-economy, with high levels of poverty in generally low-income countries. Even in countries where the economies are growing, this often does not improve the situation of those who do not have access to education or natural resources. As a result of this, there are large numbers of people whose agriculture-based livelihoods are highly and directly dependent on natural resources. Access to water remains a key issue, with many of these people entirely reliant on rainfall without the benefits of water infrastructure development, and they have to face continual risk and insecurity. Compounding this issue is the continual degradation of those natural resources on which they are so dependent. Some of the issues causing this degradation are very low productivity of land, pollution of water, and over-abstraction of groundwater resources during the dry season, all of which are made worse by the possible impacts of climate change.

Over the past few decades, there has been a flurry of responses from governments and regional authorities to these issues. There are promising bilateral, national and regional policies in place. However, even though these policies are good, implementation of them at all levels remains a challenge. The net effect is that people on the ground in many respects do not see the benefits of these policies, and thus remain in a threatened situation. There are considerable challenges for development in the region, and it is through research such as that conducted by IWMI-SA which will help to identify solutions for sustainable development. Indeed, the experience of IWMI and CGIAR, globally, has shown that the benefits of research have been approximately double the investment and, in some cases, have produced returns way beyond expectations.

Alignment with the water development priorities of national governments and regional institutions

In order to deliver new, relevant and practical solutions that will be taken up by end users, IWMI-SA aligns its research activities with regional policies, priorities and needs. Taking into consideration IWMI's involvement in global initiatives, such as the United Nations Sustainable Development Goals (SDGs)

and human rights frameworks, IWMI-SA is a mediator to ensure that broad global commitments are continuously informed by, and meet, national and regional priorities. In Africa, IWMI collaborates in the same way with the African Union, African Ministers' Council on Water (AMCOW), African Development Bank (AfDB), and the New Partnership for Africa's Development (NEPAD) and its Comprehensive Africa Agriculture Development Programme (CAADP).

Within SADC, IWMI-SA supports the formulation and implementation of various policies in the region. In particular, the Revised Protocol on Shared Watercourses, Regional Water Policy, Regional Infrastructure Development Master Plan (RIDMP) – Water Sector Plan, Regional Strategic Action Plan on Integrated Water Resources Development and Management (RSAP IV), Regional Indicative Strategic Development Plan (RISDP), Regional Agricultural Policy (RAP), SADC Gender Policy (2007), and the SADC Protocol on Gender and Development (2008).

At national levels, IWMI supports the agricultural and water resources management policies and legal reforms of governments.

Key elements of the IWMI-SA regional strategy

Regionalizing IWMI's global strategy

The following IWMI-SA niche areas are related to IWMI's global challenges, and also respond to the policies and needs of countries in the SADC region. IWMI-SA has all the skills needed to work in these niche areas, complemented by access to a pool of researchers from other IWMI offices worldwide.

Niche 1: Revitalizing public irrigation schemes

Improved water and land management are vital components for the sustainable intensification of smallholder agriculture. However, the target of CAADP and SADC of doubling the irrigated area by 2015 has not been achieved. Across SADC, many existing public irrigation schemes are not performing at optimum level. IWMI-SA will continue to identify innovative and integrated solutions to sustainably revitalize public irrigation schemes, and derive lessons for new public investments in agricultural or multi-purpose water storage and conveyance infrastructure. Further, IWMI-SA's irrigated area mapping and other research activities will highlight how informal small-scale private investors, especially in groundwater irrigation, operate at increasingly larger scales. IWMI-SA will continue to recognize and support farmers' investments, with the aim of further identifying economic, agronomic and institutional measures for promoting such investments, and improving sustainability, productivity and equity.

Global challenge 1: Intensify agricultural productivity sustainably

Niche 2: Promoting sustainable conjunctive use of surface water and groundwater

With the exception of South Africa and, to some extent, Zimbabwe and Namibia, water resources of member states of the SADC region are still largely underdeveloped. This renders the region even more vulnerable to the impacts of climate change. Hence, climate-smart water infrastructure development is a top priority for the SADC region, and for national governments to leverage economic growth and resilience. The challenges



of river basin closure, which is already occurring in South Africa, provide lessons for the other countries. Unlike the past, where emphasis was on surface water development, it is now increasingly recognized that there is an untapped potential for groundwater development, especially for small-scale users. However, there are still important gaps in the identification of the current levels of groundwater use for agriculture, sustainable potential of groundwater ecosystem services, and solutions for the conjunctive management of interlinked groundwater and surface water resources. IWMI-SA fills these gaps with a socio-ecological approach, in order to identify the best technical, economic and institutional options for future development and management of the conjunctive use of water resources by smallholders and rural communities for gender-equitable poverty alleviation and broad-based agricultural growth.



Global challenge 1: Intensify agricultural productivity sustainably

Global challenge 2: Manage risk and increase resilience

Niche 3: Capacity building, and monitoring and evaluation (M&E) of the agriculture and water sectors

IWMI-SA will continue to embed scientific knowledge generation in policy dialogue, learning and capacity building processes. A SADC-wide project, together with a growing number of national nodes of the Regional Strategic Analysis and Knowledge Support System for Southern Africa (ReSAKSS-SA), is specifically designed for that purpose. ReSAKSS-SA monitors regional agricultural investments, including irrigation and water investments, and trade. ReSAKSS-SA also provides an important high-level platform for policy dialogue and stakeholder engagement in the agriculture and water sectors, which are linked to the SADC region.

Global challenge 1: Intensify agricultural productivity sustainably

Niche 4: Protecting against extreme climatic events and adapting to climate changes

Southern Africa is often faced with devastating floods and is a global ‘hot spot’ of climate change, which is worsened due to poor infrastructure and weak preparedness. IWMI-SA aims to help build up the resilience capacity of the high-risk areas by focusing on the following activities: generating and provisioning of knowledge and information related to climate-induced extremes on water; exploring with partners an integrated approach to transboundary river and floodplain management; identifying high potential development options for improved flood protection while sustaining ecosystem services; and improving resilience against droughts.

Global challenge 2: Manage risk and increase resilience

Niche 5: Ecosystem services and the efficient use of resources

Ecosystem services are the benefits that people receive from nature. In 2015, the SDGs will be set to determine the sustainable use of resources, and for this reason WLE identified that the concept of ecosystem services needs to be included in most of the research that is carried out on water and land resources management. Without having an idea of how many resources are at the disposal of society, and the condition that these

are in, it is impossible to intelligently plan for any development. Thus, knowing something about the ecosystem services is essential for all future development planning, if it is to be sustainable. This includes a thrust to incorporate the assessment and consideration of environmental water requirements into all water development plans. IWMI-SA will also strive to assess and explore opportunities to improve resource-use efficiency in rural and urban areas. More efforts will be directed to innovative business models for resource recovery and reuse, and promoting safe practices in the use and reuse of water resources.

Global challenge 3: Benefit from functioning ecosystems
Global challenge 4: Enhance efficient resource use and reuse

Niche 6: Assessing pro-poor and gender-equitable investments in water

Of the population of the SADC region, 70% lives below the USD 2/day poverty line, especially in rural areas. Here, farm households depend on low-productivity rainfed cropping, livestock, off-farm activities and a male-dominated labor migration to urban areas. Even in countries with significant economic growth, this growth tends to be in capital-intensive and extractive agriculture, mining and tourism, which tends to widen class and gender disparities, and intensifies competition for markets, water and land resources.

This niche seeks to close these gaps by innovating and upscaling people-driven public service delivery models for irrigation and other water uses (Multiple-use water Services [MUS]). This approach takes communities' indigenous knowledge of ecosystem services and climate, their informal investments in water and land management, and their priorities as a starting point. In line with the gender policies and strategies of AMCOW and the SADC region, these water service methodologies redress gender inequalities that often prevail in patrilineal societies and build on the equalities in matrilineal societies. Where competition for water intensifies, IWMI-SA analyzes the plural water rights regimes, and identifies and engages in policy dialogue on potential human rights-based adjustments of the persistent colonial legacy of the national water laws. In cases of external large-scale investors, IWMI-SA focuses on communities' empowerment to level the playing field and on contractual arrangements for equitable sharing of benefits.

Global challenge 5: Promote gender and social equity

Niche 7: Improving transboundary water resources management

The SADC region has 15 international transboundary river basins and numerous internationally shared aquifers. Of the water resources of the region, 70% cross or flow along national boundaries. SADC's transboundary cooperation agreement addresses the planning of shared infrastructure (including hydropower), large water and land deals, and pollution.

Benefitting from its regional presence and neutral position, IWMI-SA studies transboundary water cooperation and planning, thereby filling two niche areas. First, it expands SADC's existing focus on surface water and transboundary river basin organizations by including transboundary aquifers and potential institutional arrangements. Second, the research takes a bottom-up approach by including small-scale water cooperation at the level of a small tributary or catchment to identify transboundary activities that typically tend to be ignored. The aim is to identify evidence-based options for i) organizational shapes and financing, ii) benefit sharing, and iii) fit-for-purpose bundles of institutional instruments that respond to specific conditions in particular river basins. With both a top-down and bottom-up perspective, the role of scale in decision making is clarified and higher-level decision making is informed by bottom-up perspectives.

Global challenge 6: Maximize shared benefits across sectors and borders



Geographical focus

IWMI-SA has the mandate to regionalize the IWMI global strategy, and this is done by giving emphasis to the southern African area as reflected by the SADC boundaries. Some programs, such as ReSAKSS-SA, operate at SADC level, while basin- and aquifer-level programs focus on the Zambezi and Limpopo, which are also the focal river basins of WLE. IWMI-SA has decided to focus on seven countries in order to ensure sufficient concentration and critical mass to achieve greater impact, namely Botswana, Malawi, Mozambique, host country South Africa, Tanzania, Zambia and Zimbabwe. In other countries, IWMI-SA adopts a selective approach based on opportunities for funding, comparative analysis and strategic partnerships.



IWMI-SA approach to achieving research uptake, outcomes and impact

IWMI-SA adopts the following approaches to achieve uptake, outcomes and impact from its research.

- **Interdisciplinary approach**

IWMI's global, holistic and interdisciplinary approach to research generates new, more integrated perspectives for more realistic solutions for water and agricultural management. Accordingly, the IWMI-SA research team consists of 17 internationally recruited African and non-African scientists with local, regional and global expertise in economics, sociology, law, irrigation and water engineering, hydrology, ecology, hydrogeology and remote sensing.

- **Integrating ecosystems, ecosystem services and society**

IWMI-SA sees integrated water and land management as a tool to ensure sustainable development, improved livelihoods, and to protect ecosystems from degradation and the impacts of climate change. IWMI-SA's projects increasingly integrate an ecosystem service-based approach. This approach identifies, values and weighs the multiple benefits provided by ecosystems to people (e.g., agricultural development as well as soil stabilization, flood regulation, etc.), and in this way secures a more sustainable future for society.

- **Non-partisan and neutral**

IWMI-SA's independent status guarantees credible knowledge generation, monitoring, and analysis of complex and controversial issues related to water, agriculture, energy, food security and ecosystems. By facilitating dialogue on findings from monitoring, evaluation and other research, IWMI-SA contributes science-based evidence to policy- and implementation-oriented partnerships

- **Research for sustainable development and a participatory approach**

IWMI-SA strategically engages with key policy and implementation institutions and players in the agricultural water management and environmental sectors at all stages of the research-into-use spectrum. This begins with the specification of challenges, formulation of research questions and expected impact pathways, and continues throughout the research process on to the client-oriented sharing of research results. Effective and efficient stakeholder participation right from the beginning enables co-creation of new knowledge and materials, generates capacity, and ensures the replicability of pilot tests of implementable and demand-driven scalable solutions.

- **Partnership building, knowledge sharing and a synergistic research program**

IWMI-SA has built, and continues to create, new partnerships in order to be responsive to national and regional needs within the Southern African region, and to efficiently disseminate innovative solutions from the research. IWMI-SA endeavors to cultivate synergies with, and contribute to, research programs of donors and organizations which promote a regional approach to water and agriculture challenges. In global programs with Southern African components, IWMI-SA draws on research and solutions from global players and partnerships, in the first instance IWMI itself and the CRPs. WLE, led by IWMI, focuses on the Zambezi and Limpopo river basins. IWMI-SA also participates in three other CRPs (Dryland Systems; Aquatic Agricultural Systems [AAS]; and Climate Change, Agriculture and Food Security [CCAFS]). IWMI-SA also participates in Africa- and SADC-wide programs. Other programs are country-specific. In all the programs, IWMI-SA not only contributes global experience and quality scientific research, but also provides opportunities for mentoring and institutional capacity development. IWMI-SA collaborates, in particular, with universities and research networks, e.g., WaterNet, Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA), centers of excellence, and the Water Research Commission in South Africa. In these partnerships, IWMI-SA also builds academic capacities by guest lecturing, providing opportunities for students and interns to be part of the research activities, and the recruitment of postdoctoral fellows and graduate students to complete part of their studies at IWMI-SA.

In support of these collaborations, IWMI-SA is committed to a vibrant and interactive communication program, and is working towards ensuring that full open access is provided to its research publications and data.



Photo: Graeme Williams/IWMI

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