

# Reducing the vulnerability of people and ecosystems

in the Olifants River catchment



## USAID: RESILIM-O

USAID's Resilience in the Limpopo River Basin (RESILIM) program



### Acknowledgements

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P O Box 1919  
Hoedspruit 1380  
Limpopo, South Africa  
T +27 (15) 793 0503  
W [award.org.za](http://award.org.za)

Company Reg. No. 98/03011/08  
Non-profit org. Reg. No. 006 – 821

USAID's Resilience in the Limpopo River Basin (RESILIM) program addresses ongoing degradation in the Limpopo River Basin in southern Africa, where people face cycles of water shortages and floods, and declines in crop productivity as climate change further stresses an already water constrained region.

There are 2 components to the program; 1 operating at a basin-scale (USAID: RESILIM-B, which was implemented by the USA based company Chemonics and addresses similar issues at the scale of the SADC member states that share the Limpopo Basin (South Africa, Botswana, Zimbabwe and Mozambique)) and a catchment-scale project (USAID: RESILIM-O). Both projects share the same overall objectives. You can find out more information on the a RESILIM B project on [www.usaid.gov](http://www.usaid.gov) website.

The Olifants Catchment is part of the Limpopo Basin. The Olifants River contributes nearly half of the water in the Limpopo system. For this reason USAID's RESILIM-O focusses on the Olifants Catchment. It is being implemented by the Association for Water and Rural Development (AWARD).

The program aims to reduce the vulnerability of people and ecosystems in the Olifants Catchment specifically, by improving how transboundary natural resources are managed. By understanding the systemic causes of vulnerability, including climate vulnerability, it is promoting new ways of thinking and acting to promote integrated water and biodiversity management.

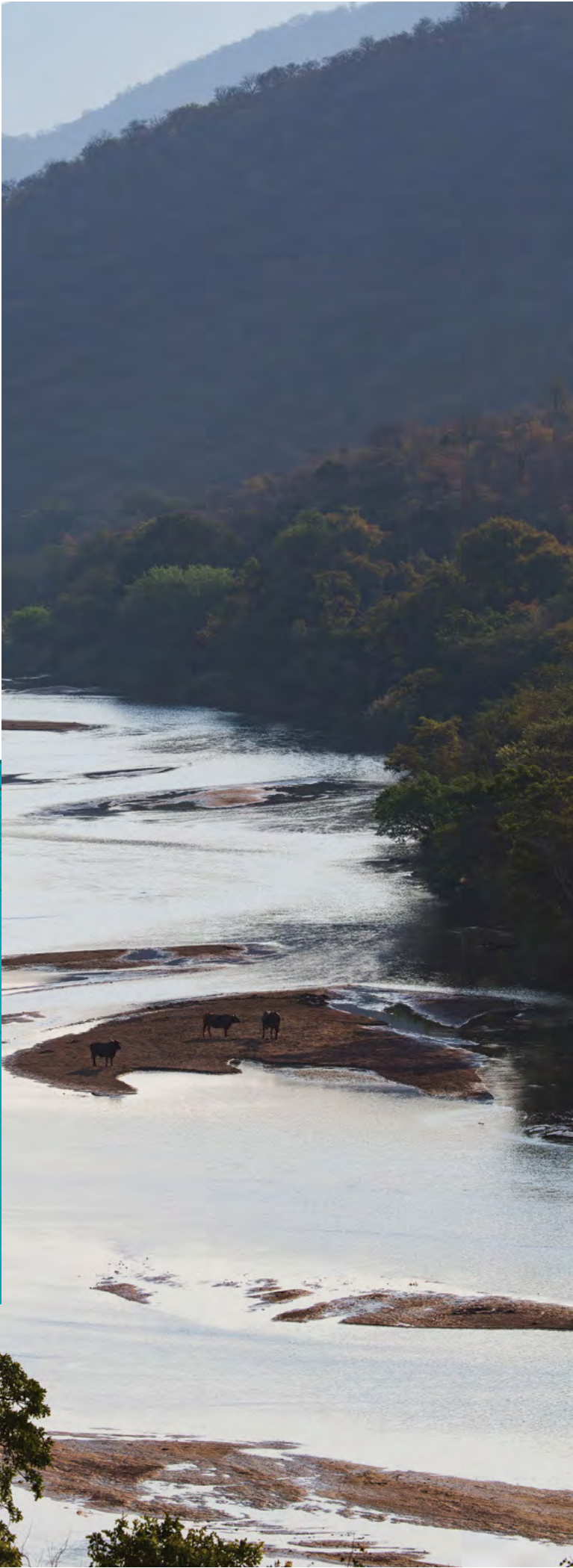


# Our Olifants: A Threatened Lifeline

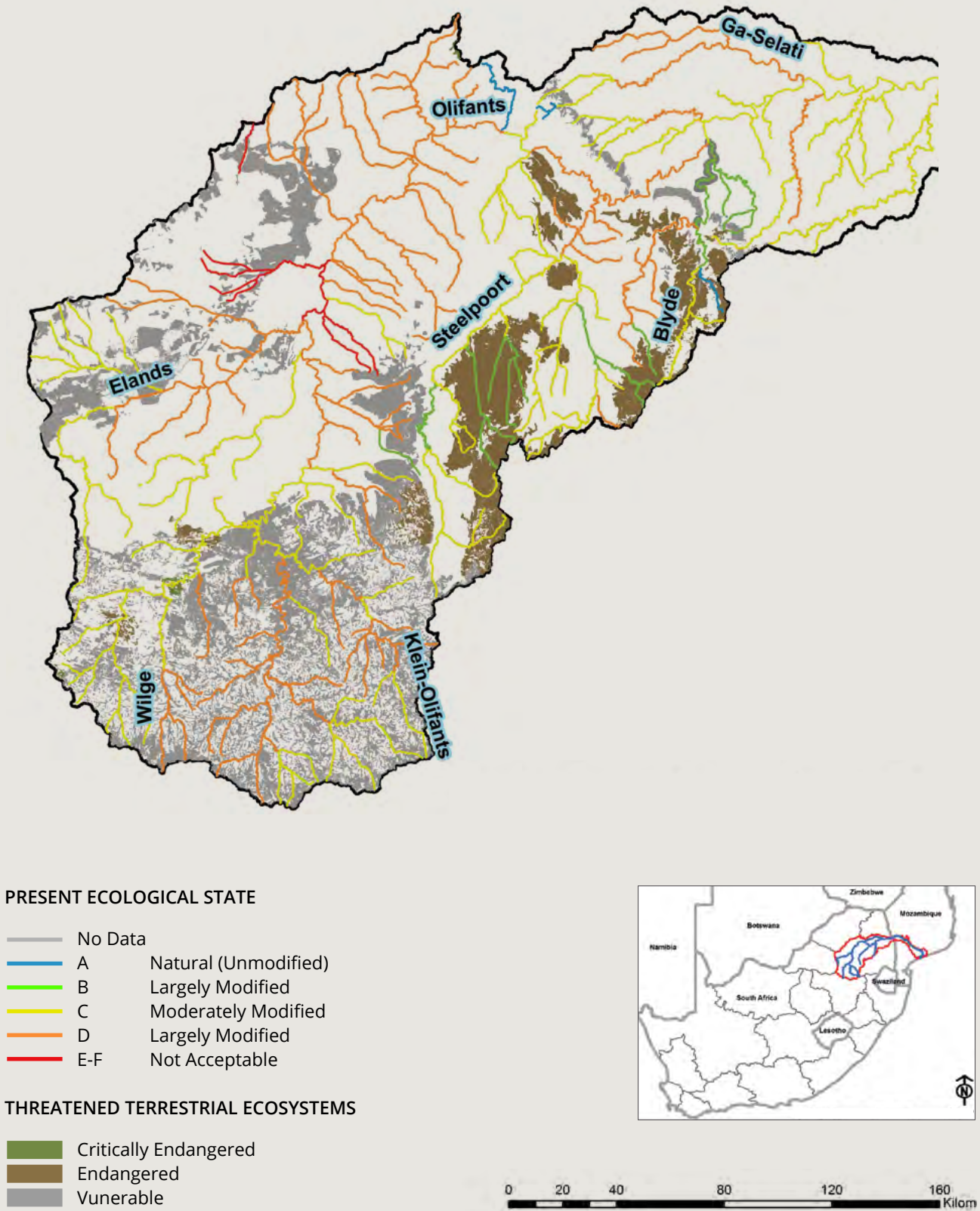
The Olifants River and its contributing waterways are critical for supporting life. Yet unchecked pollution, inappropriate land and resource use, weak and poorly enforced policies and regulations, and poor protection of habitats and biodiversity are degrading the Olifants Catchment at an alarming rate. What's more, as we begin to feel the effects of climate change, the future is even more uncertain.

It's not too late to change things though. Improvements to water security and resource management will help to turn things around. Achieving these improvements in how our water and natural resources are managed is the focus of the work currently being implemented through USAID: RESILIM O by AWARD.

Our objective is simple. We want to support the healthy ecosystems that sustain livelihoods and resilient economic development in the South African and Mozambican portions of the Olifants Catchment. ”



Threatened Terrestrial Ecosystems and Present Ecological State of Rivers Overlay





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## Local Context

The Olifants River, known as the *Rio dos Elefantes* in Mozambique, originates in South Africa's Mpumalanga Highveld. It flows northwards before curving in an easterly direction through the Kruger National Park and into Mozambique, finally finding rest in the salty water of the Indian Ocean near Xai Xai, just north of Maputo.

### The Olifants River Catchment has 6 main tributaries in South Africa

1 Wilge

2 Elands

3 Steepoort

4 Blyde

5 Klaserie

6 Selati

The Letaba and Shingwedzi rivers join the Olifants in Kruger National Park and Mozambique respectively. The Olifants River, in turn, is the Limpopo River's most important tributary in Mozambique.

In South Africa we manage rivers and water resources within them on the basis of what we call Water Management Areas (WMA). There are 9 of these in South Africa. In total, the Olifants Water Management Area is just short of 55 000km<sup>2</sup> and falls within provinces - Gauteng, Mpumalanga and Limpopo. Within the 3 provinces, the catchment also includes entirely or parts of 9 district municipalities, each with their own unique socio-economic situation and challenges. These are: Mopani, Ehlanzeni, Nkangala, Greater Sekhukhune, Capricorn, Waterberg, Gert Sibande, Ekurhuleni and Tshwane Metro. About 3.5 million people live in the South African side of the catchment.

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of the total population are formally employed.

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Roughly

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of the land area of the Olifants River Catchment is under conservation.

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About

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In Mozambique the *Rio dos Elefantes* (Olifants River) meets the mighty Limpopo River downstream of Massingir dam. This part of the catchment is home to about 700 000 people and the river flows entirely through Gaza Province. It is managed under the Southern region by an organisation called ARA Sul.

**As well as people, the Olifants is home to 3 terrestrial biomes, namely savanna, forest and grassland, while Mozambique contains savannah, forest and Indian Ocean coastal belt biomes. Some other interesting facts about this catchment are:**

- The total population is estimated to be about 4.2 million people, about 70% of whom live in rural areas.
- There are about 30 major dams, not including farm and illegal dams.
- Only around 21% of the total population are formally employed.
- About 900 000 people on the South African side of the catchment receive some kind of social grant from government.
- There are in the region of 800 registered mines in the catchment including closed mines and prospective mines.
- Roughly 16% of the land area of the Olifants River Catchment is under conservation.
- About 42% of the land area in the Olifants River Catchment is officially classified as endangered or vulnerable.
- There are around 120 waste water treatment works that process domestic and industrial waste water on a daily basis.
- The value of the Olifants River Catchment's export market is around R1 billion, which is mainly generated from the mining industry and food exports from large irrigated agricultural operations.
- Large portions of the Olifants River Catchment are under agricultural production and the catchment is home to the second largest irrigation scheme in South Africa.
- Significant amounts of the Olifants River Catchment are under land claim from communities that were previously dispossessed of their land.
- The Olifants Catchment is often seen as the 'power house' of South Africa as Eskom has more than a dozen coal-fired power stations in the region some of which are in the catchment. The coal for these power generators comes from parts of the catchment.



# Global Context

Although USAID: RESILIM O focuses on the Olifants Catchment, it is important to remember that it is located within the broader context of the Limpopo Basin. In fact, the Olifants River contributes nearly 40% of the water that flows in the Limpopo River making it an important catchment in the system as a whole.

The challenges we face are not unique. In just 60 years, the world's population has grown from 2.5 billion people to 7 billion people today. By 2050, another 2 billion will join us - mostly in developing countries - increasing the rapidly growing demand for our planet's resources.

Global problems are exacerbated by global climate change. A changing climate will undermine the livelihoods of millions of people struggling to break free from poverty. It's up to each one of us to play our role in creating a sustainable future for ourselves.

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## AWARD's Approach

At AWARD, we recognize that the natural world's resources are limited, and undergoing rapid depletion and degradation. We know current practices of use and management are inadequate to deal with the changes and challenges we are facing.

We design practical interventions to address the vulnerability of people and ecosystems, and merge considerations from both environmental and social perspectives. Our approach has always been one that involves thinking across disciplines, boundaries and systems. ”

With this in mind, we are working with diverse people and institutions in the water and biodiversity sectors in the Olifants Catchment to understand the multiple vulnerabilities to environmental change, including climate change.

Along with quality scientific contributions, our recognition of, and engagement with the socio-political context is fundamental. What we currently know of the Olifants Catchment has allowed us to begin to institutionalize integrated, resilience-based practices, providing a foundation for robust development policy and practice in the Olifants Catchment and beyond.





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## From THE Olifants to OUR Olifants

An important part of our work in the Olifants Catchment involves developing the capacity of individuals and organizations to respond to the challenges of water management and natural resource management in a climate changing world.

In the same way that users share the water of the Olifants, they also share the effects and impact of their activities on the quality and quantity of this life source. ”

We therefore endeavour to create a sense of ownership and care amongst the people who share the Olifants Catchment.

We work with a full spectrum of institutions, industries, land-use practices, cultural identities and notions of agency. Our stakeholders and partners are community members, traditional authorities, farmers, the mining sector, research institutions, local and national government and other interested and affected parties in South Africa and Mozambique. If you would like to be involved or learn more about our work,

visit:  
[www.ourolifants.org](http://www.ourolifants.org)

or contact:  
[info@award.org](mailto:info@award.org).



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## Pathways to Institutionalisation:

### TESTING > REFLECTIVE LEARNING > INSTITUTIONALISATION

What we know about new ways of thinking and doing things is that if they do not have a 'home' these new ways of working will have no impact. AWARD therefore focusses on the process of creating institutional homes for new ways of managing our precious resources so that they can be taken forward on a daily basis as routine practices.

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## Threats to Our Olifants

There are wide-scale threats to biodiversity and ecosystem services that support peoples' livelihoods in the Olifants Catchment. Given that currently the Olifants River is the only tributary that sustains flows of the Limpopo River in the dry season, these threats have transboundary implications and affect tens of thousands of people. Flows into Mozambique alone support the livelihoods of between 6000 to 10000 small scale farmers and sustain critical mangroves, a conservation priority.

As part of our work, AWARD has produced the first systemic resilience assessment of the Olifants River Catchment using a participatory approach. The organisation has developed an integrated water quantity and quality model for the entire Olifants to help prioritise key areas of vulnerability, so prioritising and coordinating areas for action.



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# Drivers of Change

## 01 URBANISATION



## 02 MINING



## 03 DEFORESTATION



## 04 AGRICULTURE



## 05 ALIENS



## 06 DISCHARGE FROM WASTE WATER TREATMENT WORKS





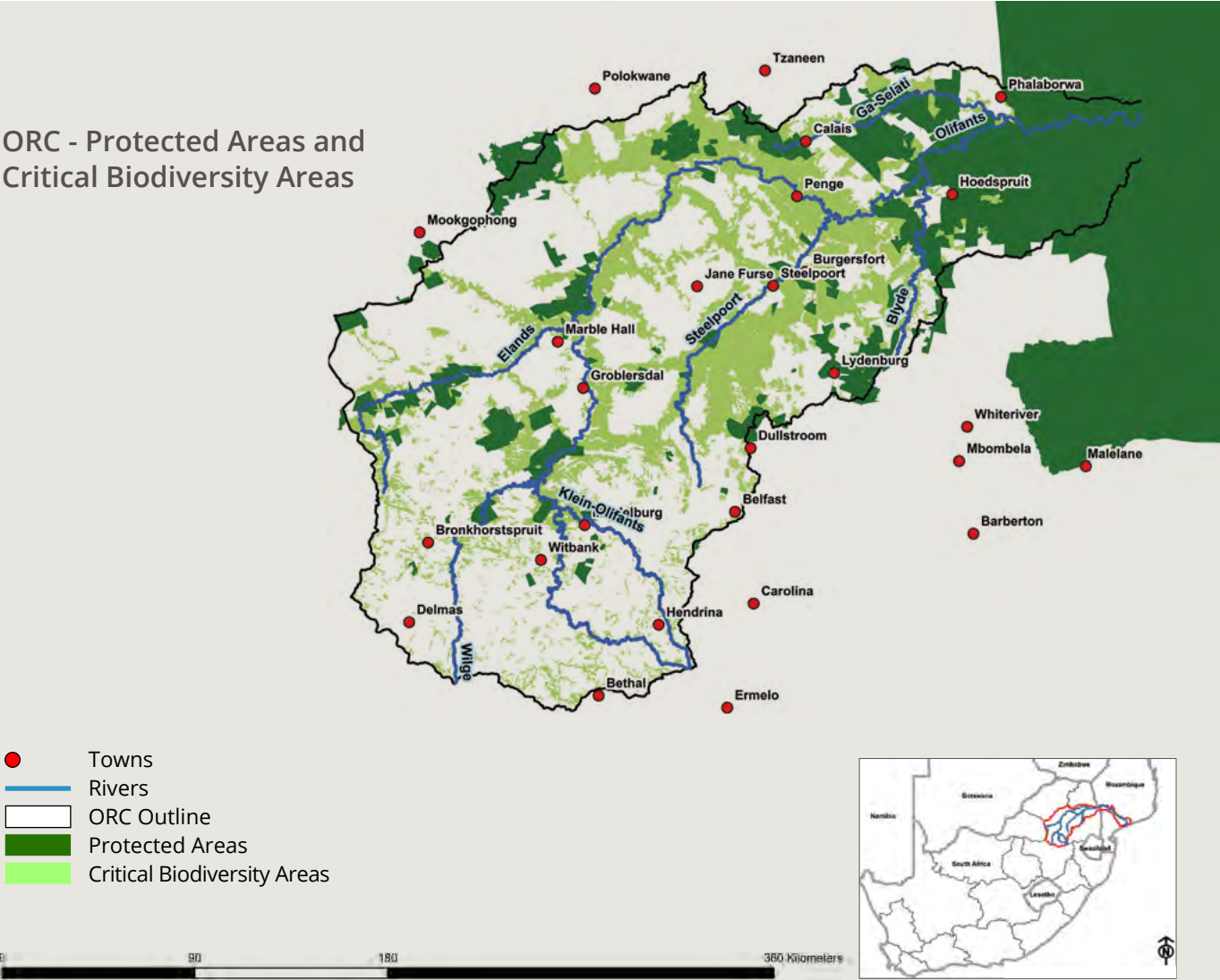
# Critical Areas for Action in Our Olifants

The areas we focus on are rich and diverse from both an aquatic and terrestrial perspective. They include.

- 1 Areas of endemism
- 2 Areas of high biodiversity
- 3 Strategic water source areas
- 4 A range of habitat types

A number of ecosystems within the catchment are considered endangered, critically endangered or vulnerable because of the expansion of human activities. The main stem of the Olifants is critically endangered from its source to the protected areas in the Lowveld. Almost all westerly flowing rivers found in high and middle veld are critically endangered. In South Africa, the former homeland areas are the most vulnerable to the potential loss of precious biodiversity or important ecosystems services. In Mozambique, the estuarine area near XaiXai is a National Maritime Ecosystem Priority Area and is impacted by the flow of the Olifants.

ORC - Protected Areas and Critical Biodiversity Areas



# Supporting Resilience in Our Olifants

As a result of the innovative Collaborative Resilience Assessment Process (CoRAP), AWARD has developed a collective understanding of the catchment that is critical to addressing its vulnerabilities.

This has resulted in a number of initiatives that allow the various role-players in the catchment to understand and cope with change and uncertainty and especially climate uncertainty.

**Our key support initiatives under the current phase of the project include:**

- Municipal Support Initiative
- Media Support Initiative
- Civil Society Support Initiative
- Capacity Development (Internships, Mentoring, Resilience Learning Network)
- Agricultural Support Initiative
- Blyde Ecosystem Restoration and Natural Resource Management Support Initiative

# Doing the Right Things, Better

**USAID:RESILIM-O is about building resilience through focussed, professional support and capacity development.**

AWARD recognises that building capacity is more than just training people. It involves building the capacity of institutional systems and procedures so that they function more effectively. It also involves providing tools that can be used to build the ability to work together for collective action, and commit to change and improvement.

To this end we have developed a number of initiatives called Resilience Support Initiatives. These initiatives all have one thing in common and that is to build capacity to cope with the contextual reality of sharing the Olifants Catchment, now and in the future.







“The Olifants River basin is the ‘powerhouse’ of South Africa because of all the coal mining that generates electricity. It’s home to the second-biggest irrigation scheme in the country, and it’s a massive source of tourism revenue because it runs through the Kruger National Park. It’s worth talking about.”

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## Municipal Support Initiative

Working with the local municipalities we aim to improve the preparedness and responsivity of local government to deal with natural resource degradation and the effects of climate change. One of the biggest challenges facing local governments is that of spatial planning whereby the municipality creates zones for supporting the best possible economic development options and, at the same time, protecting the precious natural resources.

“In complex socio-ecological systems there are likely to be a variety of interpretations of context, influenced by cultural means of production, science being just one.”

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## Media Support Initiative

AWARD’s work with media organisations, journalists and various publishing platforms is one way of creating awareness and ensuring information is shared. Building a crucial dialogue around the issues affecting the Olifants River Catchment, its people and associated biodiversity. Visit [www.ourlifants.org](http://www.ourlifants.org) for more on our successful media initiatives.



“Our own resilience and that of residents and stakeholders has been put to the test by the drought. This shows the challenges and future we face in a climate changing world.”

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## Civil Society Support Initiative

Civil society organisations in the Olifants Catchment have an important role to play in preparing civil society for any kind of unexpected, or even expected, change. Not only do they have an important “watchdog” role they are often involved in assisting government programmes with service delivery. This support initiative is designed, to help civilians work together to take collective action to protect natural resources and livelihoods while confronting the realities of climate change over the coming decades. USAID: RESILIM-O runs Water and Climate Change Clinics for civil society and also facilitates cycles of Indabas where Civil Society Organisations can get together and plan collective activities.

“We want to support stakeholders in government and civil society to plan collaboratively for action, to take action and to learn from reflection on their actions”

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## Agricultural Support Initiative

Support in the agricultural sector is designed to strengthen resilience and adaptation through better soil and water conservation techniques, climate change adaptation and livelihoods diversification. We have partnered with Mahlathini and Ukuvuna through a sub-grant program to assist this initiative further.



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## Blyde Ecosystem Restoration and Natural Resource Management Support Initiative

The Natural Resource Management Support Initiative speaks to the natural resource management of high priority areas that are rich in biodiversity and also strategic water resource areas.

The work, endorsed by the Department of Environmental Affairs, involves restoring ecosystems by removing aliens and managing the natural resources in the Blyde. An Invasive Alien Plant Inventory map is one of the most useful products to emerge thus far.

Another significant area of work involves securing support for the co-management of Lekgalameetse Nature Reserve, including legal support. As all provincial parks within the catchment, except one, are under land claim, finding a working model is paramount. AWARD is currently developing a guideline for Communal Property Associations governance.

“Without proper processes in place for good governance through co-management, we are at risk of losing the protection of prime biodiversity areas and the benefits that the can afford to claimants and the community.”



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We used to have

# 52 fish species

now half of these just don't occur in the system any more





## Building our Team

Internal capacity development is achieved by working with interns and mentors from organisations like the Kruger to Canyons Biosphere Reserve, Limpopo Department of Economic Development, Environment and Tourism (LEDET) to grow capacity by developing crucial skills. We have involved young graduates in the Young Professionals programme in order to give them an opportunity to learn the skills of catchment-based resource management from the diverse and skilled professionals working on the USAID: RESILIM O project.



## Progress

AWARD is involved in the development and application of innovative tools to support decision-making in the Olifants Catchment.

1. One example is software for an integrated approach to water management that works across multiple platforms.
2. Another is an integrated water quantity and quality model for the entire Olifants, an innovation that will help prioritise key areas of vulnerability.
3. Hydrological modelling for 3 climate change scenarios has also been completed. This is the first ever daily water quantity and quality model simulating climate change scenarios in the Olifants Catchment.
4. We have worked with stakeholders throughout the catchment to develop Charters that will assist in the governance of Catchment Management Forums.
5. We are developing Biodiversity Handbooks that will assist Local Government with the incorporation of critical biodiversity features into their spatial plans.
6. We are developing guides that will help practitioners see management practices as part of activity systems so that they are able to take a systems view of the work they are doing.

“Tools and products can be very seductive, but they are only as effective as the governance and management systems they are embedded in.”



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## Towards a shared vision of water governance

In addition to these various support initiatives, AWARD is also involved in water security and water resource protection in the Olifants Catchment. The organisation supports the emerging governance of the Olifants Basin and looks at the impacts of climate change on water flow and quality.

Important processes include learning exchanges with the Inkomati Usuthu Catchment Management Agency. Its international dimensions include work with ARA Sul, a strategic partner in Mozambique and The Limpopo Watercourse Commission (LIMCOM), a strategic trans-boundary partner.

Work is also under way to teach Catchment Management Forums about water resource management and climate change through “clinics” for civil society and we are generating commitment to collective action through the development of Charters.

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## Preparing for a Changing Climate

The cross-cutting nature of climate change means that it is critical to embed it in all other projects. AWARD is also building up a comprehensive repository of information on this subject.

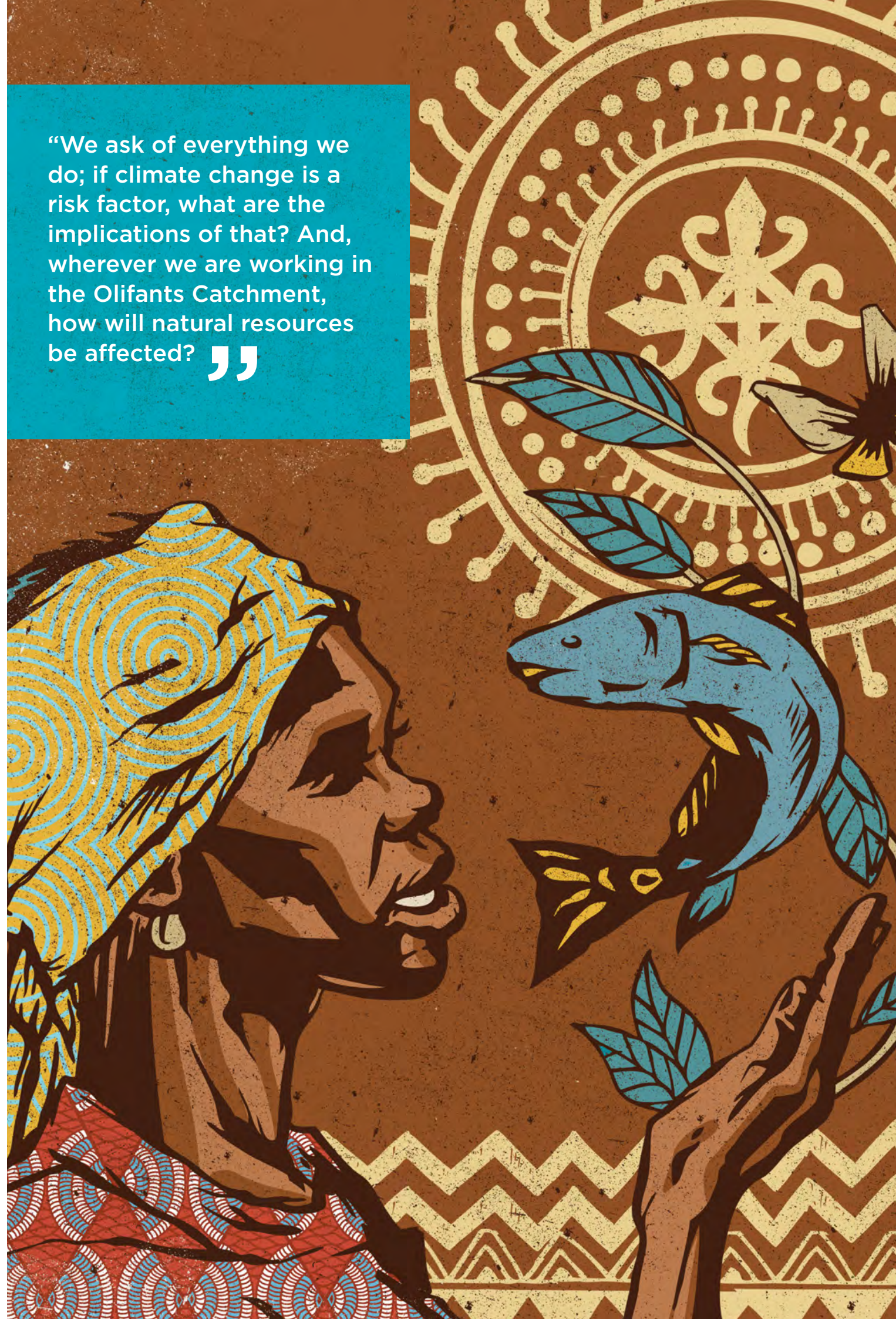
“We ask of everything we do; if climate change is a risk factor, what are the implications of that? And, wherever we are working in the Olifants Catchment, how will natural resources be affected? ”

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## Get Involved

Coordination and dialogue are central to the development of resilience. Through our work in the Olifants Catchment, we are proud to be developing new ways of addressing water and natural resource management challenges, new strategic directions for responding to climate change and new development options built on sustainable resource management. Through the Our Olifants Campaign we are building a sense of shared responsibility and identity in the catchment.

“We believe downstream users should support action further upstream and that those upstream should realise what is happening downstream. And ask ourselves, how can we work together to make the catchment more resilient? ”







info@award.org.za  
www.facebook.com/awardSA  
Tel +27 (15) 793 0503/0145

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