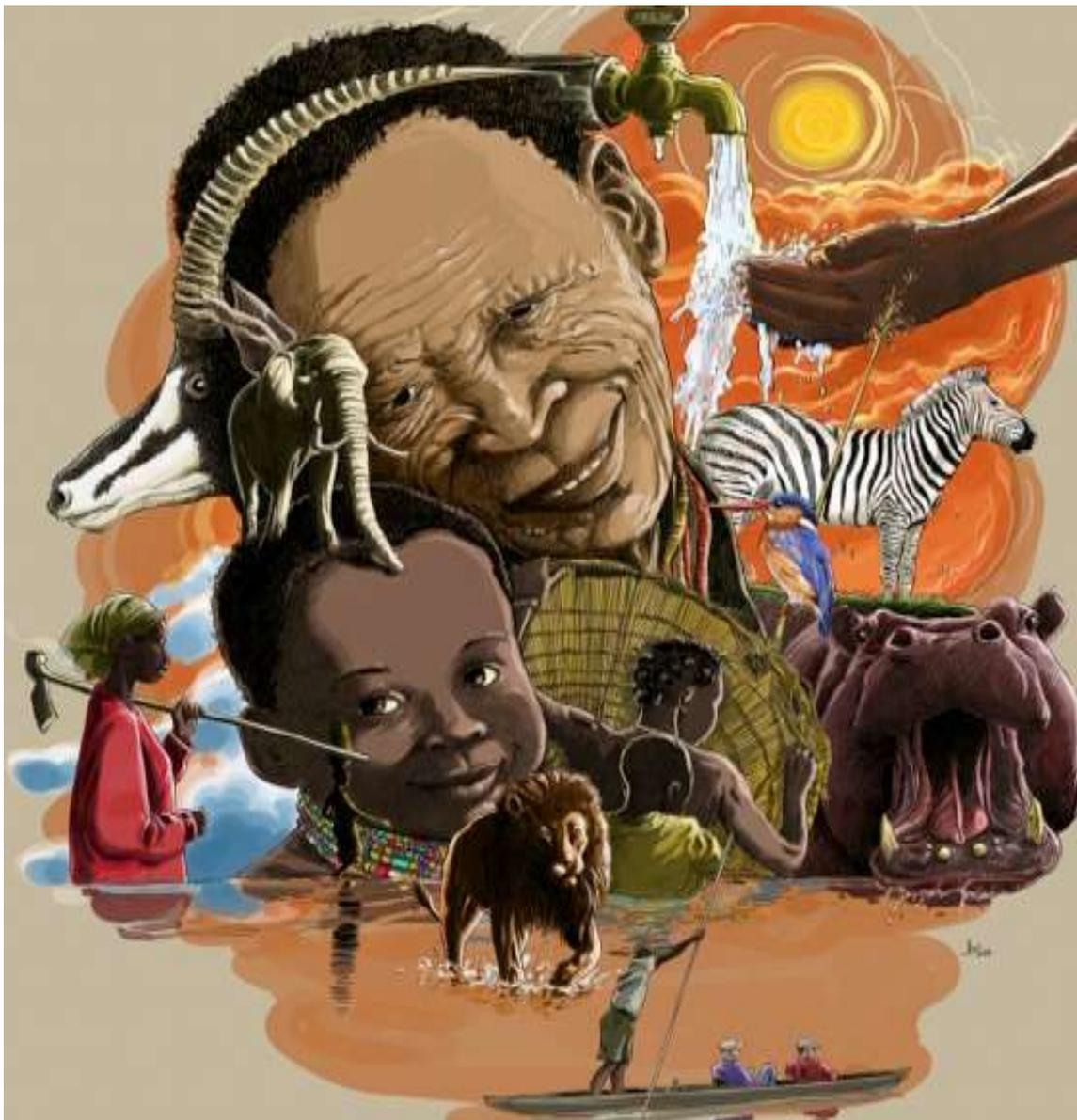




USAID | **SOUTHERN AFRICA**
FROM THE AMERICAN PEOPLE

SOUTHERN AFRICA REGIONAL ENVIRONMENTAL PROGRAM

FINAL REPORT



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SOUTHERN AFRICA REGIONAL ENVIRONMENTAL PROGRAM

Contract No. 674-C-00-10-00030-00

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ACRONYMS

ACADIR	<i>Associação de Conservação do Ambiente e Desenvolvimento Integrado Rural</i>
CA	conservation agriculture
CBNRM	community-based natural resource management
CLTS	community-led total sanitation
CORB	Cubango-Okavango River Basin
CRIDF	Climate-Resilient Infrastructure Development Facility
DWSSC	Directorate of Water Supply and Sanitation Coordination
GEF	Global Environment Facility
GIS	geographic information system
IRDNC	Integrated Rural Development and Nature Conservation
IUCN	International Union for Conservation of Nature and Natural Resources
KAZA TFCA	Kavango Zambezi Transfrontier Conservation Area
KRA	key result area
LOP	life of project
LUCIS	Land-Use Conflict Information Strategy
M&E	monitoring and evaluation
MOMS	management-oriented monitoring system
NAD	Namibian dollars
OKACOM	Permanent Okavango River Basin Water Commission
PLUS	participatory land-use strategies
RAIN	Replenish Africa Initiative
RESILIM	Resilience in the Limpopo River Basin
SADC	Southern Africa Development Community
SAF	Strategic Activities Fund
SAREP	Southern Africa Regional Environmental Program
SEA	strategic environmental assessment
SLM	sustainable land management
TDA	transboundary diagnostic analysis

TFI	Travel for Impact
UNDP	United Nations Development Programme
WASH	water, sanitation, and hygiene
WENSA	Wildlife Enforcement Network for Southern Africa

EXECUTIVE SUMMARY

The story of USAID Southern Africa's Southern African Regional Environmental Program (SAREP) has been one of working with a broad pool of partners and stakeholders in and related to the Okavango River Basin to forge relationships that allowed a large portion of the people of the basin to have better lives, now and in the future. It was the development of these strong relationships, together with extensive networking, that allowed significant additional resources to be brought to bear to compliment USAID's provision of technical support to the Permanent Okavango River Basin Water Commission (OKACOM).

“This will not be your usual conservation and development project with more and more research, but one where you will work on the ground to change and improve the lives of the people in the Okavango River Basin forever!”

— STEVE HORN, FIRST USAID CONTRACTING OFFICER'S REPRESENTATIVE FOR SAREP, JULY 2010

Between June 26, 2010, and December 17, 2016, Chemonics International implemented SAREP and provided technical support to OKACOM to enable it to meet elements of the objectives in its strategic action plan (SAP), while responding to other related needs in areas adjacent to the basin. From the onset, SAREP sought to integrate its activities with the SAP, which in mid-2010 had only just begun to be formulated. SAREP supported this formulation by funding development of national action plans (NAPs) by each of the three riparian states — Angola, Botswana, and Namibia — which guided SAREP's prioritization of areas of support to each country while integrating these activities into the broader SAP. Based in Gaborone, Botswana, the program operated from satellite offices in each of the three riparian countries: Maun in northern Botswana, Rundu in northeast Namibia, and Menongue in southeast Angola.

Previously, USAID/Southern Africa worked with the Water Sector of the Southern Africa Development Community (SADC), to provide technical support to OKACOM to create a permanent secretariat that would enable the commission to operate more effectively and manage its activities according to a strategic plan. Between 2004 and 2008, technical support was provided to OKACOM through USAID/Southern Africa's Integrated River Basin Management Program, which established the foundation of the current secretariat that manages the day-to-day affairs of the commission.

At the conclusion of the program, USAID worked with the commission to develop a follow-on program designed to enable it to carry out activities on the ground in response to strategically important needs identified by the three basin states, resulting in SAREP. A five-year program was designed, with an initial three-year element and an optional two-year additional component based on performance and traction achieved in the initial phase. The major areas of focus agreed on for SAREP included strengthening

of OKACOM and its related organs, enhancing the commission's ability to protect biodiversity and ecosystems in the basin, facilitating better access to drinking water and sanitation, helping vulnerable groups adapt to climate change, contributing to improvement of communities' livelihoods, supporting the capacity for improved planning at all government levels (local, national, and transboundary), and contributing to spreading awareness about HIV-AIDS in Botswana's northern districts.

Additional funds covering three years of operation were made available to SAREP from USAID/Namibia to carry out biodiversity-related activities to support the Zambezi Region (formerly the Caprivi Strip) in northeast Namibia. Working through the local conservation and rural development NGO in the area — Integrated Rural Development and Nature Conservation (IRDNC) — several areas of concern were addressed in that region through SAREP's involvement.

SAREP started on June 26, 2010, and staff were recruited, offices obtained, and furniture, infrastructure, and equipment procured. An inception workshop was held in October 2010 with OKACOM and its related bodies, as well as with potential partners and stakeholders. A five-year plan of action was developed and agreed on with OKACOM, leading to annual plans of action being developed and approved by OKACOM each year. Initiating the program was slower generally than expected, however, given that OKACOM itself was still assembling its secretariat's functionality, hiring staff and had just completed a huge program of transboundary diagnostic analysis (TDA) research and finalized the structure of its SAP, with requirements that SAREP's program of action should respond to needs identified in these processes. Once the finer details of responses to the priorities outlined in the three NAPs and the SAP were negotiated, greater traction was obtained in Years 2, 3, 4, and 5.

A great deal of emphasis was placed on creating and maintaining strong relationships with OKACOM, its secretariat, and its related bodies, such as the Okavango Basin Steering Committee, technical task forces (biodiversity, hydrology, and institutional), and sister funding or development agencies such as the United Nations Development Programme (UNDP), World Bank, and GIZ. as a means of delivering efficiently and effectively while leveraging additional resources to allow optimal achievements against the SAP.

At the completion of the initial three-year phase, SAREP had shown great progress toward meeting its five-year life-of-project (LOP) indicators. Of the 20 indicators set (18 main indicators and two additional ones for the Namibia buy-in component), 11 had been completed to within 80 percent of targeted numbers for the LOP, and of these, nine had exceeded 100 percent of expected targets levels set, with five achieving more than 150 percent of the targets. A mid-term evaluation was carried out, and given the positive report submitted, USAID agreed to award the second phase of an additional two years of operation.

As OKACOM evolved and solidified its operational parameters over the life of SAREP, a major process of growth was achieved within OKACOM through the influence of

USAID, concerning an original approach used by the commission in which each donor or funding agency, later called international cooperating partners, was treated as a separate and competing agency. Over the life of its project, USAID leadership encouraged the commission to view all international cooperating partners as a single, united, and integrated support function and that they should be managed as a block to promote transparency and inclusiveness. During its second phase, SAREP continued to perform well, with its achievement levels showing that 15 of the 20 indicators' LOP targets had exceeded 100 percent, and a further two were at a level of more than 80 percent achievement. However, given the initial slow start of the program, USAID/Southern Africa thought there was merit in making the case to provide an extension to SAREP's initial five years of operation to enable it to respond to new and emerging opportunities. As a result, a one-year costed extension was awarded to the value of \$4.1 million, covering October 2015 through September 2016, with the range of indicators reduced to 10 key focus areas of interest to USAID/Southern Africa and target levels for many of these adjusted to match proven performance rates. Again, SAREP staff responded and worked to achieve required target levels by the end of September 2016, with all 10 indicators being achieved at levels exceeding 100 percent of targets set, five by more than 140 percent.

The doors to SAREP offices closed officially on September 30, 2016, with the program having improved the lives of many thousands of people across the Cuando-Okavango River Basin as planned: more than 30,000 people having access to access to improved drinking water, more than 35,000 people with access to improved sanitation services, more than 15,5 million hectares of land under improved natural resources management, more than 13 million hectares of biologically important land under improved management, more than 7,361 people with increased economic benefits derived from sustainable natural resource management and conservation, 35,849 people with increased adaptive capacity to adapt to the impact of climate change, four organizations and institutions with improved capacity to address climate change issues, and 13 laws, policies, strategies, plans, or regulations addressing climate change mitigation or adaptation and/or biodiversity conservation officially proposed or adopted. This is a level of achievement that the dedicated and committed team of SAREP and USAID/Southern Africa's staff can be proud of.

But possibly of greater importance is the fact that during SAREP's tenure, OKACOM evolved from being a fledgling organization with emerging capacity to manage its operations and activities to a mature and functional body with a strong strategic vision, clear management procedures, and a strong capacity to cooperate and collaborate with a greatly broadened suite of supporting development agencies, compared to the two or three it was relying upon in 2010. This hugely enhanced level of sustainability bodes well for the ability of the commission to carry out its mandate effectively into the future.

SECTION I

PROJECT CONTEXT

The Okavango River rises from the headwaters of the Cuito and Cubango Rivers in the highland plateau of Angola and flows through the northeastern areas of Namibia, eventually delivering its water into the Okavango Delta in northern Botswana. The full topographic extent of the Cubango-Okavango River Basin (CORB) comprises about 700,000 square kilometers. It derives its principal flow from 120,000 square kilometers of hydrologically active sub-humid wetland and semi-arid rangeland in the Cuando Cubango Province of Angola. The population in the hydrologically active basin totals more than 1 million people. By 2025, this is projected to increase to more than 1.28 million people, with 62 percent living in Angola, 16 percent in Botswana, and 22 percent in Namibia.



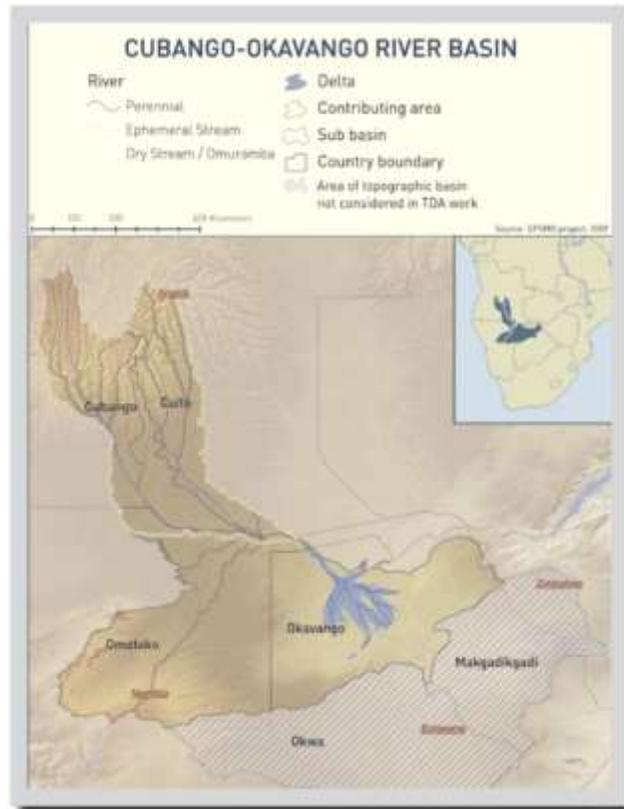
Polling a dugout mokoro boat across a lagoon in the Okavango Delta. (Photo: Steve Johnson)

The Okavango River ends in one of the world's few endorheic deltas¹ with a nearly pristine character. The basin is recognized as an internationally important site of biodiversity and biological production. It is host to two Ramsar sites, or wetlands of international importance: the Okavango Delta in Botswana and the contiguous Bwabwata-Okavango Ramsar Site in Namibia. The wetland environment of the delta

¹ An endorheic basin is a closed drainage basin that retains water and allows no outflow to other external bodies of water, such as rivers or oceans, but converges instead into lakes or swamps, permanent or seasonal, which equilibrate through evaporation.

provides a staging post for birds migrating to and from the rest of Africa and is one of Africa's major sites of ornithological importance as a breeding ground for vast numbers of waterfowl. The Okavango Delta is the best-known feature of the river basin and the mainstay of the \$1.5 billion tourism industry in Botswana, the second-largest source of foreign income for the country.

EXHIBIT 1. THE CUBANGO-OKAVANGO RIVER BASIN WITH ITS HEADWATERS IN THE HIGHLANDS OF SOUTHEAST ANGOLA (SOURCE: OKACOM TDA)



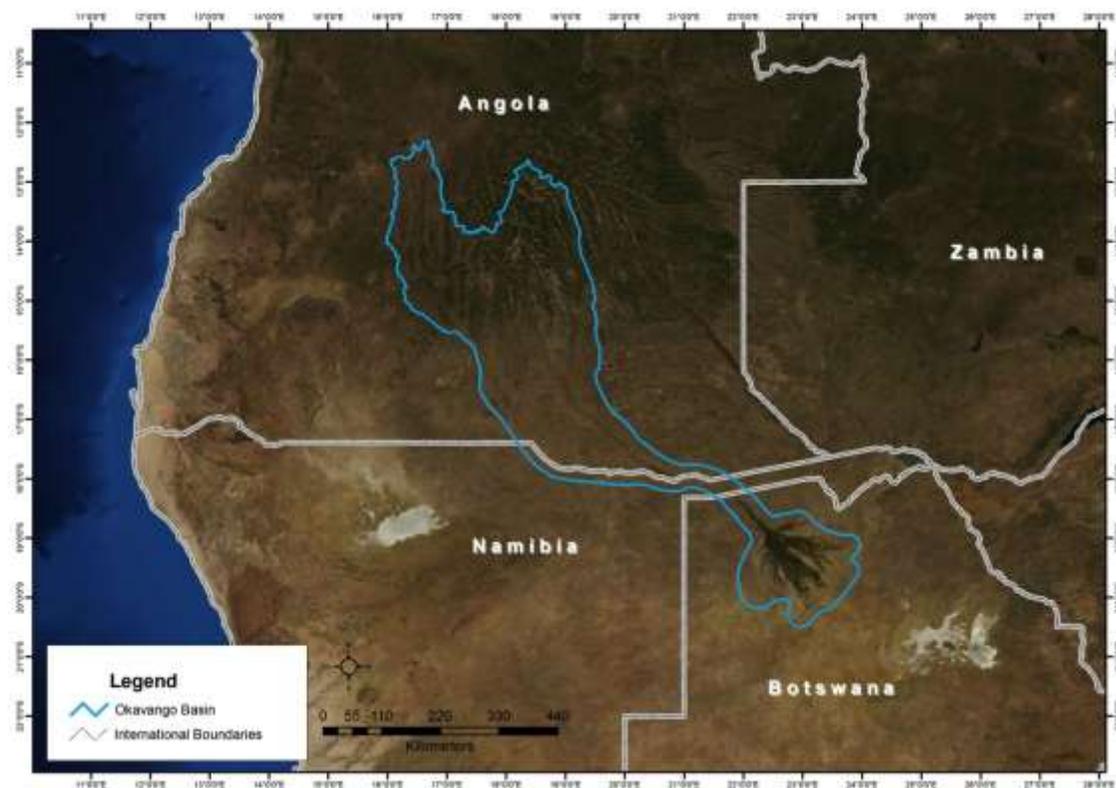
In recognition of the fact that upstream developments in the basin may have an impact on resources downstream, in 1994, Angola, Botswana, and Namibia signed an agreement establishing the Permanent Okavango River Basin Water Commission. The agreement commits the member states to promote coordinated and environmentally sustainable regional water resources development, while addressing the legitimate social and economic needs of each of the riparian states. The role of OKACOM is to anticipate and reduce any unintended, unacceptable, and often unnecessary effects that occur due to uncoordinated development of resources. Its objective is to act as technical advisor to the governments of the three states on matters relating to the conservation, development, and use of the resources of common interest to the basin member states.

Angola, as the upstream water-rich riparian country, was involved in a civil war for more than three decades. The conflict resulted in destruction of important infrastructure, massive loss of human life, and prevention of basic development, especially in the CORB. There are clear indicative plans and interests to boost

investments in the mining sector (such as oil and diamond) as well as in agriculture, fisheries, and tourism. To ensure sound river basin management, Angola has embarked on institutional reform of the water sector and development of a national master water plan.

Namibia has the driest hydro-climatic conditions in the region, making it highly dependent on groundwater and transboundary river systems on its southeastern and northern borders. Although a relatively small section of the CORB is incorporated into the “active” basin context within the Kavango Region, a significantly larger area of land factors into the more extensive “mega” basin context, in which groundwater is of immense significance to the use-value and productivity of land. The Kavango and Zambezi (formerly Caprivi) regions are relatively densely populated (4 people/square kilometer and 5.5 people/square kilometer, respectively) with moderately dense livestock populations that are dependent on the Okavango River² and its floodplains. Irrigation agriculture is increasing along the river, with significant concerns about the required volume of water abstraction and a potential increase in levels of chemical pollution in the river if concerns are not addressed.

EXHIBIT 2. THE OUTLINE OF THE ACTIVE PORTION OF THE CORB (SOURCE: OKACOM TDA)



² Also known as the Kavango River in northeast Namibia.

Botswana accounts for the lower end of the river basin system. The Okavango Delta is one of the most biodiversity-rich wetland ecosystems in the world, with significant social, economic, and ecological value. Its protection and conservation are of paramount importance nationally and internationally, and depend strongly on upstream conditions — especially in Angola — to maintain the desired flows for wetland ecosystem integrity. Botswana’s Vision 2016 identifies water and water resources development, conservation, and protection as challenges and opportunities for sustainable growth, diversification, and socioeconomic development. The expansion of tourism and agriculture is identified clearly as a priority of the National Development Plan 2010-2016.

The population in the basin in 2010 was 921,890. By 2025, this is projected to increase to more than 1.28 million, with 62 percent living in Angola, 16 percent in Botswana, and 22 percent in Namibia. Throughout the basin, there is a trend toward increasing urbanization associated with population growth and a lack of alternative livelihood options. Although the population in the basin is predominantly rural, Angola has an urban population of about 40 percent, Botswana 30 percent, and Namibia 20 percent. Increased urbanization leads to increased demand for services such as water supply and sanitation, which, if not regulated, could lead to increased water pollution.

The basin supports predominantly rural communities most often located adjacent to the river or along roads. In general, the people of the basin are poorer, less healthy, and less well-educated than other groups in their countries. This is particularly the case in Angola, where the war curtailed social and economic development. Households throughout the basin grow crops. In Angola, crop production is the most important source of household income and food, representing some 80 percent of household income. The sub-humid and humid climate there makes it possible to grow crops in upland areas. In the lower semi-arid parts of the basin on the border between Angola and Namibia, as well as in northwest Botswana, the planting of crops is traditionally carried out on floodplains, where additional wetness and fertility enhance yields by some 40 percent. Crop production is small-scale in gardens, with tillage largely by hand or draught livestock. Increasingly, due to the demands for land and population growth and resettlement, larger fields beyond the floodplains and in the adjacent woodlands are cleared to grow cereal crops through rainfed agriculture, although these are not very productive due to the infertile soil conditions away from the floodplains and frequent droughts.

Livestock are important for households in the lower basin. They provide a range of household goods, such as meat, milk, and draught power. They also have cultural and economic value. Fishing in the river systems is an important source of protein and economic activity, while wetland plants such as papyrus, reeds, and bulrushes are used in construction, basket weaving, and other household functions. In some of the more arid areas of southeast Angola and northeast Namibia, parts of wild plants such as the tubers of devil’s claw are harvested, dried, and processed to be sold to traders in Namibia, who sell it into European markets for its medicinal properties.

The SADC Water Division guides the harmonization of national policies and the implementation of activities by all stakeholders in southern Africa, where 70 percent of the water resources are shared across national boundaries. The shared nature of this resource means water development and management is not just a national task but a regional one as well. The division consolidates water-related policy provisions in SADC documents and facilitates coordination on water-related management issues at regional, river basin, and national levels, principally through a suite of river-basin organizations or commissions. Furthermore, the division creates an enabling institutional environment that enhances the participation of all stakeholders.

Between 2004 and 2008, USAID assisted OKACOM as a river-basin organization in developing its secretariat through the Integrated River Basin Management Program. This secretariat has become fully functional over the past 10 years and now guides and supports the commission in most of its dealings and decision-making.

The three countries had always intended to develop the basin for the benefit of its people, but in a way that was sustainable and did not threaten the ecological and environmental health of the river system. To help OKACOM plan responsibly, the commission carried out a transboundary diagnostic analysis of the basin between 2008 and 2010, through the UNDP-funded Environmental Protection and Sustainable Management of the Okavango River Basin Project, which summarized the state of the basin, its natural environment and people, and the macro-economic status of the basin with its governance structures. This information allowed the identification of a series of possible pathways, or scenarios, which development could take in the future.

Four priority emerging transboundary areas of concern were identified during the TDA process: variation and reduction of hydrological flow, changes in sediment dynamics, changes in water quality, and changes in the abundance and distribution of biota. Four underlying driving factors were identified that influenced these four concerns: population dynamics, land-use change, poverty, and climate change.

In 2008, USAID worked with OKACOM to develop a follow-on program to the former Integrated River Basin Management Program, responding to the commission's needs. SAREP was designed to cover the stated areas of priority, resulting in five key result areas (KRAs) of technical support:

- Improved cooperation and management of shared river basins
- Biodiversity and ecosystem services monitored and protected
- Access to safe water supply and sanitation
- River basins managed in the context of global climate change
- Regional, national, and local development planning capacities around river basins (for land and water use, biodiversity conservation) strengthened

Given that the program was heavily based on the provision of technical support to OKACOM, a key element of the KRAs was the requirement to leverage additional

funding support to provide infrastructural assistance by working with associated donor agencies and funding processes to achieve intended outcomes.

In mid-2010, SAREP came into being with its main management office in Gaborone, Botswana, and its major technical office in the village of Maun adjacent to the Okavango Delta. Satellite offices were established in Rundu, a town in northeast Namibia, and in Menongue, the capital of the Cuando Cubango Province in southeast Angola.

Activities were expanded to other basins and sub-basins in response to needs, opportunities, and synergies with other donors, comparative advantages of the parties, and funding. Extensive work was completed in the neighboring Luiana-Kwando Sub-basin and associated ecosystems through Integrated Rural Development and Nature Conservation based in the Zambezi Region in northeast Namibia. This sub-basin shares a landscape with and interacts ecologically with the Okavango River Basin.

SECTION 2

STRATEGIC APPROACH AND PROGRAM MANAGEMENT

STRATEGIC THRUST OF THE PROGRAM

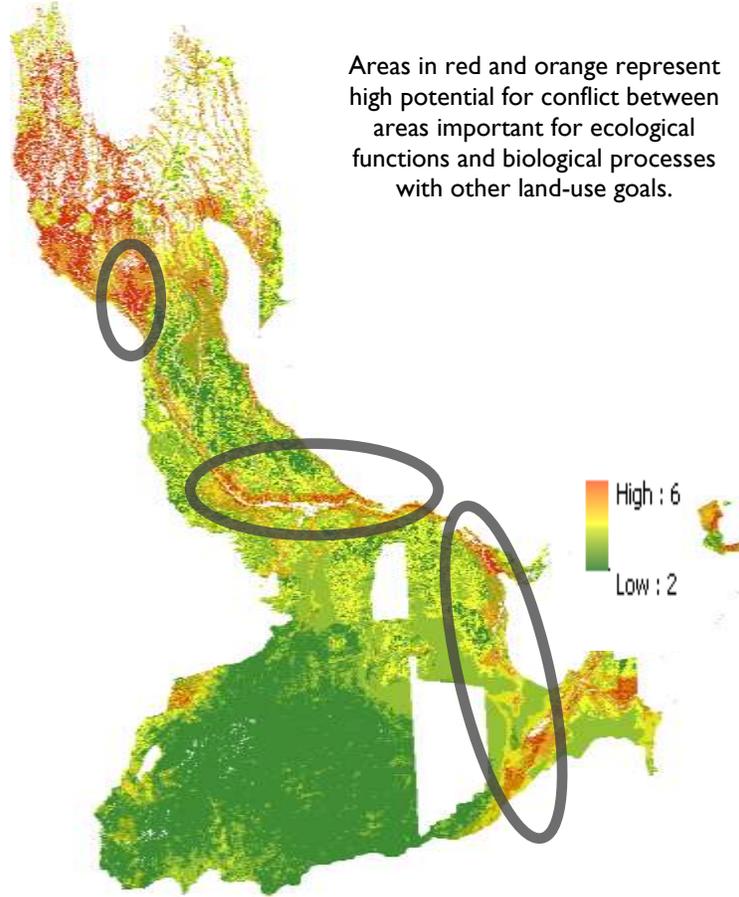
During the early stages of SAREP, it was realized that certain areas of its geographic footprint were more socially and ecologically sensitive than other areas. These areas were key ecosystem and biological hotspots, critical for certain ecological processes and function or with the potential to affect land and resource management through social processes such as settlement, unsustainable use of natural resources, and land-use practices that degraded the environment.

To address this strategically required identifying exactly which communities should be worked with in focused units or clusters and then applying the program's limited resources accordingly. SAREP deployed the GIS-based decision-support tool the Land-Use Conflict Identification Strategy (LUCIS), developed to identify the most sensitive hotspots of potential conflict. This approach resulted in identification of zones of communities in each of the three riparian countries (see ovals in Exhibit 3 below), where competing land-use processes, such as agriculture, settlement growth, infrastructural development, and biodiversity protection, resulted in potential sites of looming tension and conflict.

Within each basin state's zones, further sub-sets of areas of sensitivity were identified using criteria relating to the program's ability to respond to support needs based on logistics and the availability of SAREP's field staff, transport, and capacity to reach communities. These were then prioritized for support by the program and organized into clusters of three to five communities each. This process identified 10 community clusters in the Okavango Delta in Botswana, 10 community clusters in the Kavango Region of northeast Namibia, and 15 clusters in southeast Angola for support. Each of these clusters was assisted to develop participatory land-use strategies so that the most appropriate use of land and resources could be determined by the communities themselves, and through this, they could be guided to zone their land to minimize competing and conflicting land-use practices.

Because most communities in the clusters depended heavily upon rainfed subsistence agriculture, which is exposed to the impact of climate change, as well as increasing human-elephant conflict, the participatory land-use strategy process also assisted them to identify alternative and diverse livelihood strategies as a means of adapting to the emerging impact of climate change, including conservation agriculture (CA), harvesting of wild plants such as devil's claw, production of arts and crafts, and training communities to monitor use of their land and natural resources using a management-oriented monitoring system (MOMS).

EXHIBIT 3. LAND-USE CONFLICT HOTSPOTS IN THE CORB

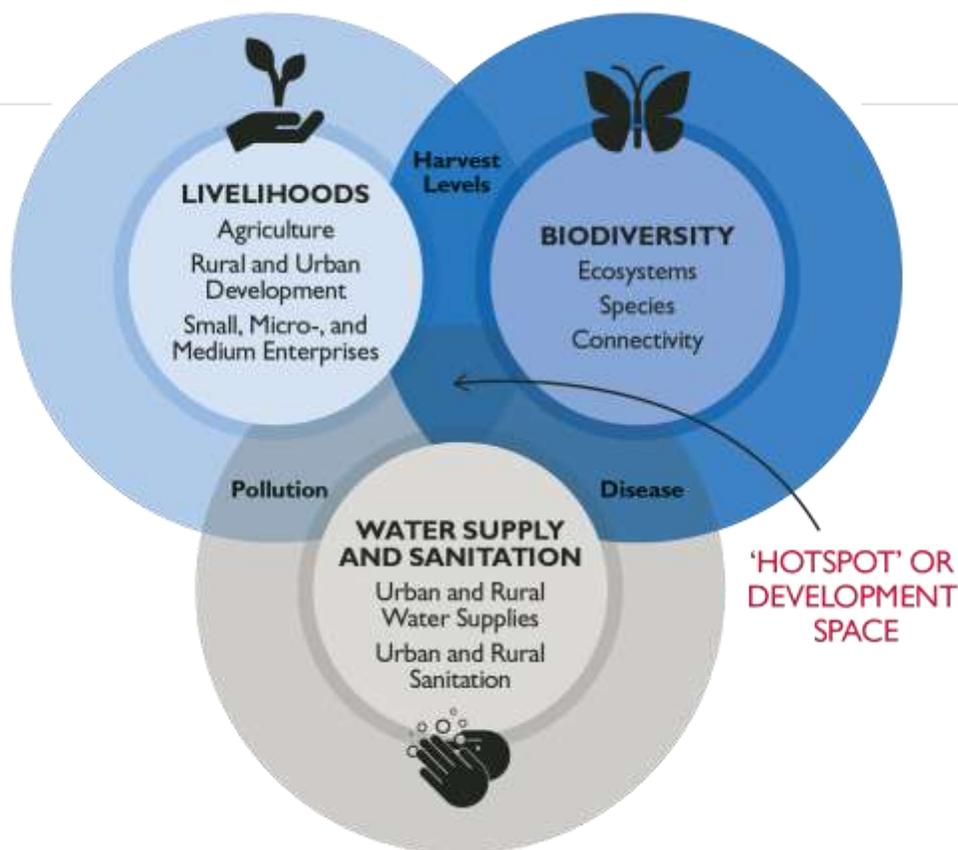


Further strategic thinking as to the programmatic approach that would most effectively guide the achievement of USAID’s goals included creation of a development model that encompassed the key pillars of intervention across the basin. The following nexus was agreed on at an early stage and used as a beacon to prioritize allocation of resources. Using this model, the program was able to integrate its programmatic activities and support many communities to improve their livelihoods and their management of natural resources and to adapt to climate change.



Community members in southeast Angola engaged in conservation agriculture, preparing land by measuring the distances between basins, making basins, and mulching. (Credit: SAREP)

EXHIBIT 4. THE BIODIVERSITY/LIVELIHOODS/WATER SUPPLY AND SANITATION DEVELOPMENT NEXUS



PROJECT IMPLEMENTATION AND KEY PARTNERS

SAREP was implemented by a consortium of international, regional, and local organizations, led by Chemonics International. The consortium leveraged extensive practical experience working with and through government institutions, civil society organizations, and communities to strengthen management of natural resources — integrating water supply and sanitation, conserving biodiversity, and adapting to climate change — and improve livelihoods.

Policy and technical functions. Policy and technical functions were strategically managed by the chief of party, and operationally managed by the chief of party, deputy chief of party, and operations manager in consultation with the OKACOM Secretariat.

The relevant institutions at regional, national, and community levels were responsible for management of related functions in the CORB. At the transboundary and national level, the functions of the project provided support to stakeholders in strategy, planning, and policy development.

At lower levels of governance, SAREP's functions supported stakeholders in the public sector, civil society, and communities in understanding transboundary and national policies, strengthening local governance, as well as planning and implementation. These functions also supported coordination with other development programs to ensure synergies were realized and additional resources leveraged to enhance SAREP activities.

The implementing consortium provided key long-term technical personnel on a full or part-time basis, as deemed most appropriate, to design and implement project activities. They were supported by a qualified team of local support personnel in each office. Where necessary, short-term technical assistance was mobilized on a project basis from within the consortium or through partnerships.

Regional community program function. SAREP's activities at the community level were implemented through ongoing project-based partnerships with local NGOs, which were selected competitively and in consultation with relevant country governments and engaged through subcontracts and grants, with the appropriate engagement mechanism driven by the nature of the work. SAREP's primary partner organizations working at the community level included:



- Angola: *Associação de Conservação do Ambiente e Desenvolvimento Integrado Rural (ACADIR)*
- Botswana (Ngamiland): Kalahari Conservation Society
- Namibia (Kavango Region): Namibia Nature Foundation
- Namibia (Caprivi Region): Integrated Rural Development and Nature Conservation

This approach was successful, not only in providing effective rural development and conservation services to remote communities, but also in strengthening the capacity of the NGOs engaged through providing management advisory services, enhancing the skills of their technical field workers, and funding critical activities that enabled the organizations to be sustainable into the future.

SECTION 3

MAJOR PROGRAM ELEMENTS: SAREP HIGHLIGHTS AND ACHIEVEMENTS

SUMMARY OF KEY TECHNICAL RESULTS AND ACHIEVEMENTS

IMPROVING COOPERATIVE MANAGEMENT OF THE RIVER BASIN

- Nine science-based systems improved at regional/national level
- 463 people within basin-related institutions trained
- Nine basin-related institutions providing improved services
- Strengthening the coordinating capacity of the OKACOM Secretariat
- Establishing strategies, such as the payments for ecosystem services model, to ensure the continued functionality and sustainability of OKACOM
- Introducing science-based decision support tools such as LUCIS to improve development planning and optimize land-use allocation



PROTECTING BIODIVERSITY IN THE CUBANGO-OKAVANGO RIVER BASIN

- 54 threat assessments developed and monitored
- 2,625 people trained on natural resource management and/or biodiversity conservation
- 42 community-based natural resource management plans developed and implemented
- 16.5 million hectares under improved natural resource management
- 13.7 million hectares of biologically important area placed under improved long-term protection through protected area management plans
- 35 communities across the basin educated on alternative livelihoods strategies that are biodiversity friendly
- 7,998 people engaged in conservation-based, income-generating activities
- \$15.7 million leveraged for sustainable management and conservation of biologically important areas
- Wildlife protected through integrated strategies that improve community welfare, lessen reliance on natural resources, and enhance resilience in the face of climate-caused crises
- Knowledge expanded on biodiversity to inform conservation initiatives and priorities throughout the CORB



IMPROVING COMMUNITY ACCESS TO SAFE WATER SUPPLY, SANITATION, AND HYGIENE

Improved Water Supplies

- 30,535 people across the CORB with improved water supplies
- 2,690 people in Nyangana and Karukata, Namibia, with improved water supplies
- 6,145 people in Karutci, Masvivi and Kayangona, Namibia, with improved water supplies
- 13,112 people in the Kavango Region of Namibia with improved water supplies through the Coca-Cola Replenish Africa Initiative (RAIN) and Directorate of Water Supply and Sanitation Coordination (DWSSC) partnership
- 7,470 people in the Kavango Region with improved water supplies through a partnership with the Namibia Red Cross Society
- Groundwater risk assessment for 11 community boreholes in northeast Namibia
- 161 completed water allocation plans for different communities in northeast Namibia
- 5,260 people in Caiundo, Angola with improved water supplies
- Completed a survey of 24 water supply infrastructure installations in Cuando Cubango Province of Angola using the SAREP-developed condition assessment tool



IMPROVED ACCESS TO SANITATION

- 35,510 people across the CORB with improved sanitation services
- 7,470 people in northeast Namibia with improved sanitation as a result of development of pit latrines through collaboration with the Red Cross
- 9,800 people in Namibia with improved sanitation services thanks to the community-led total sanitation (CLTS) program
- 3,604 people in southeast Angola with improved sanitation services through the CLTS program
- 3,066 people in Ngamiland with improved sanitation services through the CLTS program
- More than 5,000 school children benefiting from improved sanitation services in school as a result of the water, sanitation, and hygiene (WASH) management program
- Three wastewater infrastructure facilities in the North West District assessed with recommendations for rehabilitation



MAKING THE RIVER BASIN AND ITS PEOPLE MORE RESILIENT TO GLOBAL CLIMATE CHANGE

- More than 36,000 people with increased adaptive capacity for climate change
- 15 tools adopted to manage climate-caused crises
- 14 Institutions with improved capacity to address climate change issues



- 13 laws, policies, strategies, plans, or regulations addressing climate change mitigation or adaptation officially proposed or adopted
- Alternative livelihoods strategies adopted and implemented by basin communities, resulting in small, medium, and microenterprise development and decreased reliance on natural resources
- 11 communities less vulnerable to climate-induced crises through flood-preparedness plans
- 204 people in Namibia, more than 1,150 in Angola, and 171 in Botswana trained on improved farming practices, also known as conservation agriculture
- 690 people in Namibia and 300 in Angola trained on sustainable harvesting techniques for devil's claw

IMPROVING THE COOPERATIVE MANAGEMENT OF THE RIVER BASIN

A key role of OKACOM is to advise the three riparian states about the best possible use of the river's natural resources. SAREP worked with the commission to assist in developing a set of critical priorities for livelihoods and socioeconomic development, water resources management, land management, and environment and biodiversity. These national action plans for Angola, Botswana, and Namibia fed into completion of the overall trilateral strategic action plan and prioritized actions that each country thought were important to carry out as nation states in contributing to achievement of the plan. These national action plans formed the basis for SAREP's successive annual plans of action to OKACOM in delivering on USAID's technical support to the commission. A key need of the commission was found to be its financial sustainability as an organization, above and beyond annual contributions from each country, and minimizing its dependency on donor support in the long term. To enable the OKACOM secretariat to become financially viable and sustainable, SAREP developed a detailed concept for an endowment fund that was founded on the basis of a payments for ecosystem services model. The concept for the fund was approved by the commission, with the World Bank continuing with the set-up and implementation phase post-SAREP, which will



RESULTS AND LEGACIES

- Nine science-based systems improved at regional/national level
- 463 people in basin-related institutions trained
- 161 improved water allocation plans
- Nine basin-related institutions providing improved services
- Strengthened coordinating capacity of the OKACOM Secretariat
- Establishing strategies, such as the payments for ecosystem services model, to ensure continued functionality and sustainability of OKACOM
- Introducing science-based decision support tools such as LUCIS to improve development planning and optimize land-use allocation

lead to donated funds being invested in a managed fund, where the annual interest is used to carry out operational activities of OKACOM and implement national action plan/strategic action plan activities on a sustainable basis.

As a means of strengthening the capacity of OKACOM and its related bodies, SAREP introduced the commission to a new GIS-based decision-making tool called the Land-Use Conflict Identification Strategy, which was designed to identify key areas across the basin where land-use conflicts might occur. LUCIS thus allows OKACOM to target interventions appropriately. SAREP also introduced LUCIS to the Ngamiland District Land Board, which adopted the process as the central planning and land allocation mechanism for its sub-land boards, contributing to a significant drop in human-wildlife conflict and in a more rational approach to allocation of land generally.

Support to strengthen the capacity of OKACOM was also given in the form of developing, among other activities:

- A draft notification mechanism where each riparian state would notify the other two countries of any intention to undertake significant development that might have a negative environmental, social, economic, technical, or political impact, based on the existing SADC Water Protocol
- A strategic environmental assessment (SEA) of the Okavango Delta
- A transboundary fisheries policy and management plan
- A training course on conflict management and negotiation skills

PROTECTING BIODIVERSITY IN THE CUBANGO-OKAVANGO RIVER BASIN

“The Cubango-Okavango River Basin remains one of the basins least affected by human impact on the African continent. In its present near-pristine status, the river provides significant ecosystem benefits both within the basin and across the region and, if managed appropriately, can continue to do so well into the future. However, mounting socioeconomic pressures on the basin in the riparian countries, Angola, Botswana and Namibia, over the past twenty years were seen as a challenge that could change its character and therefore there was a critical need to establish sustainable management of its resources. The riparian countries recognize that economic and social development within the basin is essential, but that it needs to be balanced against the conservation of the natural environment and goods and services currently provided. This requires basin wide understanding and agreement of the basin’s problems and issues, followed by broad agreement on an appropriate and sustainable development pathway.” (OKACOM TDA: 2012)

SAREP’s approach to supporting OKACOM in conserving the biodiversity and ecosystem services of the Cubango-Okavango River Basin rested on three pillars: 1) identification, monitoring, and mitigation of threats to biologically important areas; 2) engaging communities to participate in confronting critical threats to biodiversity while improving their welfare; and 3) leveraging resources for sustainable management and conservation of biologically diverse areas.

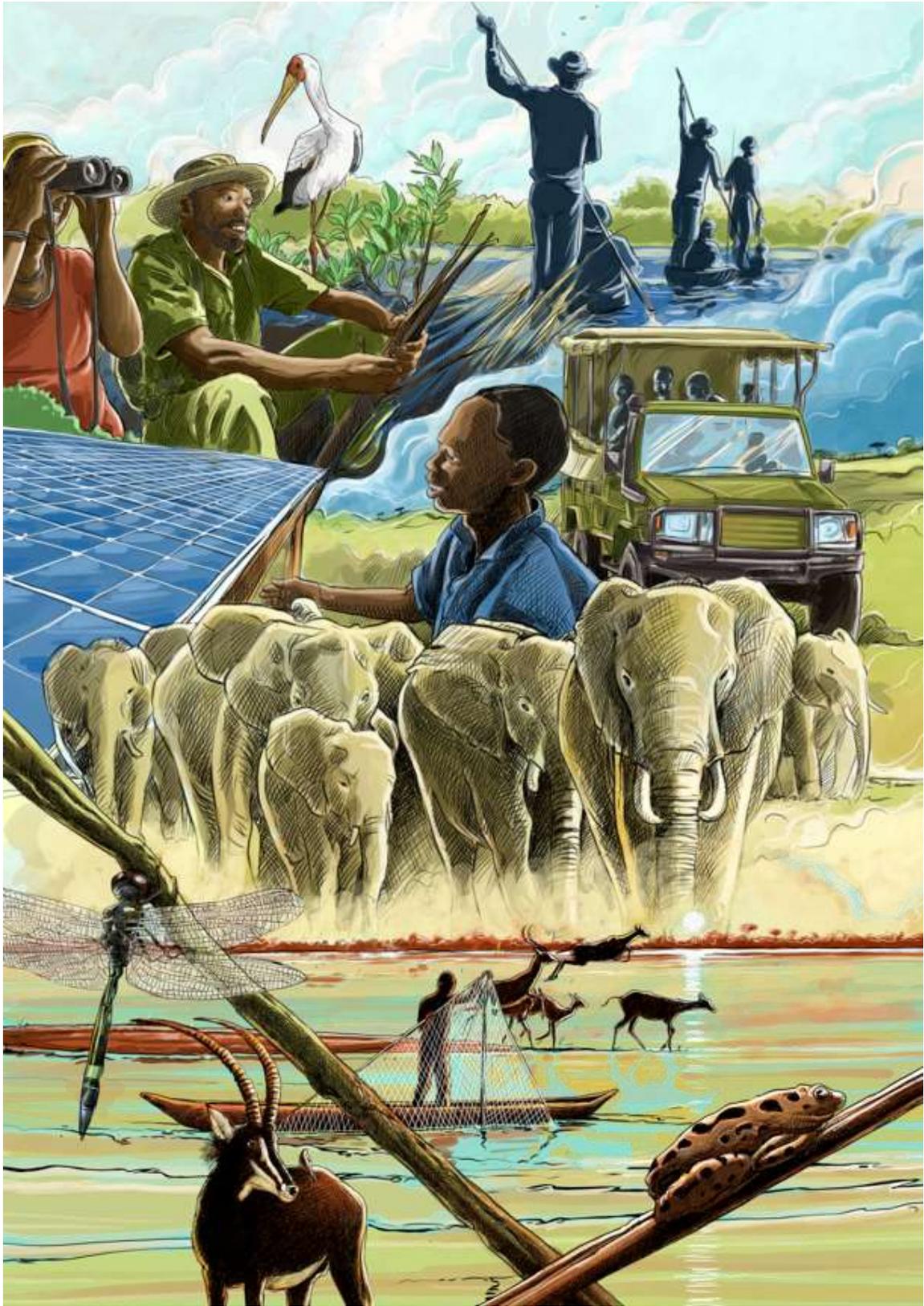


EXHIBIT 5. SAREP DEPUTY CHIEF OF PARTY/INTEGRATED NATURAL RESOURCES MANAGEMENT SPECIALIST CHRIS BROOKS DESCRIBES THE PROGRAM'S TRANSBOUNDARY THINKING



At the same time, SAREP set out to improve the cooperative management of the river basin and enhance regional, national, and local development planning around river basins by establishing science-based systems to support regional planning and water allocation and enabling institutions to provide more effective services for basin-scale planning and biodiversity conservation.

To strengthen the scientific base for decision-making by building the knowledge on existing biodiversity and ecosystem services baselines, SAREP conducted several initial studies and assessments.

To provide insight on the threats to biological resources throughout the CORB and inform appropriate activities to protect vulnerable resources, SAREP conducted three significant assessments: a rapid ecosystems health assessment and a biodiversity threat assessment in 2011 and the first multi-taxa biological field survey of the upper catchment in 2012. The first was carried out considering the fact that the CORB was not an island void of influence from factors outside of the basin and that many systems and factors external to the basin had direct or indirect effects upon it. It was therefore necessary to understand some of these influences and factor them into the decision-making and management of the catchment. The findings, which were compiled through an iterative process called [the Delphi Technique](#) with regional social and ecological experts, indicated that Namibia, in relation to the other countries, appears to be proactive in its management of key ecosystems, with strong institutional and public support, and is well funded and in a position to bring communities into the management of resources through a comprehensive community-based natural resource management (CBNRM) approach. Although most of the wildlife systems scored high, the Eiseb-Ondjou system appears to be in a state of collapse because community and political will are absent. Botswana exhibits strong political will and strong community support and yet, it is clear from the country comparisons that the southern (Kalahari) and central wildlife systems of the Makgadikgadi Pans, particularly Sua Pan, are close to ecological collapse due to loss of key system components, such as ecological connectivity and

incursion around its periphery with increasing pressure for land-use change. It appears from the results that due to historical processes, Angola and Zambia have limited political capacity to protect wildlife systems, although Angola has demonstrated significant political will to do so through its process of promulgating a sizable portion of the southeastern part of the country (68,000 square kilometers)³ as a protected area, but it has little public support, probably due to an historical absence of CBNRM institutional frameworks.

The second assessment was a comprehensive desktop study of historical reports compiled on biological baselines, social and infrastructural developments, and emerging threats to the ecology of the Okavango River Basin. The results highlighted a range of threats to which SAREP applied itself with the objective of mitigating the impact of these threats. Identified threats included the impact of fires, unregulated extraction of natural resources, poor land-use planning, and poor knowledge of the status, extent, and factors regulating biodiversity in the basin, especially in the upper catchment. SAREP responded to these threats in a variety of ways, including establishing a collaboration with the U.S. Forest Service to undertake a basin-wide land degradation assessment that could precisely define where the impact of fires and land-use change driven by activities such as the conversion of woodland into arable fields was most prevalent. In response to the threat of poor land-use planning, SAREP reached out to all land authorities to introduce the decision-support tool LUCIS (see below), while to mitigate the threat of poor knowledge of biodiversity in the upper catchment, SAREP undertook the first multi-taxa biodiversity survey of the upper catchment of the Cubango-Okavango River Basin.



RESULTS AND LEGACIES

- 54 threat assessments developed and monitored
- 2,625 people trained on natural resource management and/or biodiversity conservation
- 42 community-based natural resource management plans developed and implemented
- 16.5 million hectares under improved natural resource management
- 7 million hectares of biologically important area placed under improved long-term protection through protected area management plans
- 35 communities across the basin educated on alternative livelihoods strategies that are biodiversity friendly
- 7,998 people engaged in conservation-based, income-generating activities
- \$15.7 million leveraged for sustainable management and conservation of biologically important areas
- Wildlife protected through integrated strategies that improve community welfare, lessen reliance on natural resources, and enhance resiliency to climate-caused crises
- Knowledge expanded on biodiversity to inform conservation initiatives and priorities throughout the CORB

³ Mavinga (46,076 square kilometers) and Luengue-Luiana (22,610 square kilometers)

The third assessment was carried out to better understand the status and extent of biodiversity in the upper catchment of the basin, where there was a relative void of understanding on what species existed there, due to the civil conflict a few decades previously, and had not been researched in the intervening period. In fact, SAREP undertook two surveys, one focused on the hydrologically active areas across the upper catchment, and a second within the Luengue-Luiana system along the lower Cuito River. These areas contained a significant portion of the CORB's upper catchment and were thus an important ecological component of the health and well-being of the overall basin ecosystem complex, and thus of the basin's ecosystems services management. These surveys also supported the Angolan government to promulgate two new national parks in the area and to assist in developing management plans for the parks. Both biodiversity surveys included field officers from the Angolan Ministry of Agriculture's National Institute of Fish Research and the Directorate of Biodiversity, as well as international scientists representing institutions such as Kew Gardens and the Southern Africa Institute for Aquatic Biodiversity. During these surveys, a new species of damselfly was discovered, while several other species were potentially identified as new species, including five species of fish and four species of dragonfly. Furthermore, several species were identified that had not previously been recorded in the area.

EXHIBIT 6. ONE SHORT FILM ON THE BIODIVERSITY SURVEYS



In Botswana, the project completed a strategic environmental assessment — a comprehensive, pre-emptive science-based guideline for preventing unsustainable developments in a particular area of focus — for the Okavango Delta. This was completed at the request of the Botswanan government and OKACOM. The SEA built on recommendations defined in the TDA, more precisely defining the sustainable development space for the delta and setting into policy requirements for monitoring of the cumulative impact of all individual, smaller developments that occur across the delta. This includes development of tourism lodges within concessions in the delta, defining the maximum number of lodges and tourists that the system can absorb before its ecological functionality begins to become eroded. The SEA identified inappropriate land management and land conflict as major threats to biodiversity

NEW SPECIES DISCOVERED

A new species of damselfly was discovered during the first biological survey. The Sarep Sprite (*Pseudagrion sarepi*) was discovered and named by Jens Kipping, the dragonfly expert who participated in the 2012 expedition. (Picture by [Lizzie Harper](#))



conservation in the CORB, so SAREP recommended an innovative GIS-based method for participatory land-use planning — the Land-Use Conflict Identification Strategy — to the OKACOM Secretariat for use in the Ngamiland District that encompasses the Okavango Delta. In 2012, SAREP launched a pilot project with Ngamiland’s land authority — the Tawana Land Board — and the communities of the Seronga sub-district in Ngamiland to implement LUCIS. Following the successful application of LUCIS in the Seronga area to ensure that land for agriculture was allocated in areas with the best soil and near villages, while also far from elephant pathways to reduce human-elephant conflict, LUCIS was rolled out to the entire district and is being considered for national rollout following a presentation by the Tawana Land Board to the National Conference of Land Boards. In 2013, SAREP introduced LUCIS to the Kavango and Zambezi regions of Namibia, where elements of the approach were then used to support development of the Kavango Regional Integrated Land-Use Plan and the associated SEA for the Kavango Integrated Land-Use Plan, covering more than 4.8 million hectares in Namibia.

To further provide a scientific basis for improved land-use management in the upper catchment areas of Cuando Cubango Province in southeast Angola, SAREP partnered with the U.S. Forest Service to undertake a remote-sensing analysis of land-use change and degradation across the Okavango River Basin. The assessment showed a loss of forests of more than 1 percent annually due to expanding arable farming that requires clearing land for fields. Although this might seem insignificant, it ranks alongside some of the highest annual rates of forest loss in Africa and is especially concerning for a near-pristine landscape. The rapidly growing population and the poor quality of the soils, which drive a traditional slash-and-burn clearing system for new fields in Angola, are an indication that these rates of deforestation may be set to increase unless there is a continued drive to promote CA farming practices, which help increase yields from continually used fields and smaller fields with infertile soils.

EXHIBIT 7. FILM ON PARTICIPATORY LAND ALLOCATION



As part of SAREP’s initiative to improve management of natural resource harvesting and extraction, SAREP engaged consultants in 2012 to develop a transboundary fisheries

management plan for the Okavango Basin and establish a joint management system for the conservation and sustainable use of shared fish and aquatic resources of the Cubango-Okavango River Basin for the benefit of local communities. As a result of the plan, the countries have harmonized regulations and are conducting joint inspections.

A strength of SAREP was its ability to adapt and respond to emerging needs and issues, based on USAID's approval for such strategic changes. One important imperative that emerged in the latter years of the program was the U.S. government's commitment to combatting illicit trade in wildlife products globally and USAID's concomitant requirement for SAREP to focus on such issues where possible under the biodiversity and climate change components. Working with the Botswanan government and the U.S. embassy in Botswana during 2013, SAREP supported formation of the Wildlife Enforcement Network for Southern Africa (WENSA) mechanism to combat illicit trade in wildlife products and various follow-on activities. Ten countries participated in formation of WENSA, which has become integrated into the wider SADC processes of regional law enforcement.

SAREP also played a lead role, in collaboration with its sister program, Resilience in the Limpopo River Basin (RESILIM), in formation of the Southern Africa Resilience Alliance, a sustainable development and resilience network that will promote the sustainable use of natural resources and enhance resilience in the context of transformative development. The power of its potential impact and outreach is founded on the expertise, knowledge, and respectability of its members, all of which have extensive contacts and personal leverage with policymakers in the region. The first actions from the new body were the provision of input into SAREP and RESILIM's participation in the World Conservation Congress in Hawaii in early September 2016 and the Convention on International Trade in Endangered Species of Wild Fauna and Flora meeting in Johannesburg in early October 2016. A key outcome of this involvement was identification of key issues to be addressed by the region's stakeholders at the two events and development of a plan of action to support regional participants at the events. A major issue identified was a lack of regional cohesion among key members of the International Union for Conservation of Nature and Natural Resources (IUCN) across the region in terms of a common conservation and development vision for southern Africa, especially in terms of stances on sustainable use of natural resources and involvement of communities as *de facto* custodians on the ground.

At the World Conservation Congress, the SAREP-RESILIM team facilitated two events: a two-hour workshop comparing the management of four transboundary protected area models (the Kavango Zambezi Transfrontier Conservation Area (KAZA TFCA) process around the Zambezi Region of northeast Namibia, the Greater Limpopo TFCA around Kruger National Park in northeast South Africa, an area of southeast Russia and northwest China, and the North American Inter-Governmental Committee on Cooperation for Wilderness and Protected Areas Conservation Committee), including Mexico, the United States, and Canada. The event highlighted several commonalities in approach centered on the political will to collaborate in management of transboundary ecosystems. The presentation afforded the opportunity to engage with a transworld

audience and hold informative dialogue on the benefits of transboundary conservation initiatives, as well as constraints facing our ability to conserve these landscapes on three continents. In addition, the presentation gave SAREP the opportunity to showcase its own initiatives of securing transboundary wildlife corridors connecting Namibia with Botswana, Angola, and Zambia. The second event outlined the mechanisms followed to promote strengthening of resilience across borders in the six countries involved in the joint SAREP-RESILIM geographical footprint. This event was well attended and was followed by a discussion on best practice and approaches to improving resilience at landscape and community scales. Many participants these presentations also visited the SAREP/RESILIM/Southern African IUCN stand, at which informal discussions were held on collective conservation initiatives. The RESILIM and SAREP team had the opportunity to network from this stand and spread the word on project activities and showcase our experiences. The real take-away from the time spent at the congress was the awareness that the team was able to raise on the best practices implemented in southern Africa by SAREP and the benefits of collaborative approaches across transboundary conservation areas and transboundary river basins.

The joint programs also organized for a Southern Africa exhibition stand to be hosted that was used as the base and rallying place for participants from the region, effectively creating a sense of commonality and solidarity. This same sense of identity served to have one Southern Africa Resilience Alliance member, Jennifer Mahomad-Katerere, elected as an IUCN commissioner for Africa, while the chairperson of the IUCN South Africa Members Committee was also elected as chairperson of IUCN's larger Eastern-Southern African Regional Committee.

The Southern Africa Resilience Alliance also played a pivotal role in reviewing background research that was commissioned in the run-up to the high-level dialogue process held in Pilanesberg National Park in August 2016, reviewing and critiquing the papers to be presented to participants. The RESILIM program will continue to support functioning of the Southern Africa Resilience Alliance during the next six months, during which it will develop a strategy for sustainability.

PROTECTING BIODIVERSITY WHILE IMPROVING LIVELIHOODS THROUGH COMMUNITY ENGAGEMENT AND LAND-USE PLANNING

Communities invariably occupy large areas straddling national boundaries, sharing kinships, cultures, and economies. In such instances, these communities are custodians of the natural resources and ecosystems in their territories and around them — the *de facto* managers of the natural resources on the ground — and it is they who are best placed to ensure their sustainable use and protection on a day-to-day basis. Invariably, governments in the region are constrained in their capacity to provide adequate ground coverage to manage such natural resources and should accept communities as partners in the process of collaborative management.

In the Zambezi Region of northeast Namibia, SAREP worked with its partner, IRDNC, to facilitate engagement of communities in the area with communities immediately

adjacent across the border in southeast Angola. Through these meetings, the communities have agreed on ways of collaboratively managing their natural resources.

In all three riparian countries, SAREP supported government efforts to improve the protection of biodiversity in recognized zones of international importance. In Namibia, SAREP supported the declaration of the Bwabwata-Okavango National Park as a Ramsar site by developing the requisite site management plan to support the nomination. The area was declared a Ramsar Wetland of International Importance in December 2013. Notably, the declaration effectively extends the existing Okavango Delta Ramsar Site at the heart of the extensive network of parks and community conservation areas that make up the Kavango Zambezi Transfrontier Conservation Area. With only a few fences, Bwabwata forms a crucial transboundary link for wildlife migration between Angola, Botswana, Namibia, and Zambia and for seasonal dispersal to and from the rivers.

In Botswana, SAREP's support was instrumental in the listing of the Okavango Delta as the 1,000th World Heritage Site on June 22, 2014. Support for the listing proposal included completion of an environmental sensitivity analysis and the re-definition of core and buffer boundaries to ensure that unacceptable developments and uses of the area and its natural resources were prevented. Further, as a result of national concerns about the identified decreases in certain wildlife species populations across the delta, SAREP organized a workshop in conjunction with the Department of Wildlife and National Parks to determine what the causes were. The assembled experts and researchers concluded that it was not possible to define the exact causes for the observed declines without additional information on changing flood dynamics within the delta and the population dynamics of the declining species. It was therefore decided that SAREP would work with the Department of Wildlife and National Parks to develop a web-based wildlife monitoring mechanism, using safari guides from the more than 57 tourism camps across the delta to collect data daily and deposit it in the web-based facility. This facility was designed and programed to analyze the information in real time so department officials could readily access it and develop a deeper understanding of what trends and processes might be influencing increases and declines in various populations.

During 2015 and 2016, SAREP collaborated with the International Conservation Caucus Foundation Group to establish the Botswana Parliamentary Conservation Caucus, a multi-party coalition of members of the Botswana Parliament with a commitment to elevating the role that stewardship of natural resources plays in Botswana's domestic policymaking and southern Africa's regional development strategy. The caucus will work with conservation and development stakeholders to engage on initiatives to strengthen Botswana's policy and legislative frameworks for natural resource management, drive implementation of on-the-ground programs, and enhance regional collaboration.

In Angola, SAREP worked with the authorities to develop protected area management plans for the Mavinga (46,076 square kilometers) and Luengue-Luiana (22,610 square kilometers) national parks in Cuando Cubango Province. The parks were proclaimed in

December 2011, but had not been managed cohesively due to the dangerous aftermath of residual landmine fields across the area and the lack of a management plan. SAREP assisted the Angolan government to develop a management plan for each park to guide initial adaptive management decisions in the short-to-medium term, while greater, more in-depth research is carried out in the area and more comprehensive plans are developed for the long term. The protected area management plans developed by SAREP assist the Botswanan government with protecting the ecological integrity of the ecosystems and eco-region while promoting development of ecotourism areas in the parks to improve the living conditions of the populations within and around the parks

In areas where land use has not already been clearly demarcated or agreed, SAREP worked with governments, local authorities, and communities to determine land-use priorities and action plans. For example, in 2012, SAREP assisted in development of a land-use management plan for Lake Ngami in the southern reaches of the Okavango Delta, an important breeding area for Africa's migratory waterfowl. The plan embraces the conservation and sustainable use of ecological resources for social and economic diversification and livelihood improvement. In many communities in the CORB, people and wildlife live side-by-side, sometimes competing for resources. SAREP worked with community members throughout the CORB to develop an appreciation of the long-term benefits of the ecological resources and services that they are the custodians of and the importance of conserving biodiversity. To ensure that these communities would also share in income generated from these ecosystem services, SAREP facilitated processes of participatory land-use planning, called participatory land-use strategies (PLUS), in which community members were able to assess the economic and social potential of the land and natural resources within their jurisdiction. Using this new understanding, communities were able to identify additional potential economic opportunities in their areas beyond subsistence agriculture, such as producing arts and craft products, engaging in ecotourism, and social forestry. With a diversified set of livelihood strategies in mind, they were able to then zone their land to minimize land-use conflicts and to plan strategies to engage in new economic and social enterprises

SAREP also worked with six conservancies in the Zambezi Region of Namibia, under separate funding allocations from USAID/Namibia, to improve their governance and natural resource management processes, improving the management of more than 156,600 hectares of biologically important land and improving the economic benefits that 4,086 conservancy members derived from the sustainable management of their natural resources.

To enable communities to observe and monitor trends in natural resources on their land, SAREP also introduced the MOMS. By providing communities with criteria and guidelines to measure changes to their surrounding environment, MOMS helps communities identify adverse changes to local ecosystems and take prompt action to mitigate them.

To achieve greater progress in leveraging resources for management and conservation, SAREP collaborated with public and private sector institutions, such as the U.S. Forest

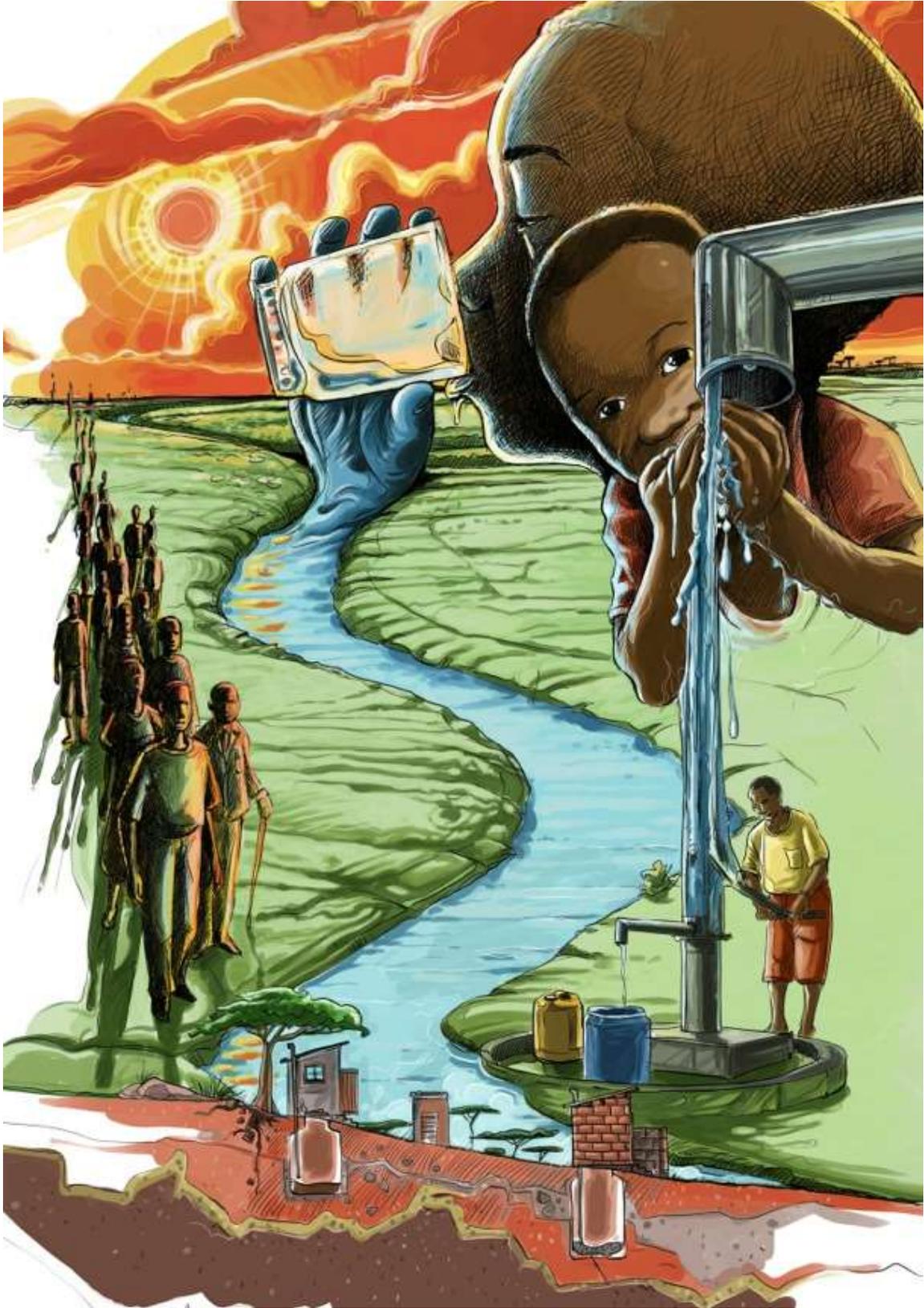
Service, through which it leveraged \$149,000 to undertake a basin-wide land degradation assessment and capacity building for fire management in Botswana. SAREP also assisted the Botswanan government to access funds from the Global Environment Facility (GEF), providing technical support for development of a proposal for a project in Ngamiland on sustainable land management (SLM), aimed at strengthening specific areas of environmental and ecological significance in northern areas of the country. SAREP's support ensured that the Botswanan government received \$2,143,000 from the GEF, while SAREP was able to claim a further \$13 million leveraged through investment from the Botswanan government in the activities of the SLM project. Many of the activities related directly to follow-on from activities initiated by SAREP that needed further attention or strengthening.

EXHIBIT 8. CORRIDORS TO CONSERVATION



LIVELIHOODS IN WILDLIFE MIGRATION CORRIDORS

To create protected corridors for animals, particularly elephants, to migrate seasonally without causing conflict with humans, SAREP led multi-faceted conservation strategies that simultaneously protect wildlife migration corridors and provide alternative livelihoods strategies for communities living adjacent to these corridors. SAREP used the decision-support system LUCIS; data from partners on wildlife migration movements, especially elephants; low-level aerial wildlife surveys; and satellite imagery to identify established animal pathways. SAREP then worked with local authorities to ensure that no land will be allocated for human or livestock use within these defined corridors and partnered with communities and other projects to encourage people living in these corridors to move to safer ground. In communities adjacent to elephant pathways in Angola and Botswana, SAREP worked with local partners to train farmers on conflict mitigation techniques such as using chili peppers, cluster field farming, and solar electric fences to help repel elephants, while in Namibia, SAREP partnered with the U.K. Department for International Development CRIDF to provide drinking water for communities away from corridors, in addition to provision of conservation agriculture farming and human-wildlife conflict mitigation extension services.



IMPROVING COMMUNITY ACCESS TO SAFE WATER SUPPLY, SANITATION, AND HYGIENE

The CORB directly supplies water for more than 1 million people. Ensuring the equitable, safe, and sustainable access to this resource is a critical component of OKACOM's mission in providing people of the basin with water for personal consumption and sanitation, as well as public health and economic activities, while protecting water quality and quantity to support vulnerable and valuable ecosystems.

Providing safe drinking water to rural populations in the basin, while protecting water quality and quantity to support vulnerable ecosystems, requires a multi-faceted approach to water management that integrates community education, water infrastructure development, and planning at the local, national, and transboundary levels. Across the basin, SAREP raised awareness of the importance of safe water and improved hygiene in communities and worked with local and national actors to address infrastructural and institutional challenges to delivering reliable and safe water.

To ensure the leveraging of resources for replication of safe drinking water and sanitation beyond the closure of SAREP, the project developed several toolkits to build the capacity of local actors to more effectively plan and deliver services. Although developed in response to specific needs and conditions on the ground, many of these tools can easily be adapted for use across the CORB and are easily transferable to a range of situations globally.

PUTTING WATER SUPPLY AND SANITATION IN THE HANDS OF USERS

The basis of the SAREP strategy to improve community-level water use, conservation, and sanitation was training and capacity building for communities, local organizations, and relevant authorities to ensure the sustainable provision of water supply and sanitation programs. SAREP's partners on the ground identified the needs in each country or community cluster, allowing SAREP to tailor specific training programs that could build institutional capacity where it was most needed. SAREP set out to build the capacity of institutional partners on the ground in each of the three countries to ensure that what was put in place by SAREP could keep delivering after the project ends. To this end, SAREP ensured that all processes it designed were aligned with those of the



RESULTS AND LEGACIES

- 161 improved water allocation plans developed with communities and local institutions
- 35,510 people with improved sanitation services
- 30,535 people with access to improved drinking water
- 2,690 people trained on water use, conservation, and sanitation
- \$5.94 million leveraged for investment in water and sanitation services
- Water management and decision-making strengthened among water sector institutions through training and introduction of new tools
- Community-level engagement in water sanitation and hygiene increased through training on locally appropriate sanitation options

institutions and that it helped to strengthen their own delivery of services. For example, in the Kavango Region of northeast Namibia, SAREP worked with the government's Directorate of Water Supply and Sanitation Coordination and the parastatal NamWater to strengthen their management of boreholes across the region through an assessment of a sample of key boreholes that would be used to monitor usage levels of aquifers and water quality. In addition, 161 water allocation plans were completed for users in the region, and staff were trained on their use and assessment of water use. In Angola, the primary partner agency was the National Directorate of Water Resources Management, while in Botswana, SAREP worked with the Botswana National Water Authority and the Department of Water Affairs.

Across the basin, SAREP trained community members, local organizations, NGOs, and government agencies to identify challenges and develop plans to manage local water resources, address the health and economic costs of poor sanitation and hygiene, and improve their well-being. In general, SAREP worked most closely with Namibian and Angolan authorities on water supply issues because these had been identified as priorities in their national action plans.

LESSON LEARNED

Our work to strengthen the relevant water and sanitation institutions in the three countries was aimed at sustainability. The time gap between the original program and its extension (from March 2016 as the program began to wind down through to October 2016, when the extension period officially began) gave those institutions a chance to implement the processes, tools, systems, and methodologies we put in place and enabled SAREP to identify just how far our partners were able to come on their own.

SUPPORTING WATER SUPPLY PROVISION IN NAMIBIA

In terms of providing improved drinking water to people in the basin, a key area of focus was the Kavango Region of northeast Namibia, where SAREP was able to provide technical engineering support to plan schemes that linked selected communities by connecting feeder pipelines to existing main trunk pipelines in the area.

In the initial stages of the program, SAREP developed a water governance mechanism to explore different management and governance structures in the Kavango Region of northeast Namibia in collaboration with the DWSSC, NamWater, the Regional Council, and local communities. This mechanism, called the Integrated Water Quality Management approach, promoted development of a hierarchical structure of committees or groups that took responsibility for local management of water, starting with such organizations at the village or community level and aggregating up to representation at a regional governance forum. Ten such management units were formed. Although attempts to facilitate the broader adoption of this model were made, local conditions were not favorable, so it was decided to support other latent government initiatives to form water point committees to manage local water resources. This process was more successful.

To provide authorities with scientific decision-support systems to ensure sustainable and effective water resource management, SAREP developed several methodologies and toolkits, such as:

- To support more efficient planning for water supply and enable DWSSC and key stakeholders to identify boreholes at risk of failing to delivering water, SAREP engaged a geohydrologist to undertake an assessment of 11 boreholes in the Kavango Region as a sample of the total number of boreholes in the region. Following the assessment, DWSSC-Kavango repaired the boreholes, providing 4,148 people with improved access to water supply in the region. The project resulted in a groundwater risk assessment scorecard tool that could be used by field officers (non-geohydrologists) to assess the status of boreholes across the region and plan accordingly to carry out necessary repairs.
- SAREP collaborated with DWSSC to develop a methodology for estimating domestic water use in the Kavango communities. This led to development of 161 water allocation plans in the Kavango Region of Namibia. These plans cover 12,963 households, totaling 118,482 people, and assisted DWSSC in determining the incremental impact of water abstraction in the Kavango River in Namibia, allowing DWSSC to make plans for appropriate management of the overall river system in terms of water abstraction. The model uses geographic information system (GIS)-based criteria to estimate water use in communities under certain conditions and therefore can be used to estimate water use for the 300,000 people across the whole Kavango Region. The benefits of the tool include being able to develop a regional domestic water allocation plan for the Namibian portion of the basin, as well as, in areas where there are sensitive aquifers, identifying communities that may need to have restrictions imposed on their water use in the dry season or in drought conditions.

Through a collaboration with the Coca-Cola Replenish Africa Initiative, 28 communities in the Kavango Region were selected for improvement of their water supply, resulting in 20 borehole cleanings, seven borehole installations, and two pipeline extensions that brought improved drinking water to 13,000 beneficiaries. SAREP also provided the funds to train eight of the communities on water point committee management and caretaker skills to promote sustainability.



An innovative partnership with Coca-Cola, the Namibia Red Cross Society, Namibia's DWSSC, and SAREP, under the banner of the USAID-Coca-Cola Water and Development Alliance, delivered 20 borehole cleanings, seven borehole installations, and two pipeline extensions, which brings safe drinking water to just over 13,000 people in 28 communities in the Kavango Region. (Photo: SAREP)



In 2012, SAREP collaborated with NamWater and the Karutci community to design a water supply scheme, purchase the materials, and train the community construction team to install and backfill the pipeline. (Photo: SAREP)

Providing technical assistance, SAREP managed in several instances to remove bottlenecks to implementing planned infrastructure and accelerate implementation of pipeline projects, which has already provided access to more than 8,500 people, with the potential to provide a further 7,000 people with improved access in the near future in five Kavango communities:

- In 2012, SAREP collaborated with NamWater and the Karutci Community to design a water supply scheme, purchase materials, and train the community construction team to install and backfill the pipeline, as well as assist with installation of 11 metered standpipe taps throughout the community. Since the scheme was established, it has grown considerably, and there are now 99 direct individual connections to households and 85 registered households using the 11 standpipe taps, for a total of about 2,145 people with access to safe water. The community continues to manage the scheme well and pay its bills in full and on time. It is an example of true collaboration, between SAREP, NamWater, and the water point committee.
- In Kayengona, SAREP engineers designed a large project involving borehole conversion and laying of about 10 kilometers of pipeline to supply clean drinking water to almost 7,000 people in the communities of Mayana, UvhunguVhungu, and Kayengona. SAREP also conducted an environmental impact assessment to identify mitigation measures for environmental risks associated with construction of the additional water supply system. NamWater continues to work on this project.

- In January 2014, SAREP engaged the community in Masivi, southwest of the regional capital Rundu, to participate in resolving its water needs. SAREP conducted an environmental impact assessment to identify mitigation measures for environmental risks associated with construction of an additional water supply system, designed the scheme, and opened the new water supply to the community in March 2015, with 4,000 people benefiting. Although SAREP had a collaboration agreement with NamWater and completed its obligations under the agreement, only the first three of eight standpipes were opened during SAREP. NamWater continues to work on this project; a booster pump station and storage tank still need to be installed by NamWater to open the other five standpipes.
- In 2014, SAREP also completed repairs to the Karukuta water supply scheme in the Kavango Region, which has given 2,500 people in 115 households to access to water.

IMPROVING ACCESS TO WATER SUPPLY IN ANGOLA

During September 2012, SAREP repaired a water supply scheme in the town of Caiundo, in the central area of Cuando Cubango Province in southeast Angola, bringing drinking water to the 5,000 residents for the first time since the system had been vandalized and rendered inoperable in 2010. To ensure sustainability, SAREP trained community operators to independently monitor and maintain the system.

To provide reliable, clean water to other rural populations of Cuando Cubango Province, SAREP used an innovative strategy to identify quick wins in water supply infrastructure, where high-impact water supply systems could be rehabilitated or established through minimal input: the condition assessment tool. The tool was tested in 24 water supply infrastructure installations in Southern Cuando Cubango Province. To the assessment (in the form of a scorecard), SAREP added a weighted multi-criteria decision-making analysis to develop a prioritized rehabilitation plan for those 24 installations. The rehabilitation planning tool is designed to assist the government to prioritize refurbishment efficiently to gain the highest possible impact for the available budget.

In 2014 and 2015, SAREP supplied water institutional capacity to the U.K. Department for International Development-funded Climate-Resilient Infrastructure Development Facility (CRIDF) to facilitate the undertaking of water supply surveys in 11 communities (about 16,000 people) in Calai District and assist the Angolan government to develop management and operational capacity (in the form of the design for a water management unit for the Calai administration), to improve management and maintenance of the water supply infrastructure for the town of Calai, currently providing water to more than 20,000 people. Negotiations are ongoing between CRIDF and the Angolan government for implementation of the project.

With regard to construction and implementation of water supply and sanitation infrastructure in rural communities, SAREP established a number of key formal collaboration agreements with local and national organizations to leverage funding and ensure long-term sustainability. Notably, the Denner Foundation, a faith-based NGO in

Namibia, agreed to provide 2.25 million Namibia dollars (NAD) (\$280,000) to finance construction of water infrastructure for an estimated 7,000 people in SAREP partner communities, while SAREP contributed \$55,000. In another example, NamWater, the major water supply and sanitation parastatal organization in Namibia, agreed to provide 1.5 million NAD (\$190,000) in funding for diverse water supply mechanisms for an estimated 21,000 people in SAREP-supported communities.

EXHIBIT 9. COLLABORATION AGREEMENTS

ORGANIZATION	PURPOSE	AMOUNT
Denner Foundation (Namibia) (2012)	Construction of water infrastructure in Kavango Region	2,250,000 NAD/\$280,000
Ministry of Education (Botswana) (2014)	Rehabilitation of school WASH infrastructure in the North West District	21,683,252.23 Botswana pulas/ \$2,422,340.00
Coca-Cola RAIN & DWSSC Kavango (2015)	Water supply to 28 villages in Kavango Region	3,000,000 NAD (Coca-Cola) 1,575,000 NAD (DWSSC)/ \$337,440.00
DWSSC (2014)	Rehabilitation of 11 boreholes in Kavango Region	Estimated: 1,500,000.00 NAD/ \$140,535
Namibia Red Cross Society	Sanitation in three regions of Northern Namibia	€294,000/\$398,108
CRIDF	Game corridor boreholes, Kaisosi sewage pond, and institutional arrangements for the water supply infrastructure in Calai	10,800,000 NAD/\$1,010,190

IMPROVING SANITATION: INCREASING LATRINE USE AND CHANGING BEHAVIOR

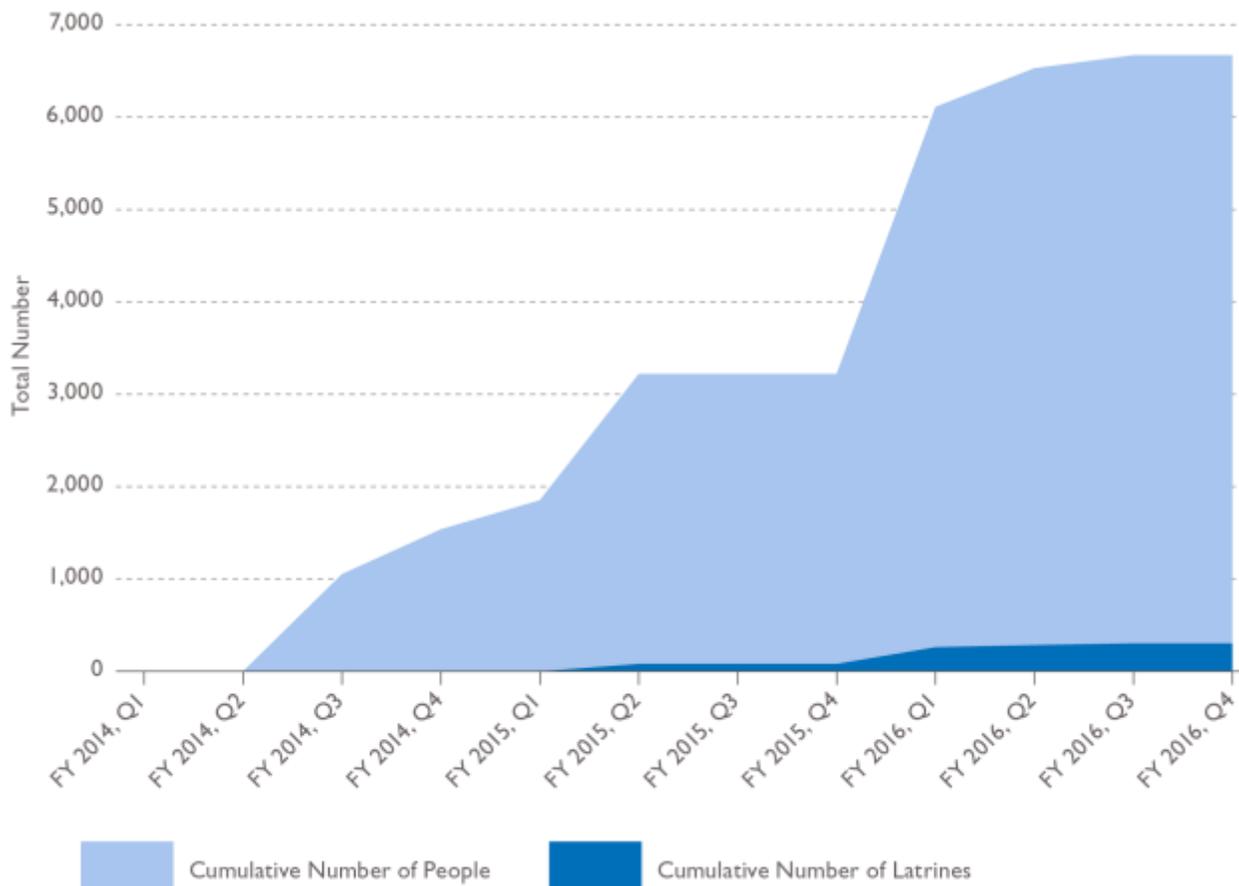
SAREP discovered that open defecation was widespread across the basin, leading to significant health, environmental, and economic costs to communities. To improve sanitation and hygiene, SAREP introduced basin communities to the [Community-Led Total Sanitation](#) approach. This approach, developed in Bangladesh, uses a mobilization process called “triggering” to discourage open defecation. It encourages the construction of pit latrines where visible benefits of their construction results in a peer-pressure chain reaction. The peer pressure encourages other community members to also construct pit latrines and to change their sanitation behavior. The approach has resulted in 20 million toilets being built worldwide. SAREP facilitated CLTS triggering exercises in 20 communities in the basin and trained more than 50 CLTS facilitators to continue the work beyond the project’s scope and lifetime. Because the community wholly owns any resulting positive behavioral changes and infrastructure, it has proven to result in sustainable improvements in sanitation and well-maintained infrastructure. The SAREP strategy of focusing on training facilitators in CLTS will further ensure that sanitation is continually improved in beneficiary communities and beyond, after SAREP closes.

CLTS METHODOLOGY WORKS

The [CLTS methodology](#) showed that communities can lead their own development, given the right tools to do so.

The first CLTS training event took place in Shakawe, in the northern panhandle of the Okavango Delta in Botswana, where SAREP trained members of the community and local government officers. The community embraced the principle and, even though Shakawe is a large village, is moving toward open-defecation-free status in some of the wards. CLTS triggering was completed in 10 communities, with 3,066 people benefiting from the CLTS facilitation of 241 latrines built and providing improved sanitation services. As with CLTS triggering elsewhere in the basin, no materials were provided by SAREP for any of these latrines, and all were built by householders at their own cost.

EXHIBIT 10. GROWTH OF PIT LATRINE CONSTRUCTION IN ANGOLA AND BOTSWANA



In Namibia, SAREP trained DWSSC extension officers to use CLTS to mobilize communities before the construction of latrines by DWSSC. The course was attended by representatives from DWSSC, the Kavango Regional Council, and even the Calai CLTS Group from Angola, to ensure that efforts of all organizations undertaking sanitation projects in the area were aligned as far as possible. DWSSC subsequently used this course to roll out 791 latrines for communities in Kavango Region, where there are now 8,701 people with access to improved sanitation services, thanks to the

training and capacity building that SAREP provided. Impressed by the effectiveness of the CLTS techniques, DWSSC asked SAREP to extend the training to its officers nationwide. Thus, because of SAREP's work, CLTS principles and techniques have been incorporated into Namibia's national sanitation implementation process and are having a positive impact on every new toilet built in the country. Similarly, in Botswana, the Ministry of Health has adopted CLTS as a key strategy in improving sanitation in rural areas across the country.

TRAINING COMMUNITIES TO LEAD CLTS

Uncomfortable laughter rippled through the crowd, a small group of volunteers standing in a loose circle around a pile of human waste. These volunteers were in the midst of a community-led total sanitation training event in Shakawe, Botswana. The facilitator had just leaned down, rubbed a tongue depressor in the feces and dipped it into a bottle of water. He was now offering the bottle to those nearby to drink — no one was eager to partake.

It is in Angola, where river basin communities have little access to government resources and support, where CLTS has had the greatest impact in its pure form. SAREP trained its local partner ACADIR, along with members of the Calai community, on CLTS facilitation. From there, CLTS has spread rapidly, and with minimal financial support from SAREP, 85 toilets have been built in and around Calai, with 1,331 people gaining access to improved sanitation. Using the SAREP developed CLTS monitoring and evaluation (M&E) toolkit, the village of Kuito on the outskirts of Calai was verified as officially open-defecation-free in May 2016, with several other villages also approaching 100 percent latrine coverage by the end of the project's life. In total, across all the clusters where SAREP has introduced CLTS, 4,121 people have gained access to improved sanitation services, with 342 latrines constructed.

Communities from Calai have been collaborating with their counterparts in Kaisosi in Namibia, under the Komeho Development Agency NGO sanitation program, to share experiences and build capacity toward reaching open-defecation-free status, with 1,800 people gaining access to improved sanitation services through the collaboration.



SAREP Consultant Robyn Tompkins working with a community on their water supply and sanitation needs. (Photo: SAREP)

IMPROVING SANITATION AT SCHOOLS IN NGAMILAND

Without adequate water and sanitation, pupils are forced to defecate in the surrounding bushes, which leads to increased truancy and can place female pupils in danger of rape and molestation. Inadequate sanitation facilities also lead to high degrees of absenteeism in menstruating female pupils.

In 2012, SAREP partnered with the Botswanan government, through the Ngamiland District Department of Education, to assist in repairing and rehabilitating sanitation facilities at two secondary schools — Gumare and Sepopa in Ngamiland — to improve sanitation for 1,600 students. However, understanding that rehabilitation of infrastructure cannot be maintained without better hygiene and sanitation behavior, SAREP rolled out a WASH program in schools, with WASH education delivered to more than 4,000 school children in the Ngamiland District.

To maintain and improve the condition of sanitation facilities at schools, SAREP developed a WASH toolkit to assist schools to identify problem areas through participation of students and school managers. The toolkit, for example, includes a tool for school managers to track water consumption at the school and assist in developing management plans in response. In addition to the toolkit, SAREP developed a management scorecard and performance assessment system for school managers. Through its initial use, the scorecard process revealed that school staff were unaware of proper management and maintenance procedures for ablutions and pit latrines, using chemicals and techniques that prevent the normal functioning of biodegradation processes, leading to unhygienic conditions that cause disease or make the facilities unusable. In response, SAREP developed a manual for maintenance of pit latrines to ensure that biodegrading processes operate efficiently, which improved the hygiene status of the ablutions, making them more acceptable to the students who then formed “maintenance clubs” to monitor and manage the ongoing hygiene of their ablution facilities and ensure that they remain in an acceptable condition.



A community member stands proudly in front of his newly built latrine. (Photo: SAREP)

The exhibit below lists the tools and toolkits that were developed for supporting better management of water and sanitation in the basin over the life of project.

EXHIBIT II. TOOLS AND TOOLKITS DEVELOPED BY SAREP TO SUPPORT WASH IN THE BASIN

NAME OF TOOL OR TOOLKIT	PURPOSE
Integrated water quality management	Managing impact of activities on water quality
Infrastructure condition assessment tool	Water supply infrastructure condition assessment
Rehabilitation planning model	Prioritize assessed infrastructure for rehabilitation or refurbishment
Groundwater risk assessment scorecard	Identify way forward actions for borehole schemes that are not delivering water
Water allocation plans	Identify a 10-year domestic water allocation for communities
WASH management toolkit for schools	Manual, trainer-of-trainers manual, and eight tools to improve WASH management in schools

NAME OF TOOL OR TOOLKIT	PURPOSE
CLTS M&E toolkit	Manual, trainer-of-trainers manual, and 13 tools to allow communities or institutions to monitor progress toward and certification of open-defecation-free status
Schools management tool (draft)	Tool for school managers to better assess performance in all areas of school management, with particular reference to WASH issues
Self-build manual	Simplified self-build manual for Namibia standard latrines
Sanitation implementation assessment	Interview questionnaire to assess sustainability of latrine implementation: institutions and communities

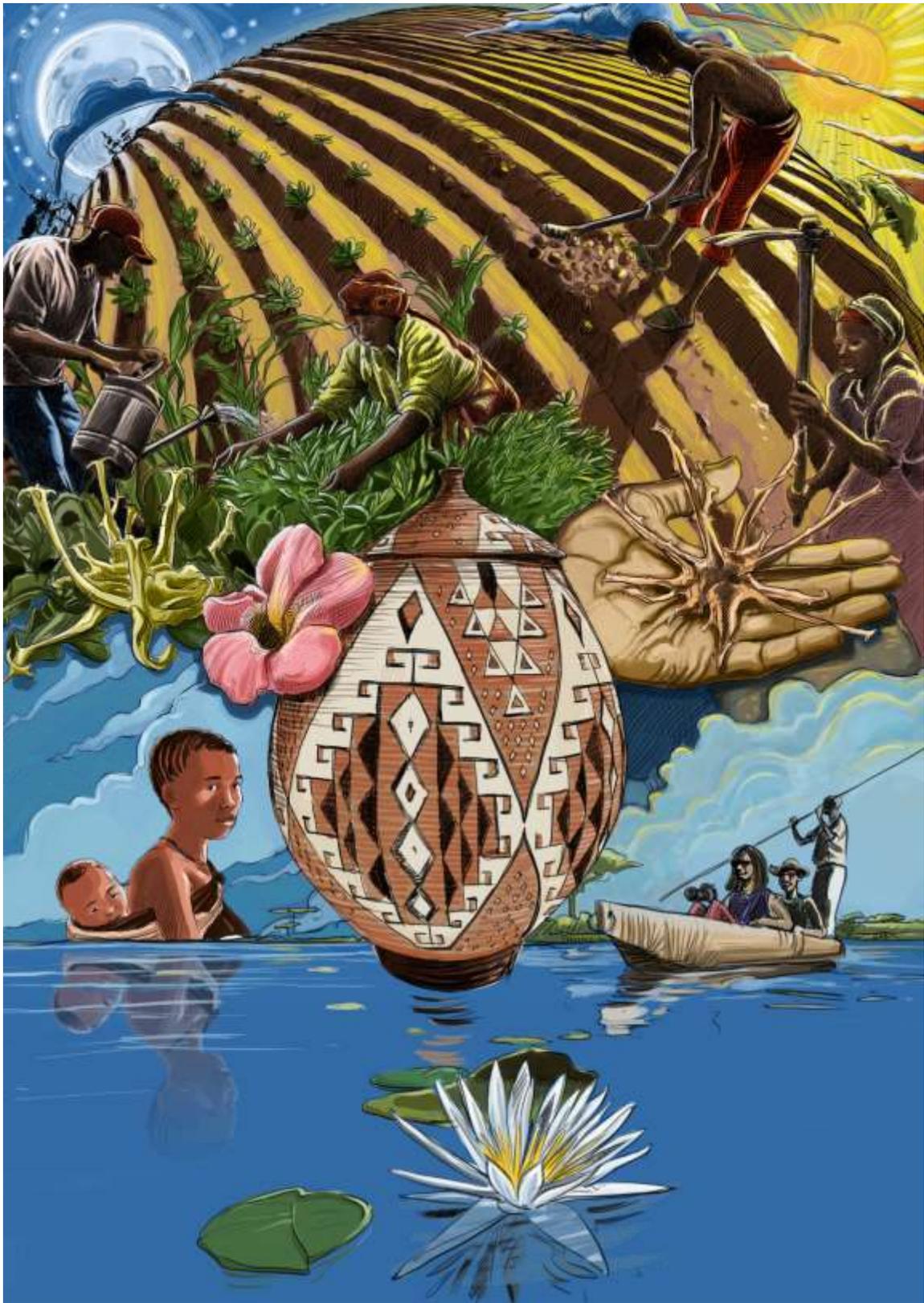
KWANDO WILDLIFE MIGRATION CORRIDOR

During 2015, SAREP worked with the IRDNC in the Zambezi Region of northeast Namibia to conserve wildlife corridors, through the Mashi Conservancy, linking the river and floodplains of the Kwando River with Mudumu National Park and through to the Sobbe Conservancy and the National Forest Reserve to the north. The goal of this initiative is to reduce the exposure of communities to human-wildlife conflict associated with floodplains and corridors and to encourage communities to move agricultural activities away from the river’s floodplains and onto higher ground, allowing the free movement of wildlife, particularly elephants, between Botswana, Angola, and Zambia and back. SAREP partnered with CRIDF to bring in additional resources to drill 24 boreholes for water access points on the higher ground as an incentive to communities to move their fields and homesteads. A July 2016 update from CRIDF indicated that the boreholes had been drilled and tenders were going out for the equipping of the boreholes, which will complete the program. Although the number of beneficiaries of this scheme is relatively small (about 600 people), the broader implications are considerable and demonstrate the links between water supply, sanitation, and conservation.

MAKING THE RIVER BASIN AND ITS PEOPLE MORE RESILIENT TO GLOBAL CLIMATE CHANGE

Climate change is expected to increase the severity and frequency of extreme events such as floods and droughts in southern Africa. To improve the resilience of communities throughout the Cubango-Okavango River Basin to climate change, SAREP engaged in wide-scale coalition-building that treats the basin and its people as a whole. From conducting detailed assessments of basin-wide climate vulnerability to establishing flood maps to improve land planning, SAREP worked to build the knowledge base around climate change and ensure new understandings are translated into prompt action.

One of the principal strategies by which SAREP strengthened the capability of river basin organizations to manage basin resources in the context of climate change was development of a basin-wide climate change vulnerability assessment in 2013. The assessment, which covers the entire CORB, identifies key challenges and threats to the people and resources of the CORB caused by increased climatic variability. It served as a basis for developing training modules for climate change-adaptive management approaches, where SAREP, in partnership with the RESILIM program and the University



of Cape Town's Climate System Analysis Group, built the capacity of Botswanan government officials to anticipate and respond to the challenges of climate change. As part of the collaboration with the Botswana Department of Meteorological Services in development of the Okavango River Basin climate change vulnerability assessment, SAREP was invited to the technical reference group advising the Botswanan government on development of its climate change policy and strategic action plan.

The strategic environmental assessment of the Okavango Delta conducted by SAREP in 2012 provides further scientific grounding for sustainable management of the CORB's resources in the context of climate change. In another example, SAREP supported a low-level aerial survey of the Namibian and Botswana portions of the basin at peak flood, enabling SAREP and local partners to accurately define the high flood mark along the entire course of the Okavango River to assist in regional land-use planning.

SAREP partnered with the U.S. Forest Service to use satellite imagery to identify areas of degraded land to assess regions being degraded by human or climate change activity. Habitat transition through the effects of flooding and fires can affect its productivity, shifting wildlife movements and reducing biodiversity. SAREP has used the data and maps generated by the U.S. Forest Service to build the capacity of Botswana's Department of Forestry and Range Resources to mitigate the impact of fires. By assessing the efficiency of fire breaks and cut lines, SAREP has been able to advise the department on which fire breaks are most effective.

SAREP also developed a Reducing Emissions from Deforestation and Forest Degradation (REDD) and adaptation learning mechanism implementation strategy for Botswana, with a review of the constraints and opportunities, and prepared presentations on the application of the REDD process for Botswana. These presentations for the Botswanan government — on the REDD process, carbon trading, agricultural land management, and the compliance market — form part of a training program for Botswana's REDD technical committee to help the country plan for responding to the challenges of climate change and taking advantage of the resources available for adaptation activities.



RESULTS AND LEGACIES

- More than 36,000 people with increased adaptive capacity for climate change
- 15 tools adopted to manage climate-caused crises
- 14 institutions with improved capacity to address climate change issues
- 13 laws, policies, strategies, plans, or regulations addressing climate change mitigation or adaptation officially proposed or adopted
- Alternative livelihoods strategies adopted and implemented by basin communities, resulting in small, medium, and microenterprise development and decreased reliance on natural resources
- 11 communities less vulnerable to climate-induced crises through flood-preparedness plans

Also in Botswana, SAREP worked with an expert from the U.S. Forest Service to develop capacity within the Department of Forestry and Range Resources to use the Advanced Fire Information System, which, in collaboration with the GEF-funded SLM program, was piloted around the Tsodilo Hills Heritage Site.

Combining satellite imagery and the above-mentioned aerial survey on flood levels with LUCIS, which SAREP introduced into the Ngamiland Region of Botswana and Kavango Region in Namibia, SAREP was able to delineate the high flood line in the delta to an accuracy of +/- 50 meters, allowing for settlements, urban planning zones, and agricultural and tourism land to be zoned away from flood-prone areas, while ensuring that agricultural land was allocated in the most fertile areas. As such, SAREP was able to use land-use planning as a tool to improve the capacity of district authorities to address the impact of climate change. Furthermore, the application of LUCIS ensured that wildlife migratory corridors are left unoccupied by humans. By helping to secure these corridors for future wildlife use, wildlife populations are better adapted to move naturally in the search for spatially and temporally variable food resources and are therefore more resilient to the potential negative impact of climate change.

IMPROVED LIVELIHOODS

SAREP's approach to improving livelihoods centered on equipping communities with tools and strategies to improve food security and diversify their income sources while they sustainably manage rural resources and managed biodiversity better in their area. Across the basin, SAREP supported 40 communities to develop and implement participatory land-use strategies to protect rural natural resources and establish long-term visions for improving their economic and social well-being. These strategies focused on diversifying rural livelihoods and providing communities with the knowledge and tools to manage their resources. Through a multi-phased approach, SAREP helped the PLUS communities identify threats to their communal environment and biodiversity and identify economic opportunities available through the use of their natural resources. In addition, they were able to zone their areas so that competing land uses were minimized and conflict reduced, thereby also improving management of natural resources across more than 200,000 hectares of land in the basin.

To enable PLUS communities to observe and monitor trends in natural resource populations on their land, SAREP also introduced them to the MOMS. By assisting communities to define their own criteria, which were often simple and uncomplicated, while pertinent to their principal livelihood strategies, SAREP supported communities to develop guidelines that measured changes to their surrounding environment. MOMS therefore helps communities identify adverse changes to their local environment that may undermine their livelihoods and take prompt action to mitigate them.

At community level, SAREP, through its local NGO partner on the ground in the Zambezi Region of Namibia, IRDNC, assisted communities to plan for flood preparedness by developing maps that indicate peak flooding trends. SAREP then worked with the communities through their existing conservancy structures to develop plans to mitigate the effects of climate change-induced flooding. These plans link proven

flood-preparedness strategies with government-run disaster response and recovery strategies. They also center on reducing human-wildlife conflict, which occurs when flooding decreases the availability of habitable areas. The plans include assessments of current levels of preparedness of communities in flood-vulnerable regions, as well as specific threats posed by floods in each community. Actions are identified to better mitigate risks and prepare communities in these conservancies for flooding. The 11 flood-preparedness plans supported by the project covered over 29,000 people and 178,000 hectares. Conservation agriculture was introduced to these communities as an additional adaptation approach to use when they are displaced from their homes in times of flooding. Communities within the flood-prone parts of the Zambezi Region predominantly use a form of arable farming known as flood-recession farming, plowing the fertile floodplains as the floods recede. When flood levels exceed normal parameters, the communities are forced onto the drier and less fertile sandy soils of the central Zambezi Region, where rainfed farming crops often fail or produce poor yields.

CONSERVATION AGRICULTURE

To enhance food security and protect vulnerable soils of the river basin, SAREP introduced the principles of CA to 70 communities in Cuando Cubango Province of Angola, the Kavango and Zambezi regions in Namibia, and the Ngamiland Region of Botswana. Through a process of minimum tillage, mulching, and directed application of organic compost and crop rotation, successful CA strategies improve water capture, boost soil fertility, and minimize environmentally degrading land husbandry and planting practices. By preventing erosion, farmers are able to retain valuable topsoil, minimize the risks of runoff in flood conditions, and channel moderate rains to where they are needed for plant survival in times of drought. In addition to building resilience against drought and flooding, CA improves yields, allowing farmers to experience greater food security and earn more income on their crops. This enables them to better withstand the negative impact of climate-driven crop failures when they occur.

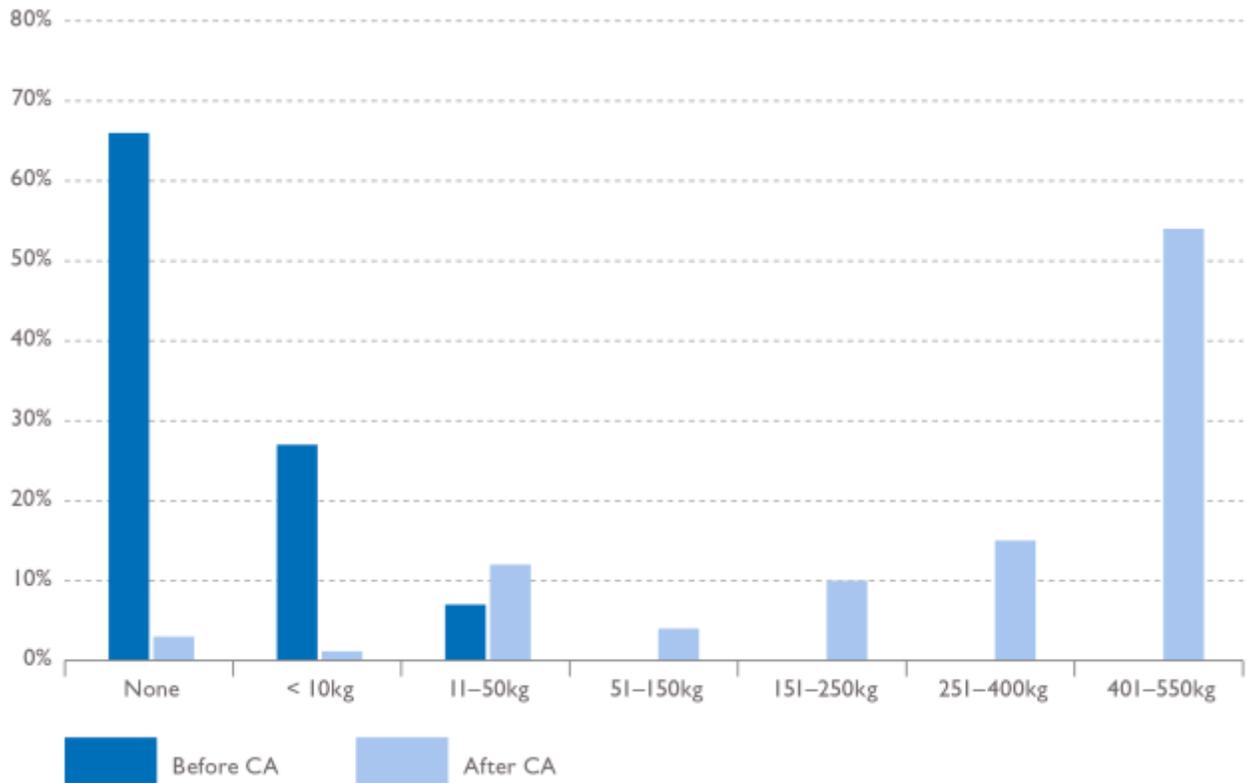


A farmer in the Seronga area of the Okavango Delta under the Ecoexist program showing his conservation agriculture land preparation to SAREP officials. (Photo: SAREP)

The success of CA was evident in Angola along the Kavango River, where the technology was adopted on a broad scale with some impressive results. Exhibit 12 shows the percentage of farmers in each yield category for maize produced in Angola during the drought year of 2015-2016, highlighting the adaptive resilience to climate change that CA provides to farmers. Comparatively, during the previous and wetter

year of 2013-2014, farmers recorded much higher yields. This highlights that although CACA approaches reduce exposure to the effects of climate change, the environmental conditions still constrain the ability of farmers to become completely food-secure.

EXHIBIT 12. COMPARISON OF YIELDS OF TRADITIONAL VERSUS CONSERVATION AGRICULTURE



In partnership with local organizations Ecoexist and Pabalelo Trust in Botswana, Namibia Nature Foundation (NNF), and *Associação de Conservação do Ambiente e Desenvolvimento Integrado Rural* in Angola, SAREP introduced CA to more than 70 communities throughout the river basin and trained close to 1,500 farmers and more than 150 master farmers, who learned valuable skills and knowledge on the technique that they transferred to their communities. In the Calai District, the results have been impressive, with preliminary data showing that most farmers increased their yields from an average of about 800 kilograms per hectare in previous years, many by more than 200 percent and some by as much as 750 percent. From the data recorded from 48 Calai farmers, 15 produced more than 4,000 kilograms per hectare, and a few even produced 6,000 kilograms per hectare. A total of 27 Calai farmers' production is shown in Exhibit 12. In each community, SAREP established demonstration plots showcasing best practices in the cultivation of drought-resistant cereal crops and vegetables. Despite limited rainfall due to a severe regional drought in 2015-2016, SAREP-supported demonstration plots showed greater results than traditional agriculture.

Differences were observed in the uptake of CA between regions, with farmers also expressing differences in their reasons for switching to CA or not. In Angola 54% of the 1500 farmers trained on conservation agriculture switched to using it. Of these 850 or so farmers, more than 56% said they had switched because of poor yields following traditional, non-CA practices, while 66% of those who had not switched said it was because they did not understand it. This is an important facet, because the approach is different from traditional practices, and a strong element of belief and trust is required to switch to a new technique, especially when their family’s food security is dependent upon it. Often, this took time, even when extension services were being provided by NGOs such as ACADIR with a long history of community outreach in the area. Angolan farmers’ faith and trust in CA was steadily won over by watching the successes of those who had switched and seeing that it produced higher yields. In Angola, 33% of the farmers switched in the first year (2012-2013), 28% in the second (2013-2014), 39% in the third (2014-2015), and 1% the fourth year (2015-2016), when the focus was on improving the training of the existing conservation agriculture farmers to ensure its sustainability post SAREP.

In Botswana, 76% of farmers trained on CA switched to it and maintained its use, although the numbers achieved were far lower than those observed in Angola. The main reasons farmers switched to CA in Botswana were their expectations of better yields and the influence of a training session (See Exhibits 14 and 15). Farmers who did not switch said that they understood the process but thought it was more work than the traditional use of plows.

EXHIBIT 13. WHY DID YOU SWITCH TO CONSERVATION AGRICULTURE?

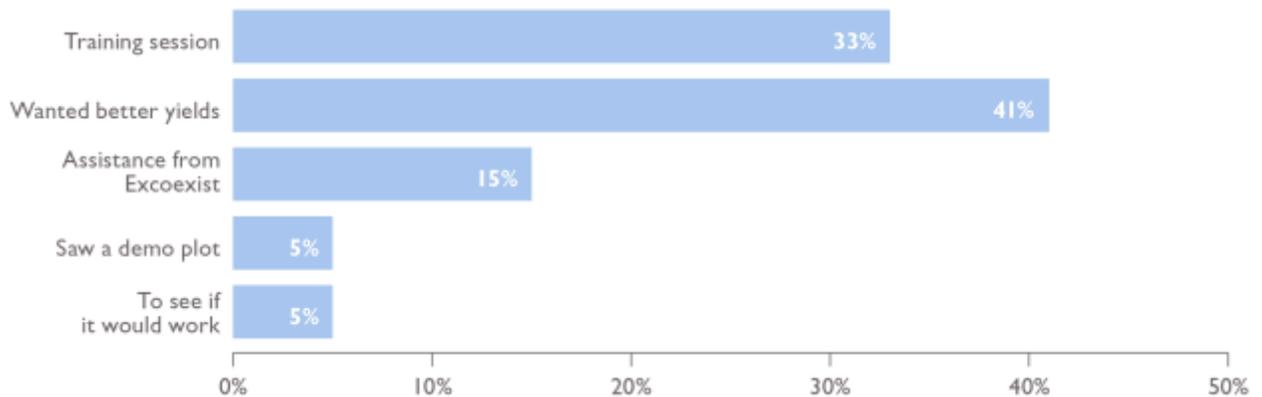
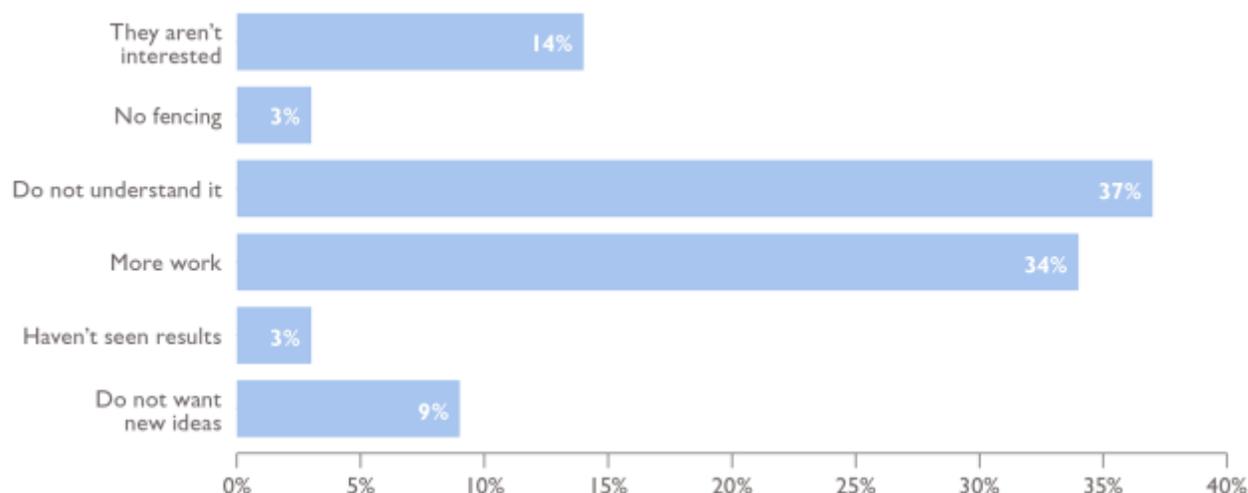


EXHIBIT 14. WHY DO YOU THINK OTHERS HAVE NOT SWITCHED TO CONSERVATION AGRICULTURE?



Higher levels of uptake could have been achieved if more resources were provided per farmer. The results of extensive questionnaire surveys of CA and non-CA farmers in Angola and Botswana showed that the biggest need of farmers was more readily available information to improve their confidence as they changed how they farmed and responded to varying environmental conditions. The lesson learned from these results shows that to get a greater percentage of farmers to switch and do so with confidence, technical advice needed to be more readily available than was provided.

The sustainability of conservation agriculture among those trained and now applying its approaches is secure, with 99% of all of those using CA after two to four years of SAREP support still using it. To ensure that the application of CA was sustainable, SAREP worked with in-situ NGOs with extensive experience of working with target communities and with ongoing programs that would ensure extension services were maintained beyond the life of SAREP. To build on the foundation laid by SAREP, ongoing and future extension services should focus on increasing yields even further and improving access to markets for cash crops. Both processes would improve the sustainability of CA use among existing farmers and help improve the uptake for new ones. Although conservation agriculture improved yields significantly from traditional approaches, further improvements are required. Responses from CA farmer questionnaires pointed to continuing issues of food security. From across Angola and Botswana, 93% of CA farmers said they were still food-insecure at some point during the year, while 100% who had not converted to CA said they were food-insecure. To increase yields further, more technical assistance is needed, as well as improving agronomic practices, using improved seeds and fertilizer and building soil health through crop rotation and other methods.

Economic benefits derived from the use of CA were small in global terms, but of significant benefit when related to average household incomes. SAREP-trained CA farmers generated \$7,005 of direct income from the sale of cash crops, of which \$4,180 was from the sale of vegetables. Cash crop sales would have been higher with improved

access to markets. Farmers have difficulties improving their access to markets because of transport, proximity to a viable market place, and food security issues. The remote location of many of the communities trained to apply CA preclude their ability to easily travel to regional markets. Current transport is by donkey cart, carrying on head, or waiting for buyers to come. Finally, until CA farmers become food secure, they will not have surplus production to sell to markets of any substantial quantity, limiting their opportunities to maximize economic benefit.

Farmers who have adopted conservation agriculture techniques are more resilient to the impact of climate change, even taking food security issues into account, and have a better economic outlook, while contributing less to environmental degradation. In addition, their fields are more efficient and productive. They don't need to slash and burn a new field every few years and their family members can also farm within the same-sized plot and still yield the same results. By clustering their fields together using CA, they are better able to defend their fields from elephants using techniques such as chili pepper and solar electric fences. With the potential for increased drought caused by climate change, wildlife will be increasingly forced to seek areas of water used by people and come closer to people's farms. Throughout the basin in Botswana, Namibia, and Angola, the incidence of human-wildlife conflict is high, SAREP supported the training of farmers on techniques to mitigate human-wildlife conflict.

In a related initiative, SAREP worked with grantee Pabalelo Trust in northern Botswana to develop and install elephant-proof rainwater harvesting systems. The erected rainwater harvester systems are within or adjacent to several clustered fields, so many farmers can benefit from the stored water. Water is collected in a bucket from a tap at the bottom of the tank and poured into hand-dug basins in which the seeds are planted in the CA fields.

DEVIL'S CLAW HARVESTING

To enable communities to become more adaptable and resilient to climate change, SAREP promoted development of sustainable harvesting of devil's claw tubers by communities in semi-arid areas, where the plant grows prolifically. Devil's claw is in demand in Europe for its bio-medicinal properties. SAREP worked with local subcontractors and grantees to train communities in Cuando Cubango in Angola and the Kavango Region in Namibia to sustainably harvest devil's claw and process it to the high standards required for it to enter the European markets. Communities participating in the sale of devil's claw have earned much-needed cash, allowing them to significantly improve their lives through procuring housing material and farming inputs, paying school fees, and buying medicines.

"The selling of devil's claw has really helped us. We didn't even know that we could properly benefit from this plant. I am very happy with the money and I am going to buy a goat. I look forward to the next devil's claw harvesting season!"

**— ROSARIA MAHUNGULO, A
TRAINED DEVIL'S CLAW
HARVESTER IN SAVATE,
ANGOLA**

This livelihood activity has been of major direct benefit to many households in the Angola and Namibia PLUS Sites. In 2015, with only two prior years of support to harvesting, significant numbers of rural people in the southeast areas of Angola participated, having seen the substantial financial benefits that the original “pioneer” harvesters received at the end of the 2013 and 2014 seasons. The total annual sales by over 260 harvesters delivered more than 20,000 kilograms of devil’s claw and earned harvesters the approximate equivalent value of \$55,000 — a fortune to people who live on less than \$2 per day. Harvesters reported that this revenue was used by them to purchase essential household goods and livestock to diversify their incomes further, as well as to pay school fees and related expenses. In Namibia, the price of devil’s claw has risen steadily from 22 NAD/kilogram in 2012 to 38 NAD/kilogram in 2016, in part due to the increasing quality of the harvested devil’s claw, thanks to improved training on harvesting and drying, and due to improved negotiation skills and collaborative efforts to find suitable buyers by communities. Resource monitoring has ensured that quotas are abided by and kept at sustainable levels, even in response to increased economic benefits. In 2016, 378 harvesters were trained by SAREP, with an average economic benefit of 1,000 NAD per harvester. This corresponded to an average 21 percent of household income for these harvesters.

ARTS AND CRAFTS

People living in remote rural areas of Africa rely heavily on natural resources to survive and supplement their livelihoods beyond erratic rainfed agriculture. In areas rich in wildlife, it is easy to harvest wild animals for this purpose, which, if done in sufficient quantities, may endanger the biodiversity of the area. Encouraging remote dwellers to harvest a broad range of natural resources sustainably for personal or commercial purposes expands their socioeconomic options and reduces unsustainable harvesting of high-value species such as wildlife. Promoting the use of lower-value plant-based species like palm leaves, grasses, and reeds for use in making arts and crafts to sell to tourists is a valuable strategy to reduce poaching and promote the responsible stewardship of natural resources.

Following three years of support by SAREP, the Nhabe Museum in Maun, Botswana has started its new Arts and Craft outlet with funding from the Botswana Department of Gender Affairs and local safari tourism companies in Maun. In Ngamiland, SAREP partnered with [Travel for Impact](#) (TFI) to develop a social enterprise collective: CraftHood. This operation will purchase crafts directly from producers in communities, assemble a critical mass of high-quality products (baskets, handbags,

POVERTY IN ANGOLA

From the latest figures available (2013), Angola ranks 148 out of 186 countries on the Human Development Index. Poverty remains prevalent throughout much of the country. An estimated 68 percent of the population lives below the \$2.00 per day poverty line and 15 percent of households lives in extreme poverty. The southeast portion of Angola is seen to include a large proportion of such people.

trinkets, etc.), and then market these by the container-load into outlets in the United States and Europe. This way, the crafters in communities across Ngamiland will have the incentive of immediate payment for goods produced and become active members of local craft associations to improve the quality and diversity of items manufactured. A lack of access to markets has historically hindered women in the Okavango Delta from producing baskets and other crafts, and the initiation of the process to form the social enterprise scheme forms one part of the process to mitigate these constraints. Travel for Impact also conducted training for registered crafters on improved production, sustainable harvesting of natural resources, and financial administration and business skills.



Display of arts and crafts in Nhabe Museum, Maun. (Photo: SAREP)

More than 200 people, mainly women, have been trained to produce better-quality baskets and crafts, with a more diverse range of products, after a group of crafters travelled under SAREP funding to Swaziland and Cape Town to learn from thriving rural craft markets in those areas. As part of the holistic approach, SAREP supported the Shorobe Basket Co-operative, on the outskirts of Maun, to develop a proposal for renovation of its building. Funding was secured from the Botswana Department of Gender Affairs, and the center has since been renovated. Five other craft centers were then renovated by SAREP, through TFI, with co-branding developed that brought all of the craft centers under the banner of the social enterprise: CraftHood. The social enterprise scheme has the potential to improve the economic benefits derived from the sustainable use of natural resources of 1,600 people, most of whom are women, based on the number of previously registered crafters at the regional craft centers.

BOTSWANA INDIGENOUS PLANTS

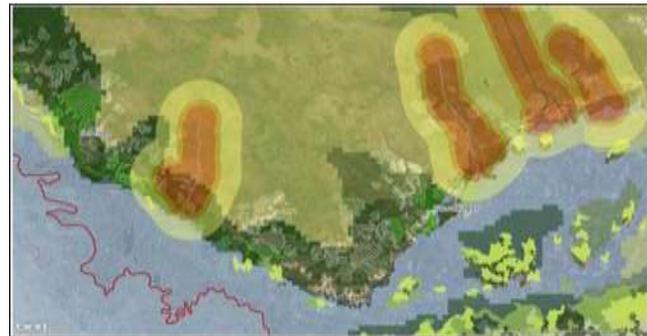
The use of wild plants for medicinal purposes or to produce utensils, containers, and adornments or to extract oils and food materials, among other things, is a fundamental part of rural people's lives around the globe. In southern Africa, the use of these "veld" products has been encouraged to diversify people's livelihood strategies and to earn income. However, because the uses are diverse and producers are spread across the country, their access to markets and lack of a consolidated voice to represent their interests has hampered the optimization of realizing the true value of the products. Through SAREP's support, a diverse group of producers attended a series of meetings in 2015-2016 that enabled them to agree on forming an association that could better

represent their interests and provide them with better access to markets and capacity development. This association, called the Natural Producers Association of Botswana, was formed and immediately made representation to the Office of the President's Poverty Alleviation Fund for funding assistance to develop capacity among the producer groups and identify new market opportunities for the products being made. The fund immediately allocated more than \$250,000 to the association for a three-year period.

HUMAN-ELEPHANT CONFLICT

In the northern areas of the Okavango Delta in Botswana, around the Seronga village, rural communities principally live along the fluctuating river edge, depending on rainfed agriculture for their survival. However, the inland areas are also home to a large population of about 15,000 elephants that habitually traverse the fringe communities along set corridors to access water at the river, often wreaking havoc by raiding and destroying the meager millet crops and jeopardizing the livelihoods of the farmers.

EXHIBIT 15. CORRIDORS IDENTIFIED AND PLOTTED BY COMMUNITIES IN SERONGA ALLOWING FREE MOVEMENT OF ELEPHANTS TO WATER



Through partner Ecoexist, SAREP worked to assist communities with a participatory planning process, using the GIS-based decision-support tool LUCIS and its graphic capabilities to assist the communities to locate their fields on maps in relation to the identified elephant corridors. Armed with this new knowledge, the community, along with the local Seronga Sub-land Board, agreed on new land allocation criteria that prevented the allocation of plowing fields closer than 750 meters either side of the corridors to minimize the chance of elephants straying from the corridors to raid the fields. In addition, existing fields within that distance would be reallocated to safe area. Preferably, some fields would be formed into clusters with have solar-powered electric fences constructed around the clusters for added protection from the raiding elephants. This new strategy has been successful in reducing previously high levels of human-elephant conflict in the area.

HIV/AIDS PROGRAM ELEMENT

As initially conceived, HIV/AIDS was a small component of SAREP designed to boost awareness of HIV/AIDS prevention and management strategies through community-based activities that holistically enhance livelihoods, improve natural resource management, and educate basin populations on healthy lifestyles. With less than half of a percent of SAREP's overall budget, the program explored alternative approaches to achieve targets for the HIV/AIDS component. The project leveraged activities and resources of other organizations implementing HIV/AIDS programs in SAREP's targeted geographic areas, including initiating productive partnerships with USAID-funded health programs and the Peace Corps in Botswana. As an example, in partnership with the

USAID Maatla Project, SAREP initiated educational activities identified by the Botswanan government as priorities throughout the delta region, including working with Population Services International to conduct a safe male circumcision awareness campaign.

SAREP also integrated HIV/AIDS education into its ongoing activities, allowing the program to maximize impact and leverage existing relationships. These educational and training elements, which relied heavily on direct outreach and training, presented valuable opportunities to communicate fresh ideas and knowledge to existing audiences. As an example, HIV/AIDS

prevention and management messages were incorporated into education and outreach to communities that received SAREP assistance in water supply, sanitation, and CBNRM.



Farmers in the Seronga area of the Okavango Delta standing next to the solar-powered unit of the electric fence around their field. (Photo: SAREP)

A Peace Corps volunteer was assigned to SAREP from 2013 to 2015 and helped initiate several innovative activities:

- As part of the Okavango Artists Association's Adopt-a-School campaign, sponsored by SAREP, artists travelled to schools throughout Ngamiland to paint community-based murals that promote healthy living. SAREP trained artists on life skills development, art as a tool for life skills teaching, and how to paint community-based murals.
- SAREP teamed up with the Botswana local government District AIDS Coordinating Offices in Ngamiland to host football tournaments and HIV/AIDS testing campaigns. The tournaments offered HIV/AIDS testing services to anyone interested, featured health expositions, and ultimately requested that all football players test for HIV before playing. Fans were also encouraged to test for HIV to support their teams. These tournaments were effective and reached nearly 1,500 people:
- Life skills development was a key HIV/AIDS prevention program element and one that the Ministry of Education tried to cultivate in its learners. Life skills, defined as any psycho-social skill that helps one deal with the daily stress of life, are a crucial tool for youth to practice healthy behaviors that prevent HIV/AIDS. Consequently, the HIV/AIDS program funded life skills camps that targeted diverse, yet still vulnerable, populations.

One of SAREP's major strategies in promoting greater awareness of HIV/AIDS prevention and management strategies was film screenings. In collaboration with the Peace Corps and local partners, SAREP screened numerous STEPS films. [STEPS](#) is a film

company based in South Africa that produces documentaries and dramas on the HIV/AIDS epidemic in southern Africa. The films evoked strong emotional reactions in viewers and sparked discussion on often taboo topics. SAREP partnered with Thuso Rehabilitation Center in Maun to screen STEPS films to deaf and hearing-impaired youth. Both showings aired a film called “Read the Signs,” which was narrated in English and had English subtitles. The actors, however, used only sign-language to communicate. The film focused on the importance of getting tested for HIV/AIDS as a deaf person and how to deal with potential discrimination that arises when testing. After each screening, the STEPS facilitators directed a half hour discussion on the subject, in sign language, so students could give feedback. Also in Maun, SAREP worked with the District AIDS Coordinating Office, the Center for Youth of Hope, Women against Rape, and the Peace Corps to screen a film titled “An Intersection.” Filmed in Botswana, it tells the true story of an HIV-positive couple making the decision to have an HIV-negative baby and then going through the prevention of mother-to-child transmission process. The couple and their toddler attended each screening, and the mother facilitated a post-screening discussions.

SECTION 3

SUMMARY OF OTHER PROGRAM FEATURES

The Strategic Activities Fund (SAF) was designed to provide limited grant-type funding to deserving bodies or organizations to enable them to conduct activities that would fulfill SAREP's mandate. In general, the grants were provided to known entities that had records of delivering as intended on agreed statements of work and stated outcomes. Support was in the main provided to keystone NGOs in each country that worked with communities at ground level, for example, Namibia Nature Foundation and IRDNC in northeast Namibia, ACADIR in southeast Angola, and Kalahari Conservation Society in Botswana. This was a successful method of ensuring that activities took place at ground level to improve people's livelihoods and well-being.

STRATEGIC ACTIVITIES FUND

SAREP's Strategic Activities Fund played an important role in facilitating the program's work in the basin by enabling its key NGO partners to work at the community level on livelihood and climate change adaptation-related activities. As an opportunity to fund innovative activities, the SAF supported CA and devil's claw harvesting on the biodiversity side, water and sanitation activities such as CLTS, and continual efforts to enable communities to manage their natural resources through better land-use planning and MOMS. The SAF awarded 43 grants ranging from \$20,000 to \$150,000. Some highlights of the grants activities include:



Rural villagers in southeast Angola being trained to process devil's claw tubers and dry them on stretched netting. (Photo: SAREP)

- Working with ACADIR in Angola to support the continuation of CA, which resulted in a significant adoption of new techniques alongside impressive increases in yields and production. In addition, work done to promote the harvesting, preparation, and

sale of devil's claw has yielded positive results in increasing economic and social benefits to targeted communities and increased their resilience to climate change risks and threats.

- In Botswana, a long-running collaboration with Kalahari Conservation Society included promotion of PLUS processes, MOMS, CBNRM governance strengthening, and facilitating arts and craft activities in the field alongside CA in some communities. A key achievement was approval and implementation of the Lake Ngami Management Plan based on establishment of the new local community trust.
- SAREP worked with NNF in northeast Namibia to spearhead the capacity development of sustainable harvesting of devil's claw in cluster communities along with its groundbreaking work in CA, where impressive results were achieved in several communities.

Also in Namibia, SAREP worked with IRDNC to build on prior efforts to improve financial management systems and develop procedures and guidelines for financial management in income-generating conservancies in the Zambezi Region (formerly Caprivi Region). SAREP support ensured that all 13 conservancies received financial technical assistance that led to a marked improvement in the quality of financial reporting to conservancy members at annual general meetings and several instances where members have questioned budgets and expenditure reports and challenged their elected representatives to be more accountable in managing conservancy revenue. An additional example of the benefit of these activities was observed in the Bamunu and Balywera conservancies. The 4,086 registered members of the Bamunu and Balywera conservancies now have increased adaptive capacity to climate change due to their increased economic benefit, derived from the improved governance and management of their conservancies thanks to the revision of their conservancy constitutions. Through revision of the constitutions, the communities agreed to open separate bank accounts (an operational account and a community income account). A proportion of annual income is now deposited into the community income account and reserved for community benefits rather than spent through poor management practices as a single draw-down account during the fiscal year. Previously, community benefits were only disseminated by the remainder left in the single account at the end of the year.

Overall, the lasting impact of the grant to IRDNC will ensure that financial resources of the conservancies can be used more efficiently so that income has a greater impact on people's livelihoods: transparently, so more community members are aware of the value of conservation, in particular wildlife; accountably, so there is less chance of mismanagement and corruption; and equitably, so the people who bear the highest costs of living with wildlife get the highest returns. With this grant, SAREP also promoted cross-border communication between communities in the Zambezi Region and communities in Angola; topics of dialogue included developing a joint fire-management plan and exploring initiatives to combat illicit wildlife trade and the illicit trade in timber.

- A grant to the Ecoexist NGO in Seronga, northern Okavango Delta, designed to combat human-elephant conflict, produced significant results in conservation agriculture. Specifically, some model farmers enjoyed increases of five to 10 times their normal yields of millet; in one case, a female farmer increased her production by 12 times the normal yield. Experimentation with solar-powered electric fencing to help farmers protect their crops from marauding elephants worked well, preventing crop damage to fields where it was tested. Several community members started farming chili pepper, although the amounts grown were too small to meet ongoing demand as an irritant to be used to deter elephants from raiding crops. Additional success was seen in promotion of cluster farm associations to improve human-elephant conflict mitigation, with cluster farms supported in localities adjacent to wildlife corridors. Ecoexist was also instrumental in development and implementation of the LUCIS land allocation model, which ensures that the local land authority will allocate future fields away from wildlife corridors, reducing the prevalence of conflict and conserving the corridors.

PUBLIC-PRIVATE PARTNERSHIPS

Creative partnerships and collaborations initiated by SAREP resulted in its expanded reach and effectiveness. A key element of the program's success was the ability of SAREP staff to actively seek opportunities to leverage project activities. An example is the collaboration between the Namibian government's DWSSC, the Red Cross in Namibia, and the RAIN Foundation for the

provision of water to communities in the Kavango Region of northeast Namibia, where 690,282 was leveraged, with a direct impact of providing more than 13,000 people with improved water supply and 7,000 people with improved sanitation services.

LEVERAGING FUNDS

\$15.72 million was leveraged to support sustainable management and conservation of biologically important areas, with a further \$5.94 million leveraged for investment in drinking water and sanitation services.

In this regard, it is important to note that SAREP was a technical support program and therefore had small direct budgets for infrastructure provision. This program design heavily influenced its highly collaborative approach, requiring staff to build relationships with agencies such as DWSSC and NamWater to identify where they needed technical support and then deliver into those specific needs. This meant that the first two years were spent building those relationships to be able to deliver into specific need areas.

In Botswana, SAREP provided technical support to the Department of Environmental Affairs to assist in development of the proposal document to the Global Environment Facility. As a result of SAREP's intervention and technical direction, the country was awarded \$2,143,000 for mainstreaming sustainable land management activities within Ngamiland, with the Botswanan government committing a further \$13 million toward integrated water resource management activities associated with the GEF project. Several of the GEF's SLM project activities were founded on the successful implementation of SAREP's activities, with the SLM project providing continued support to CA and the implementation of the Lake Ngami Management Plan. In addition, the results of the remote-sensing land degradation and fire assessment work undertaken

collaboratively between SAREP and the U.S. Forest Service proved critical to guiding the geographical focus of the GEF project in Ngamiland.

GENDER AND MARGINALIZED POPULATIONS

From its start, SAREP demonstrated a commitment to ensuring that program activities respond to specific concerns for marginalized groups, such as women, girls, and youth. An early analysis of factors that affect participation of and benefits received by marginalized populations from national resource management informed the development of program strategies that ensured women, girls, and indigenous people benefited from SAREP's activities. Strategies identified included:

- Increased household income retained and managed by women through targeting activities that are dominated by participation of women, such as arts and craft-making. In this regard, the social-enterprise organization linked to the Nhabe Museum in Maun will play a significant role in enabling women in the Okavango Delta to gain meaningful employment and direct their own destinies.
- Provided technical assistance to OKACOM to incorporate data collection and assessment on marginalized populations into the decision-support system.
- Focused program activities in geographic areas with high numbers of indigenous groups, including the Divundu area in Namibia, the panhandle area of Botswana, and the Mucusso area of Angola and Namibia, where significant numbers of San people reside. For example, in the Bwabwata National Park in the Zambezi Region of northeast Namibia, support was given to IRDNC to employ a dedicated extension officer who worked with the Khwe San community and its Kyaramacan Association in a program to document their traditional knowledge, train them as professional guides to take tourists on guided walks showing off their tracking skills, and train them how to manage their association better.

SAREP incorporated marginalized ethnic groups into activities such as the community based land-use planning process, PLUS. Most members of SAREP partner communities in Ngamiland, including Sankuyu, Sehitwa, Nokaneng, Tubu, Gumare, Sepopa, and Ngarange, belong to marginalized groups such as San, Bayei, Hereros, and Hambukushu peoples. As such, their participation in SAREP activities was significant. In the Eastern Caprivi Region of Namibia, almost all communities supported by IRDNC belonged to what may be considered marginalized groups within the Namibian context, given the history of the residents of that area. In the Western Caprivi area, IRDNC works directly with a group of more than 500 San people, and a relatively large project has been approved there that will work to preserve their indigenous culture and ways of life. In southern Angola, much of the PLUS work completed in areas such as Mucusso and its surroundings relates to supporting San communities. Although these activities have not expressly addressed indigenous rights as an issue outside of general community development, these areas were selected in part due to their being historically marginalized in line with overall program objectives.

Other key activities included:

- With SAREP's support, the Okavango Delta was recognized by UNESCO/IUCN as a World Heritage Site, which protects minority communities residing within it. SAREP continued to engage with the Botswana Department of National Museums and Monuments to monitor its implementation processes. SAREP also worked with the Botswanan government to facilitate further evaluation visits between IUCN Commission on Environmental, Economic, and Social Policy personnel to meet with San groups in the delta, to ensure that their needs and wants were being incorporated in implementation of the heritage management process.
- Because girls and young women have been found to be disproportionately vulnerable to HIV infection in the basin, many of the awareness-raising campaigns carried out in collaboration with the Peace Corps in Ngamiland District of Botswana specifically included young girls and women. Of the 6,742 people reached in the campaign, 3,189 were female.
- SAREP worked with schools in Ngamiland District to support rehabilitation of ablution blocks and formation of sanitation maintenance clubs. The young and uneducated members of communities were often unaware of the potential for bad habits to cause contracting diseases or create unhygienic conditions. Young pupils were often at risk of having to visit bush areas around their schools, leading to truancy and valuable time missed in the classroom. Furthermore, going to the bush makes girls particularly vulnerable to rape, and a lack of proper ablution facilities at school is a leading cause of girls not attending school during menstruation. More than 5,000 pupils were supported in obtaining access to improved sanitation during SAREP.

Although youth were not specifically targeted for workshops and training courses, SAREP staff estimated that half of the participants were between the ages of 16 and 35. In addition, a major initiative aimed at supporting the youth of the indigenous San people in Namibia involved a SAREP grant to establish the Traditional Environmental Knowledge Outreach Academy in Namibia's Bwabwata National Park. This grant was aimed at transferring indigenous knowledge to San youth, renewing their cultural pride, increasing their employability, and ultimately providing the foundation for a culturally appropriate and sustainable approach to education. This activity targeted the lost generation of San youth in the area who are under-educated, unemployed, and largely disillusioned, by breaking the current cycle of school failure, loss of cultural knowledge, unemployment, and despair. The training center contributed to youth capacity building, conservation, and sustainable development efforts with its multi-focus approach on life skills, poverty alleviation, and preservation of indigenous knowledge systems.

SECTION 4

PROBLEMS ENCOUNTERED: SOLUTIONS AND LESSONS LEARNED

During implementation, several challenges arose in the efficient implementation of the program and in its delivery of technical activities.

CHALLENGES AND METHODS FOR ADDRESSING THEM

Some key challenges arose related to establishment of relationships with OKACOM in the initiation of the program, which may in many ways be considered normal for most projects starting up. Some of the complications that resulted from the large geographic footprint of the transboundary program and facilitating the integration of donor requirements with the protocols of the larger regional institutions such as SADC and OKACOM, while trying to meet requirements of the three individual riparian states or even local governance protocols and community traditions, at times required a great degree of finesse to navigate successfully.

CREATING STAKEHOLDER OWNERSHIP

During the startup phase of the program, it took a period of time for the working relationships between SAREP, USAID, OKACOM, and the three national governments to be established. It is widely acknowledged that running transboundary projects is notoriously hard, especially where these relate to water resources and river basins.

The trust-building process was tackled head-on, with the parties using quiet diplomacy and frequent personal communication centered on meeting the needs of the parties where possible. During the six years of the program, good relationships were established with all stakeholders by the chief of party, deputy chief of party, senior technical specialists, and staff in the field. Flexibility, responsiveness, and consistency were key to establishing this trust.

GEOGRAPHIC COVERAGE

As in all large transboundary programs, the sheer scale and size of the process can often become an inhibiting factor to achievement and success. In this case, the early strategy of working through established and successful local NGOs proved to be the key factor in enabling SAREP's reach to be extended across the greater portion of the basin, and in the case of Namibia, to also include the Zambezi Region through provision of additional funding by USAID/Namibia.

Although it was relatively easy to service the Botswana component of the program due to the presence of the SAREP main office in Gaborone and the main technical office in Maun, through negotiation with the national governments of Angola and Namibia, the establishment of satellite offices in Rundu (Kavango Region of northeast Namibia) and in Menongue (capital of Cuando Cubango Province of southeast Angola) provided easy access to the local NGO establishments and local governance structures. Without the flexibility of responding to these requests, the processes of obtaining authorization and permission for numerous activities in those areas would have been constrained.

REGIONAL PROTOCOLS

SAREP was carried out through the auspices of a USAID-SADC bilateral agreement, and by association, because OKACOM is a SADC river basin organization, SAREP's work with both bodies was subject to the protocols, regulations, and agreements of those bodies, while in some instances, the regulatory requirements of the riparian countries at times made implementation of activities complicated. The requirement for work and travel visas in some of the states was possibly the single most complicating issue, because the requirements varied, and often the time taken to process these precluded timely response to some important or urgent activities.

Despite frequent attempts to resolve these complications, it was eventually accepted that national immigration requirements were paramount to program needs and so means were found to work within the given constraints and carry out the work within limits.

LESSONS LEARNED FOR FUTURE PROGRAMS

Despite the adaptive management approach or strategy adopted by the program as a means of learning by doing, some lessons were learned that indicated that alternative ways of doing things might have been better in terms of good and bad practice. A key lesson regarding good practice was use of local on-the-ground NGOs to implement major activities dealing directly with communities and local governance systems. Another obvious one was the need to invest in developing and nurturing relationships with all stakeholders, from SADC through the commission and national governments, down to local government structures and communities themselves. Further positive practices were the use of and reliance on science as a foundation for activities, encouraging participation of communities in implementation, as well as leveraging alternative sources of funding to carry out the development of infrastructure that supported the initial technical input of SAREP.

STAKEHOLDER RELATIONSHIPS

As indicated above, the need to foster good, strong relationships with all stakeholders was seen as mandatory by the program executive and expressed in all team meetings. The trust built by all program staff and partner organizations from IRDNC in Namibia, ACADIR in Angola, to KCS in Botswana, as well as other subcontractors and government officials overseeing elements of the program's implementation, assisted in achievement of SAREP's annual work plans.

Inherent in the fostering of good relationships was a spirit of humility and responsiveness among program staff, who understood that the program was created to make a difference to the lives of people in the basin. This attitude reassured stakeholders of the true intent of the technical assistance being offered by USAID and opened many doors to allow implementation to take place freely and with goodwill. It is this frame of thought and goodwill that played a major role in persuading/encouraging USAID to provide the two-year extension, the interim three-month no-cost extension, the costed one-year extension, and the final no-cost three-month extension to effectively close out the program.

SCIENTIFIC APPROACH

The use of sound science in the planning and execution of activities provided a strong foundation for the success of the program. From the initial stages of commissioning the Ecosystems Health Assessment in 2010, through which a macro-overview of the ecological health of the greater basin and surrounding ecosystems allowed more focused planning to be carried out in the initial overall five-year period; to the use of well-founded social science processes such as LUCIS, participatory planning, and mapping with communities to develop their PLUS plans; to identifying economic activities in participating communities' areas and zoning the land to prevent competing uses from causing conflict, SAREP's scientific, system-oriented approach laid strong foundations for later work with each of those communities.

All activities carried out in support of biodiversity and ecosystem management were designed to ensure that findings and responses were well-grounded in peer-reviewed science. From recommendations in the SEA of the Okavango Delta, the biodiversity surveys and assessments in southeast Angola, to hosting of a Wildlife Management Symposium with the Botswana Department of Wildlife and National Parks to better understand why some populations of wildlife species were declining, developing rigorous wildlife monitoring data collection processes that linked to a monitoring website, use of GIS and satellite imagery to track trends in ecological status of land across the basin, monitoring in real time the movement of key wildlife species such as elephant, buffalo, wildebeest, and zebra in their use of corridors between Botswana, Angola, and Zambia; all contributed to developing a robust decision support system for OKACOM to use in managing the basin's ecosystems and biodiversity.

COMMUNITY ENGAGEMENT AND PARTICIPATION

A major lesson learned in the engagement with communities was giving them the opportunity to realize the potential of their land and social and economic opportunities that existed on it and in their natural resources. For many communities, the process of assessing their land, determining what activities should be carried out where, and how the use of natural resources should be monitored and consequently managed created strong cohesion within the communities, and in many cases, a new sense of purpose beyond a fatalistic approach to life. The gratitude to SAREP and USAID for this realization helped to foster deep trust in the program and its intentions of assisting the communities to improve their well-being and develop alternative livelihood strategies beyond the narrow focus of traditional rainfed agriculture.

LEVERAGING OTHER DONOR FUNDS

SAREP's funding was clearly understood to be limited from the onset, despite constant requests from OKACOM and partners for support in developing infrastructure such as water supply pipelines, water storage towers, river-flow gauging stations, and other activities outside of the program mandate of technical support. However, SAREP made an effort to work with partner funding agencies such as the U.K. Department for International Development's climate resilience program called CRIDF, the World Bank, UNDP-GEF, the U.S. Forest Service, and Coca-Cola's RAIN fund, as well as with the national governments themselves. In many instances, the national governments had funding in their budgets, but lacked the ability to activate the release of funds due to a lack of staff to carry out engineering assessments, developing plans for engineering works, or having enough staff to complete reporting procedures.

In this way, significant amounts of funding for infrastructure were able to be released to allow piping to be laid, boreholes to be assessed and rehabilitated, research to be carried out for surveying land degradation, and workshops and seminars held to consult on national sanitation strategies, among a host of support provided above and beyond the limited means of SAREP. This collaboration and leveraging requirement should be built into all future USAID programs as a means of not only meeting the larger needs of the organizations focused on, such as OKACOM, but also in bringing donor agencies closer together in a synergistic fashion.

SECTION 5

THE ROAD AHEAD

During six years of support to OKACOM, SAREP not only achieved a significant amount of work in improving the lives of people in the Cavango-Okavango River Basin, but also in strengthening the ability of the commission to better manage components of its mandate and action plan. The work carried out through the program has contributed to a high degree of sustainability in terms of capacity within OKACOM and its associated bodies, national government staff, local government staff, and especially within communities. In terms of activities initiated, many have either come to a logical planned conclusion or have been part of negotiations with other agencies such as the KAZA TFCA process, CRIDF, and World Bank, or even government ministries themselves, for them to take over further elements into the future.

OKACOM STRENGTHENED

With the support provided to OKACOM, the future of its ability to function better is significant, especially in terms of being able to count actual progress in its achievement of many aspects of its strategic action plan at the transboundary level and the national level. At the transboundary level, it has several examples of successful activities to encourage further collaboration, such as development of the Transboundary Fisheries Policy and Management Plan, to work from. At the national level, collaboration of Namibia's DWSSC and NamWater with SAREP provided a powerful example of synergistic work that enabled more than 30,000 people in the basin to have access to improved drinking water. In Botswana, the Department of Wildlife and National Parks has gained significantly in its ability to monitor and manage wildlife populations in the Okavango Delta, and in Angola, the success of devil's claw harvesting and sales has shown the government that such rural development approaches based on sustainable use of natural resources has huge potential to uplift rural communities and improve their livelihoods.

OKACOM staff have been trained on the skills of conflict management through the support of Aaron Wolf, professor at Oregon State University who is a global specialist in river basin conflict mediation. Using these skills, the three countries should be better able to avoid any serious tension arising due to water demands or development needs.

EXTENSION OF OLD SAREP ACTIVITIES

Many of the activities initiated by SAREP will have come to their logical conclusion from a programmatic point of view. However, almost all conservation and development activities can be seen as works in progress — processes with no finite limits.

Take, for example, the social enterprise organization CraftHood formed in Ngamiland through SAREP support, which assisted basket weavers and crafters in the delta to improve their skills, improve the quality and quantity of their products, access new markets, and realize a higher value for their handiwork, will continue its work well

beyond the close of SAREP. The process of further refining the crafters' capacity, as well as reaching out to a wider group of crafters to participate in the initiative, will be continued through TFI, which has arranged further funding through the Botswana Department of Gender Affairs, local private sector bodies, and potentially the new UNDP-GEF project, the Sustainable Land Management project.

Other activities such as the Lake Ngami Management Plan and its strategy to develop tourism in the area will potentially be taken up by KfW and its KAZA TFCA program; CLTS will be promoted and supported by the Botswana Ministry of Health, and Conservation Agriculture in Ngamiland will be supported by the Ministry of Agriculture and through partners Pabalelo Trust and Ecoexist. In the Kavango Region of northeast Namibia, provision of water to communities will be continued through NamWater, while in the same area, NNF will continue to support local communities that engage in harvesting devil's claw, and support to communities in the Zambezi Region will continue through ongoing programs being run by IRDNC based on assistance from SAREP in strengthening community governance processes. Many other similar initiatives from SAREP will be continued through government agencies or local NGOs.

NEWLY EMERGING TRANSBOUNDARY ISSUES

Several new issues have come to the fore as matters of significant interest to the Okavango River Basin and southern Africa region as a whole. The first of these is the threat of illicit wildlife trade, especially that of trade in ivory and rhino horn, and the devastating consequences of this on elephant and rhino populations in the SADC countries. Although southern Africa has thus far managed to maintain strong conservation agencies to counteract such illegal trade, easily accessible populations in west, central, and east Africa are dwindling, and poachers appear to be shifting their focus toward southern Africa. The U.S. government and the European Union have thrown their weight behind combatting this trade and will provide significant support to develop ways and means for the region to become a bastion of hope for protecting existing populations from extinction in the long term.

Another disturbing trend in the region is that of growing opposition to the sustainable use of specific natural resources in the form of hunting wildlife. Although there may be certain ethical grounds to this, millions of Africans have hunted wild animals as a traditional practice to supplement their livelihood strategies, and this opposition is now threatening the livelihoods of these people. In the past, USAID invested millions of dollars in community-based natural resource management programs in southern Africa that prevented poaching of wildlife in many countries due to the benefits that communities derived from the practice. The capture of the global moral high ground by a small minority of people will in many aspects play into the hands of the master-minds of the illicit wildlife trade as rural folk increasingly become alienated from their natural resources and support illicit activities.

As the wildlife corridors in the Zambezi Region (formerly the Caprivi Strip) of northeast Namibia that SAREP has worked assiduously to re-create for wildlife such as elephants, buffalos, wildebeests, and zebras, to traverse between Botswana and Angola and Zambia

once again, become re-established, increasing numbers of animals are expected to move back into the southeast areas of Angola abandoned during the civil war there. By working with communities in northeast Namibia to move away from the floodplains that the wildlife prefers to move along between the countries, people have shifted and are taking the opportunity to access the wildlife for tourism purposes. However, once in Angola and Zambia, these animals may become vulnerable to poaching for their ivory and meat or be killed if they are perceived to be crop raiders. These human-wildlife conflicts and poaching issues will have to be addressed by Angolan and Zambian authorities.

EMERGING EFFECTS OF CLIMATE CHANGE AND POPULATION GROWTH IN THE REGION

The region's population is expected to more than double from 250 million people today to about 550 million by 2050, with more than 70% of these people living in urban centers. It is also estimated that climate change will affect the western section of the region, reducing rainfall, and consequently, surface water flows in key basins emanating from Angola and Zambia and within South Africa. It is foreseen that this will significantly affect agriculture and water provision across the region, reducing agricultural productivity in many central and western areas of southern Africa and causing key rivers such as the Zambezi River to have erratic and unpredictable flows with consequential diminished hydropower generation. The impact of doubling the human population and reduced access to water in key areas will invariably place severe stress on communities and urban areas due to competition for water, energy, and food. The potential conflict resulting from this competition may escalate as governance structures disintegrate under law enforcement demands, and chaos is not an unimaginable outcome.

The experience of SAREP and RESILIM highlighted that government policies relating to conservation and development in the countries of the region often lack harmonization and/or integration at the transboundary level and internally at the national level, leading to a lack of coordination in the regional context. Exacerbating this is the propensity for high-level decision-makers (permanent secretaries and director generals, ministers, captains of industry, academics, and heads of NGOs) to interpret existing policies parochially or opportunistically, often ignoring negative consequences or unknowingly creating problems. Inherent in this is a lack of understanding of how such policies play out in an integrated wider scheme of things into the future.

The SAREP and RESILIM programs jointly planned to host a series of high-level dialogue retreats for such decision-makers from key countries in southern Africa (Angola, Botswana, Namibia, Zambia, Zimbabwe, South Africa, and Mozambique) to create greater awareness of critical emerging issues in conservation and development, where if these are not seriously addressed in the coming decades, will have significant negative effects in the region. Examples of these are:

- Looming crises in water management and use, leading to transboundary conflict, tension, and acrimony

- Looming crises in energy demands, with rolling blackouts disrupting national economies
- Conversion of forests and woodlands to charcoal for energy, resulting in large-scale loss of indigenous forests, accelerated soil erosion, and loss of biodiversity
- Escalating illicit trade in wildlife products, leading to the decimation of rhino and elephant populations, resulting in population crashes, reductions in tourism, and increases in bushmeat trade
- Loss of resilience in ecosystems and biodiversity, as well as in social capacity to withstand shocks and disasters

As a result of the high-level dialogue that SAREP held in conjunction with RESILIM, for high-level decision-makers in governments of the basin states, an increased level of awareness about these threats to the region now exists in those governments, and it is essential that the initiative is expanded to ensure that all government sectors in each country take the issues seriously and work across boundaries to plan as a region. SADC has a major role to take up the cudgel and work to coordinate its member states and promote collaborative solutions to be found based on the region's strengths and weaknesses.

ANNEX A. ACHIEVEMENT OF PROJECT RESULTS

The base period refers to the initial three-year phase of the project, which was followed by a further two-year phase in which the project worked toward its life-of-project target totals.

EXHIBIT AI. MONITORING AND EVALUATION RESULTS FOR YEARS 1-5

INDICATOR	BASE PERIOD			YEARS 1-5		
	TOTAL	TARGET	YEARS 1-3	TOTAL	TARGET	YEARS 1-5
KRA 1: Cooperative management of targeted shared river basins improved						
1. Number of science-based systems improved at the national/regional level (Output)	7	2	350%	9	3	300%
2. Number of people within Okavango Basin-related institutions trained on technical and/or institutional strengthening areas (Output)	395	142	278%	463	250	185%
3. Number of improved water resource allocation plans (Impact)	0	85	0%	51	152	34%
4. Number of Okavango-Basin related institutions providing improved services to their constituencies (Impact)	6	3	200%	6	6	100%
KRA 2: Biodiversity and ecosystem services monitored and protected						
5. Number of threat assessments to biologically important areas developed and monitored (Output)	52	21	248%	54	33	164%
6. Number of people trained on natural resource management and/or biodiversity conservation at the institutional and community level (Output)	3,967	1,398	284%	4,586	2,500	183%
7. Number of community-based natural resource management plans developed and implemented (Output)	40	19	211%	42	32	131%
8. Area (hectares) under improved natural resources management - in million (Impact)	5.82	2.10	277%	6.511	4.000	163%
9. Area (hectares) of biologically important area under improved management - in million (Impact)	5.77	1.9	304%	6.453	5.946	109%
10. Number of people engaged in new or enhanced conservation-based income-generating activities (Output)	320	2,250	14%	2,319	5,000	46%
11. Amount of resources leveraged for sustainable management and conservation of biologically important areas - in million \$ (Output)	0.52	2.00	26%	15.72	5.00	314%
KRA 3: Access to safe water supply and sanitation increased						
12. Number of people trained on water use, conservation, and sanitation at the institutional and community levels (Output)	1,802	1,455	124%	2,669	2,500	107%

INDICATOR	BASE PERIOD			YEARS 1-5		
	TOTAL	TARGET	YEARS 1-3	TOTAL	TARGET	YEARS 1-5
13. Number of people in target area with access to improved drinking water (Impact)	6,260	9,750	64%	20,885	20,000	104%
14. Number of people in target area with access to improved sanitation services (Impact)	2,330	12,500	19%	20,792	25,000	83%
15. Amount of resources leveraged for investment in drinking water and sanitation services - in million \$ (Output)	0.59	2.00	30%	5.94	5.00	119%
KRA 4: Targeted river basins resources managed in the context of global climate change						
16. Number of people with increased adaptive capacity to cope with climate variability (Impact)	29,800	19,750	151%	30,871	30,000	103%
17. Number of tools adopted by governmental, nongovernment institutions, or communities to manage climate-caused crises such as floods, droughts, and fires (Output)	4	9	44%	5	12	42%
KRA 5: Regional, national, and local development planning capacities around river basins (for land and water use, biodiversity conservation) strengthened						
18. Number of project beneficiaries more informed about HIV/AIDS prevention, treatment, and access to treatment (Impact)	2,284	500	457%	10,786	4,341	249%
Namibia buy-in						
19. Number of people in Namibia with increased capacity to cope with floods (Impact)	29,800	6,000	497%	29,800	6,000	497%
20. Area (hectares) in Namibia under improved flood management plans - in million (Impact)	0.27	0.02	1,354%	0.2707	0.02	1,354%

EXHIBIT A2. MONITORING AND EVALUATION RESULTS FOR YEAR 6

INDICATOR	YEARS I-5			YEAR 6							LOP		
	TOTAL	TARGET	Y I-5	Q1	Q2	Q3	Q4	TOTAL	TARGET	Y 6	TOTAL	TARGET	LOP
KRA 1: INCREASED ACCESS TO SAFE WATER SUPPLY AND SANITATION FOR TARGETED COMMUNITIES IN THE CORB													
1. Number of people in target area with access to improved drinking water (Impact)	30,535	20,000	104%	0	1,099	8,551	0	9,650	4,000	241%	30,535	24,000	127%
2. Number of people in target area with access to improved sanitation services (Impact)	20,821	25,000	83%	0	12,721	1,090	878	14,689	4,207	349%	35,510	25,000	142%
3. Number of improved water resource allocation plans (Impact)	51	152	34%	0	0	110	0	110	101	109%	161	152	106%
KRA 2: DECREASED THREATS TO BIODIVERSITY CONSERVATION WITHIN TRANSBOUNDARY MANAGEMENT AREAS													
4. Area (hectares) under improved natural resources management (Impact)	6,511,441	4,000,000	163%	0	141,800	6,760	9,460,995	9,609,555	560,000	1,716%	16,120,996	4,560,000	353%
5. Area (hectares) of biologically important area under improved management (Impact)	6,453,409	5,946,000	109%	0	141,800	5,800	7,167,076	7,314,676	361,640	2,023%	13,768,085	6,307,640	218%
KRA 3: INCREASED ADAPTIVE CAPACITY TO THE EFFECTS OF CLIMATE CHANGE FOR TARGETED COMMUNITIES													
6. Number of people with increased economic benefits derived from sustainable natural resource management and conservation (Output)	3,632	5,000	73%	0	4,086	0	280	4,366	2,681	163%	7,998	5,000	160%

INDICATOR	YEARS 1-5			YEAR 6							LOP		
	TOTAL	TARGET	Y 1-5	Q1	Q2	Q3	Q4	TOTAL	TARGET	Y 6	TOTAL	TARGET	LOP
7. Number of people with increased capacity to adapt to the impact of climate change (Impact)	30,315	30,000	101%	0	0	892	4,376	5,268	3,480	151%	36,139	33,480	108%
8. Number of tools adopted by government, nongovernment institutions, or communities to manage climate-caused crises such as floods, droughts, and fires (Output)	5	12	42%	0	2	3	5	10	7	143%	15	12	125%
KRA 4: INCREASED CAPACITY WITHIN TARGETED NATURAL RESOURCE MANAGEMENT AGENCIES													
9. Number of institutions with improved capacity to address climate change issues as a result of U.S. government assistance (Impact)				0	2	4	8	14	5	280%	14	5	280%
10. Number of laws, policies, strategies, plans, or regulations addressing climate change mitigation or adaptation and/or biodiversity conservation officially proposed or adopted as a result of U.S. government assistance (Output)				0	3	7	3	13	7	186%	13	7	186%

ANNEX B. FINANCIAL HIGHLIGHTS

EXHIBIT B. PROJECT EXPENDITURES

COLUMN DESCRIPTION	BASE PERIOD 6/18/2010 - 6/17/2013	OPTION PERIOD 6/18/2013 - 9/30/2015	ESTIMATED EXTENSION PERIOD 10/1/2015 - 12/17/2016	ESTIMATED LIFE OF PROJECT
Cumulative Total Estimated Budget Ceiling	\$13,751,054	\$23,331,377	\$27,419,063	\$27,419,063
Period Budget	\$13,751,054	\$9,580,323	\$4,087,686	
EXPENDITURES				
SAREP Core	\$11,569,827	\$7,478,609	\$4,200,450	\$23,248,886
SAREP SAF	\$1,527,009	\$822,567	-\$2,772	\$2,346,804
Namibia Buy-In	\$1,108,862	\$701,573	\$12,938	\$1,823,373
Expenditures Subtotal	\$14,205,698	\$9,002,749	\$4,210,616	\$27,419,063
Remaining Balance	-\$454,644	\$122,930	\$0	\$0
Cumulative Expenditures + Projections Total	\$14,205,698	\$23,208,447	\$27,419,063	\$27,419,063

SAREP was awarded on June 18, 2010, with an initial contract ceiling of \$13,067,663, which was soon increased in Prime Contract Modification No. 2 to \$13,751,054. The modified contract ceiling encompassed the original base period for Years 1, 2, and 3, implemented between June 18, 2010, and June 17, 2013.⁴

On April 14, 2013, SAREP was awarded a two-year option period, extending the contract through Years 4 and 5 until June 17, 2015. The option period was reflected in Prime Contract Modification No. 7, with the award of the option period increasing the contract ceiling to \$23,331,377, and an additional \$2,991,410 obligated to contract. Therefore, the cumulative spending of the base period exceeded the original base period budget due to the granted obligation as part of this modification. The cumulative spending at the conclusion of the base period also reflects the culminating effect of SAREP's high-volume burn rate at the height of the project's technical implementation. This option period was then further extended through a no-cost extension, with a contractual end date of September 30, 2015. The contract ceiling remained at \$23,331,377.

A final, one-year costed modification was granted to SAREP on September 14, 2015, in Prime Contract Modification No. 17, increasing the contract ceiling to \$27,419,603 and

⁴ Financial reporting periods include the full month of the final month of each contractual period, to reflect the monthly billing cycle established by Chemonics.

extending the contractual end date to September 30, 2016. Similar to the conclusion of the base period, spending at the conclusion of the option period continued at an increased burn rate to reflect the anticipated one-year extension period. The minimal balance of contractual funds at the conclusion of the option period accounted for ongoing technical implementation to carry the project into its final Year 6. Chemonics designed a plan to rearrange labor and other direct costs to continue operations and support a variety of activities during the extension period, including high-level technical conversations in Namibia and Angola, additional harvesting of devil's claw in Namibia, a closeout event in conjunction with long-standing counterpart OKACOM, and a wildlife monitoring website launch, providing a much-needed knowledge management platform for game parks in the Okavango.

The contract was then further extended on September 13, 2016, via a no-cost extension through December 17, 2016, with no subsequent increases to the total contract ceiling.

At the time this report was written, SAREP expected to spend all project funds, navigating through several no-cost contractual extension periods and allocating funds appropriately to provide best-value technical implementation to the government.

ANNEX C. ACTIVITY AND FOLLOW-ON REPORT

SAREP was a six-year project to support SADC initiatives to address threats to ecosystem services and biodiversity in priority shared river basins. The program worked with OKACOM to implement strategies and activities centered on conserving biodiversity, improving water supply and sanitation services, and strengthening regional capacity to respond to the effects of climate change. In the initial stages, activities also addressed issues relating to HIV/AIDS in Botswana; by Year 3, HIV/AIDS-focused activities had been concluded.

This report provides an overview of activities finalized by completion of the project, handed over for continuation by other development partners, or discontinued. Project implementation ended on the September 30, 2016, as SAREP completed its closeout.

A. EXIT AND SUSTAINABILITY FRAMEWORK

The 39 main activities approved by USAID/Southern Africa are depicted below as established in the annual work plan. Exhibit C below details the work accomplished during the final five months of the program and explains how SAREP handed over work to interested and willing partners to continue or conclude.

EXHIBIT C. YEAR 6 EXIT AND SUSTAINABILITY STRATEGY AND ACTIVITIES

KRAS AND ACTIVITIES	EXIT AND SUSTAINABILITY STRATEGY
KRA 1: ACCESS TO SAFE WATER SUPPLY AND SANITATION FOR TARGETED COMMUNITIES IN CORB	
KRA 1.1: Community water supply	
Activity 1. Provide technical assistance to Kayengona and Masivi, Kavango Region, Namibia	<ul style="list-style-type: none"> • SAREP leveraged support of U.K. Department for International Development’s CRIDF program to drill additional boreholes at Kayengona and install required infrastructure for Kayengona and Masivi, after NamWater had reallocated funding from these developments. These activities are supported by the technical surveys of Bergstan and the logistical support of Jeffares and Green. • In 2016, the water supply at Kayengona was improved through additional boreholes, and the Uvungu Vungu and Mayana communities were connected to the water storage facilities at Kayengona, with all infrastructure officially handed over to NamWater. • NamWater will continue to manage the infrastructure in collaboration with associated water point committees.
Activity 2. Calai water supply, Angola	<ul style="list-style-type: none"> • This activity was discontinued after a decision by U.K. Department for International Development’s CRIDF to reallocate funding from the Calai water supply scheme to the Kayengona scheme in Namibia. This decision was a result of slow progress made in Angola by CRIDF. • SAREP and CRIDF worked with the district administration in Calai to officially discontinue this activity.
Activity 3. Mobilizing hippo-rollers and water wheel pumps within communities in Angola	<ul style="list-style-type: none"> • This activity was discontinued following difficulties encountered in developing the water wheels alongside a decision to not move ahead with the

KRAS AND ACTIVITIES	EXIT AND SUSTAINABILITY STRATEGY
	<p>mobilization of Hippo Rollers, subsequent to improved water supply numbers for the Karutci community in Namibia.</p> <ul style="list-style-type: none"> Water supply infrastructure installed through the support of SAREP in Karutci in 2012 continued to increase the number of people with access to improved water supplies. This infrastructure has been handed over to and is now managed by NamWater and the Karutci water point committee. In July 2016, SAREP completed a final assessment of the number of people benefiting from this water supply scheme.
<p>Activity 4. Support to the Coca-Cola RAIN program in Namibia</p>	<ul style="list-style-type: none"> All the infrastructure components of the Coca-Cola project were completed. SAREP worked with NamWater and Coca-Cola RAIN to support development of remediation plans to improve water quality at some of the boreholes and contributed to training of about 150 water point committee members and about 30 water point caretakers in 2016. Remedial action plans were completed by the end of July 2016, with NamWater managing the infrastructure and monitoring the supply of water to relevant communities.
<p>KRA 1.2: Facilitate provision of water supplies to facilitate communities to reduce pressure on key biodiversity areas</p>	
<p>Activity 5. Oversee planning of borehole drilling/equipment in Kwando wetlands, Zambezi Region, Namibia</p>	<ul style="list-style-type: none"> CRIDF selected a borehole drilling company following a request for proposals. In 2016, the boreholes were drilled and the water supply infrastructure installed. NamWater will manage the infrastructure and supply of water to relevant communities.
<p>KRA 1.3: Capacity development for water sanitation and management</p>	
<p>Activity 6. Improve management of sanitation facilities in six schools in Ngamiland, Botswana</p>	<ul style="list-style-type: none"> SAREP confirmed with the Ministry of Education its commitment to funding infrastructural developments required to improve sanitation and water supply systems in the six schools. In May 2016, SAREP facilitated a lessons learned workshop with the Ministry of Education for departmental heads in the ministry in Gaborone to showcase advantages of the WASH M&E toolkit developed by SAREP. In June 2016, SAREP completed development of a hydro-map for each of the six schools that defines where infrastructural improvements are required. The ministry will use these hydro-maps to rectify the problems.
<p>KRA 1.4: Community sanitation and health</p>	
<p>Activity 7. Enhance sustainability of CLTS within communities, Angola</p>	<ul style="list-style-type: none"> SAREP implemented the M&E toolkit across the four community clusters and monitored development of associated latrines. In July 2016, SAREP handed over the M&E toolkit to CLTS volunteers for sustainable implementation and will have verified the open-defecation-free status of the 11 villages in the cluster communities. Furthermore, SAREP will have completed discussions with the Ministry of Health in Angola and handed over the CLTS roll-out program in the Cuando Cubango Province.
<p>Activity 8. Roll out school-led total sanitation to schools in Ngamiland, Botswana</p>	<ul style="list-style-type: none"> SAREP held triggering events and trained school-led total sanitation volunteers in all six schools. In 2016, the environmental clubs in each school started to implement the school-led total sanitation M&E toolkit to ensure sustainability of the process, while Jeffares and Green will have presented potential benefits of implementing the activity across the country to the Ministry of Education. Furthermore, SAREP will have completed development of plans for integrating WASH/CLTS issues into the ministry's curriculum.
<p>Activity 9. Assess progress in latrine provision rollout in Kavango Region, Namibia</p>	<ul style="list-style-type: none"> SAREP confirmed that 791 latrines were installed in Kavango Region, while the DWSSC confirmed their installation was supported with the rollout of CLTS. SAREP confirmed installation of a further 64 latrines. DWSSC is managing the latrine infrastructure in Kavango in collaboration with the CLTS volunteers in each community.

KRAS AND ACTIVITIES	EXIT AND SUSTAINABILITY STRATEGY
	<ul style="list-style-type: none"> In July 2016, SAREP held meetings with DWSSC and UNICEF Namibia to collaboratively develop an implementation strategy for CLTS across Namibia.
KRA 1.5: Integration of CLTS into regional- and national-level programs	
<p>Activity 10. Institutional support for CLTS at national level in Botswana</p>	<ul style="list-style-type: none"> SAREP developed a handover protocol for local government to support communities to manage CLTS and has undertaken training of local government officials in Ngamiland. In July 2016, SAREP completed a CLTS regional strategy implementation plan for Ngamiland and developed a CLTS handover plan to the North West District Council.
<p>Activity 11. Develop 321 content message service for the Ministries of Health, Environment and Agriculture in Botswana</p>	<ul style="list-style-type: none"> Subcontractor Human Network International facilitated content development workshops in March 2016 to develop information that was given to subscribers on issues of water sanitation and hygiene, agriculture, and wildlife and fisheries. These SMS messages were translated into Setswana. In 2016, Human Network International submitted a final call-in report on the completion of the development phase and completed launch of the data access service to the public. Subcontractor Human Network International signed a two-year service provider contract with Orange Botswana to continue to support the data access service beyond the lifespan of SAREP.
KRA 2: DECREASED THREATS TO BIODIVERSITY CONSERVATION WITHIN TRANSBOUNDARY MANAGEMENT AREAS	
KRA 2.1: Strengthen management of wildlife corridors	
<p>Activity 12. Develop conservation strategies for Sobbe and Salambala corridors</p>	<ul style="list-style-type: none"> IRDNC held meetings with the Dzoti, Sobbe, and Salambala communities and developed layout maps of land use within the confines of the corridors. John Mendelsohn will continue to work with the Namibian Ministry of Lands and Resettlement to define a strategy for the sustainable allocation of land around these corridors. In June 2016, SAREP developed land-use and conservation plans for each of the three corridors and handed these plans over to the traditional authorities in the Zambezi Region and the Ministry of Lands for implementation.
<p>Activity 13. Human-elephant conflict mitigation/farmer association governance/CA support</p>	<ul style="list-style-type: none"> Ecoexist developed an elephant conflict mitigation solar fence around a community clustered field in Mohembo East along the Okavango Pan Handle to pilot the effectiveness of the system. Ecoexist is monitoring and supporting CA activities in the Seronga Sub-district. Ecoexist implemented a rapid rural appraisal of CA farmers and non-CA farmers to assess the socioeconomic benefits of implementing CA. In July 2016, Ecoexist contributed to development of a value chain assessment of CA in Botswana, developed a report on the effectiveness of the solar fence, and completed support of the LUCIS rollout to the western part of Ngamiland to help conserve elephant corridors. Furthermore, Ecoexist completed development of cluster farm constitutions and management plans for the Botswana Ministry of Agriculture for clustered farms within the Seronga Sub-district. Ecoexist will remain active in the Seronga area by continuing to support the Tawana Land Board, CA farmers, and cluster farmers, and working to reduce human-elephant conflict through donor support by the Howard Buffet Foundation.
KRA 2.2: Development of protected area management plans for Angola	
<p>Activity 14. Preliminary mapping and scoping exercise for development of management plans for Luengue-Luiana and Mavinga National Parks, Angola</p>	<ul style="list-style-type: none"> SAREP has, through the efforts of subcontractor ACADIR, completed the rapid rural appraisal of communities living within the park. John Mendelsohn completed assimilation of all of the baseline GIS and developed maps of the parks and has undertaken an aerial survey of the parks to validate the mapping process. Draft maps were submitted to the Angolan Ministry of Environment for review.

KRAS AND ACTIVITIES	EXIT AND SUSTAINABILITY STRATEGY
	<ul style="list-style-type: none"> • In May 2016, all the scoping activities were completed and a scoping report submitted to the Angolan Ministry of Environment.
Activity 15. Develop park management plans	<ul style="list-style-type: none"> • Subcontractor SAIEA developed management plans that were presented to stakeholders in Menongue and Luanda in May 2016. • SAREP collaborated with KAZA TFCA as partners to support development of the plan so that KAZA was well-placed to support its implementation. • In July 2016, the final management plan was completed and handed over for implementation to the Angolan Ministry of Environment, with a launch event in Menongue in mid-July 2016.
KRA 2.3: Wildlife monitoring protocol and web-based data management - Botswana	
Activity 16. Standardized wildlife monitoring training	<ul style="list-style-type: none"> • SAREP completed the guide’s monitoring training of private sector safari operators, including Wilderness Safaris and Beyond, Sanctuary Lodges, and Great Plains, Belmond Safaris, Chobe Holdings, and Kwando Safaris. • Furthermore, the final website was pilot tested by the trained guides. • In 2016, all guides from safari camps in the Okavango were trained on the monitoring activities and the guides are now recording sightings using the standardized system. The safari operators are responsible for collecting the monitoring data and entering it into the associated website as part of their leasehold obligations to the Tawana Land Board and to the Botswana Department of Wildlife and National Parks.
Activity 17. Wildlife monitoring website	<ul style="list-style-type: none"> • SAREP contracted with MindQ to revise and update the wildlife monitoring website, based on feedback from the guide training process. • In September 2016, the website was revised and launched for public access. • The Botswana Department of Wildlife and National Parks is custodian of the website.
KRA 2.4: Support implementation of Lake Ngami Management Plan	
Activity 18. Capacity building and governance training for Lake Ngami Trust	<ul style="list-style-type: none"> • Subcontractor Travel for Impact undertook capacity building workshops with the Lake Ngami Trust members and reported on the initial activities in May 2016. • In July 2016, the training was completed. • The Lake Ngami Trust will continue to receive support from the UNDP-GEF Sustainable Land Management Program in collaboration with Tawana Land Board, the Botswana Tourism Organization, and the North West District Council.
KRA 3: INCREASED ADAPTIVE CAPACITY TO THE EFFECTS OF CLIMATE CHANGE FOR TARGETED COMMUNITIES	
KRA 3.1: Conservation agriculture in Angola and Botswana	
Activity 19. Rapid rural appraisal of CA in Angola	<ul style="list-style-type: none"> • SAREP developed a questionnaire that was implemented by ACADIR as part of a rapid rural appraisal of CA farmers in the four clusters: Mucusso, Calai, Cuangar, and Savate. • The rapid rural appraisal was implemented in May 2016, and the results presented to SAREP to assist with development of a value chain assessment of CA in the Okavango Basin.
Activity 20. Rapid rural appraisal of CA in Botswana	<ul style="list-style-type: none"> • SAREP developed a questionnaire that was implemented by Ecoexist as part of a rapid rural appraisal of CA farmers in the Seronga Sub-district. The rapid rural appraisal was implemented in May 2016, and the results presented to SAREP to assist with a value chains assessment of CA in the Okavango basin.
Activity 21. Extension support for conservation agriculture to existing master farmers in Angola	<ul style="list-style-type: none"> • ACADIR worked with CA farmers in the four clusters to provide extension support services through to the end of the ongoing rainy season. • In 2016, extension services to CA farmers were concluded after the farmers harvested their crops. • In 2016, SAREP met with the KAZA TFCA Secretariat about its plans to support CA activities in Cuando Cubango Province. SAREP handed over all relevant reports to support their future activities.

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KRA 3.2: Rainwater harvesting and conservation agricultural support in Botswana	
Activity 22. Provision of rainwater harvesting units with existing master farmers in Botswana	<ul style="list-style-type: none"> • SAREP has worked with the Pabalelo Trust to complete development of five rainwater harvesting systems in the Samochima area of northern Botswana. • The Pabalelo Trust has submitted a report outlining the relative benefits of different system designs and in June 2016 submitted a report that describes the benefits to crop yields of the application of harvested water to CA fields. • In August 2016, SAREP concluded its support of this activity and handed over management and support of the rainwater harvester systems to the Pabalelo Trust. • The Pabalelo Trust will continue to work with Samochima farmers to use the rainwater harvester systems.
KRA 3.3: Fire management support in Botswana	
Activity 23. Supporting district fire management plan implementation (workshop) and technical support to Advanced Fire Information System	<ul style="list-style-type: none"> • SAREP collaborated with the U.S. Forest Service to provide technical support for development of the Ngamiland Bush Fire Management Plan and the Tsodilo Hills Fire Management Plan. Technical revisions of these plans were submitted to the Botswana Department of Forestry and Range Resources and to the UNDP-GEF SLM program. The latter is supporting the Department of Forestry with fire mitigation in Ngamiland, with a focus on the Tsodilo Hills. • In August 2016, SAREP and the U.S. Forest Service completed their provision of technical support to the Department of Forestry and the SLM program on their implementation of the Advanced Fire Information System around the Tsodilo Hills World Heritage Site, which is being implemented as part of a pilot study funded by the SLM program. The SLM program will continue to collaborate with and support the Department of Forestry post 2016. • The U.S. Forest Service's Remote Sensing Analysis Center developed a report on the effectiveness of fire breaks in Ngamiland, Botswana, to stop the spread of fires. The GIS-based analysis was completed by the end of 2016, and the report handed over to the Botswana Department of Forestry for its review and subsequent implementation of recommendations.
KRA 3.4: Expansion of LUCIS in Ngamiland, Botswana	
Activity 24. Community outreach required and technical support for implementation of LUCIS in areas west of the Okavango Delta	<ul style="list-style-type: none"> • SAREP facilitated meetings with three sub-district land boards, which govern land to the west of the Okavango Delta, on implementation of LUCIS. • SAREP facilitated a series of community meetings with 12 villages in this area to record their land-use preferences. This information was combined with those of the Land Boards, National and Regional Land Use Plans, and National legislation to develop LUCIS land-use suitability maps and conflict maps for each sub-district. These consultations were completed and the reports/maps submitted to the Tawana Land Board in July 2016. • In August 2016, SAREP completed the handover of all the LUCIS land-use suitability maps, LUCIS models, and baseline GIS to the Tawana Land Board for implementation and allocation of land.
Activity 25. Present results of the LUCIS process at a national forum	<ul style="list-style-type: none"> • In August 2016, SAREP developed a short series of PowerPoint presentations for the Tawana Land Board to support its capacity to present results of the LUCIS work to a wider audience. • The Tawana Land Board will continue to present results of the LUCIS process that has been completed in Seronga Sub-district and to the west of the Okavango at National Land Board forums in collaboration with the resident GIS/LUCIS consultant Kent Burger, who developed the LUCIS maps and is based in Gaborone.
KRA 3.5: Support to devil's claw beneficiation	
Activity 26. Gain political support for harvesting and sales of devil's claw in Angola	<ul style="list-style-type: none"> • ACADIR has completed stakeholder consultations with the governor's office of Cuando Cubango and provincial government departments. The result from these discussions was that the governor has granted permission for communities to start harvesting natural resources such as devil's claw, reeds, and thatching grass for commercial purposes, with permission also granted for these natural resources to be exported and sold to international buyers.

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	<p>However, before harvesting can begin, the government must first complete development of a natural resources harvesting policy.</p> <ul style="list-style-type: none"> • SAREP procured devil's claw harvesting kits for 1,500 people in Cuando Cubango. ACADIR trained these harvesters during April 2016 on sustainable harvesting techniques and preparation methods, as well as support discussions with devil's claw buyers to help the communities negotiate a price for devil's claw. Provincial authorities were included in all discussions and trained by ACADIR to support the devil's claw market. • In August 2016, SAREP handed over the technical support role it has been providing to the provincial government of Cuando Cubango.
Activity 27. Post-2015 season sustainability assessment in Namibia	<ul style="list-style-type: none"> • Subcontractor NNF has completed the post-2015 season sustainability assessment of devil's claw harvesting and sales in Kavango region of Namibia, with a report submitted to SAREP in February 2016.
Activity 28. Extend devil's claw training to new communities in Namibia	<ul style="list-style-type: none"> • NNF worked with five communities in the Kavango Region to train them to harvest devil's claw so that they may contribute to the collective sustainable harvest and sales in the region. NNF submitted a report on extension of the devil's claw harvester training to SAREP in October 2016 detailing the extent and volumes of the initial harvest from these communities and the economic benefits derived to harvesters. • In August 2016, SAREP completed discussions with NNF and MET to take over the ongoing management of devil's claw harvesting, processing, and sales in the Kavango Region.
KRA 3.6: Arts and crafts	
Activity 29. Support development of community craft outlets in Ngamiland, Botswana	<ul style="list-style-type: none"> • Subcontractor TFI completed registration of the not-for-profit social enterprise and is continuing to collaborate with community-based district craft producer centers to develop a board to govern its activities. • Many crafters from the community-based district craft producer centers have been registered, and more will continue to be registered with the support of TFI, with the social enterprise scheme and have direct access to the centralized marketplace through their district craft producer centers. • In 2016, TFI developed a website to profile activities of the social enterprise. • SAREP and TFI worked with the Botswana Department of Museums Nhabe Museum and the KAZA TFCA Secretariat to support the centralized crafters market and to take over technical support of the social enterprise. • In July 2016, the website was completed and launched, with a report on the activities, board membership, supporting organizations, and collaborators of the social enterprise provided to SAREP, KAZA, and the Nhabe Museum.
Activity 30. Train crafters	<ul style="list-style-type: none"> • TFI is continuing to provide capacity building training on business management, sales, and craft production to members of the craft producer centers from across Ngamiland. • All of the trained crafters have been registered with the social enterprise scheme. • A report on the management training provided to craft producers was provided to SAREP by TFI in July 2016.
KRA 4: INCREASED CAPACITY IN TARGETED NATURAL RESOURCE MANAGEMENT AGENCIES	
KRA 4.1: Follow up on payments for ecosystem services and endowment fund development	
Activity 31. Support establishment of an endowment fund for the Okavango Basin	<ul style="list-style-type: none"> • SAREP engaged with OKACOM and the World Bank to develop the endowment fund, with meetings held to improve the current concept. • SAREP received input from financial expert Chris Varco, a director of Cambridge Associates, the world's largest endowment fund specialist, who have offered to provide financial advisory services for the endowment fund once established. The World Bank is proposing to invest \$5 million into the fund as seed funding.

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	<ul style="list-style-type: none"> In 2016, SAREP and the World Bank presented the revised concept to the OKACOM commissioners. The World Bank will continue to support the initiative in collaboration with OKACOM.
KRA 4.2: Follow-up on WENSA	
<p>Activity 32. Support two WENSA follow-up coordination workshops</p>	<ul style="list-style-type: none"> SAREP engaged with the Botswana Ministry of Wildlife, Environment and Tourism and the U.S. embassy in Botswana to support two further WENSA meetings. Due to the diverse regional political background surrounding the implementation of WENSA, SAREP was unable to support further WENSA meetings. By August 2016, SAREP concluded its role in supporting these activities.
KRA 4.3: Support development of notification mechanism and basin-wide SEA	
<p>Activity 33. Technical support for notification mechanism and basin SEA</p>	<ul style="list-style-type: none"> SAREP's role in supporting development of the notification mechanism and the basin-wide SEA was hampered by a delay in the allocation of funds from UNDP-GEF to support Phase II of OKACOM's activities. SAREP had collaborated with OKACOM to include the notification mechanism and the basin-wide SEA in the UNDP-GEF project document. By August 2016, SAREP concluded its role in supporting these activities.
KRA 4.4: Exchange visits	
<p>Activity 34. Resilience of socio-ecological systems in southern Africa</p>	<ul style="list-style-type: none"> SAREP collaborated with RESILIM to host a high-level dialogue with ministers of development and planning from seven countries (Angola, Botswana, Lesotho, Namibia, South Africa, Zambia, and Zimbabwe) on the food-energy-water nexus and implications of the nexus on the socio-ecological resilience of the Okavango and Limpopo River Basins. By October 2016, SAREP concluded its role in the process, developed and disseminated a report/call for action from the high-level dialogue, and handed over its technical role in facilitating these dialogues to RESILIM and the Southern Africa Resilience Alliance, a collection of thought leaders from across the region who had already been providing technical support to the planning of the high-level dialogue.
<p>Activity 35. Regional wildlife trade</p>	<ul style="list-style-type: none"> The focus of this high-level dialogue was integrated with that of Activity 34, and this activity was therefore discontinued. Although this activity was discontinued, SAREP continued to work in support of the fight against illicit trade in wildlife. SAREP initiated a collaboration with World Wildlife Fund-Namibia and NNF to develop an action plan for the Namibia Ministry of Environment that prioritizes activities to be implemented by private sector partners and donors in Namibia in the collective fight against the illegal wildlife trade. NNF and World Wildlife Fund -Namibia will continue to collaborate with the Ministry of Environment and other stakeholders to support implementation of the plan. In Botswana, SAREP has engaged the services of Rob McNeil, a tactical and strategic counter-insurgency specialist, to support and provide technical advice to the Botswana Rhino Conservation Trust. In August 2016, he developed a report that provides recommendations to the Rhino Conservation Trust, the Botswana Defense Force, and the Botswana Department of Wildlife and National Parks on how to improve coordination and collaboration, field monitoring of rhinos, and centralized operations. In September 2016, SAREP handed over the services of Rob McNeil to the Botswana Rhino Conservation Trust, which has committed to employing him on a more permanent basis.
<p>Activity 36. Sustainable natural resource use and CBNRM in Southern Africa</p>	<ul style="list-style-type: none"> SAREP collaborated with the IUCN to support a meeting for IUCN members from southern Africa to prepare for the World Conservation Congress. The meeting was held May 4-5, 2016. A white paper was produced from the meeting that defines the conservation priorities for southern Africa and outlines the steps required to galvanize

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	<p>action by the IUCN executive at the World Conservation Congress to help tackle these concerns. The issues surrounding many of these concerns include sustainable management and use of natural resources and the role of CBNRM in conserving southern Africa's natural resources.</p> <ul style="list-style-type: none"> • In September 2016, SAREP's Chief of Party Steve Johnson and Deputy Chief of Party Chris Brooks attended the World Conservation Congress.
KRA 4.5: Strengthening organization governance	
<p>Activity 37. Support conservancy governance in Zambezi Region, Namibia</p>	<ul style="list-style-type: none"> • Subcontractor IRDNC worked with 10 community conservancies in the Zambezi Region of Namibia to support their governance processes and to improve members' awareness of the environmental issues and responsibilities of their conservancy management. • IRDNC submitted to SAREP 10 conservancy booklets outlining their environmental and management status and audit reports of four private sector joint venture partners with community conservancies and has revised two conservancy constitutions. • In June 2016, IRDNC completed review of a further two conservancy constitutions, developed a business and investment plan for the Mashi Conservancy, completed a report on engagement with youth from the 10 conservancies on conservation issues, and undertaken an education exchange trip with members of the Salamabala Conservancy to communities benefiting from the migration of the Serengeti. • IRDNC will continue to support governance of the conservancies and work with the associated communities to build their capacity to manage these areas post-2016.
KRA 4.6: Supporting CBNRM forums and networks in Botswana	
<p>Activity 38. Support national and regional CBNRM forums in Botswana</p>	<ul style="list-style-type: none"> • SAREP supported and facilitated the Ngamiland CBNRM Forum, with proceedings developed by subcontractor Kalahari Conservation Society. The outputs from the discussions at this forum formed the basis of recommendations put forward to the National CBNRM Forum. • SAREP facilitated the National CBNRM Forum in June 2016, with proceedings from the report developed and disseminated to stakeholders and to the Botswana Ministry of Wildlife, Environment, and Tourism. • In July 2016, SAREP concluded its support for this activity, with Kalahari Conservation Society continuing to provide technical support to the CBNRM Forum post-2016.
<p>Activity 39. Support formation of national network for coordinating beneficiation of plant products and access to Botswanan government poverty eradication funding</p>	<ul style="list-style-type: none"> • SAREP supported and facilitated a national workshop for stakeholders on the commercial and social use of Botswana's natural resources and subsequent formation of the Botswana Natural Products Association, election of a committee, and development of a constitution for the organization. • In July 2016, in collaboration with the Botswana Office of the President, SAREP supported establishment of a Botswana Veld Product Association and sponsored the first meeting of the management committee. The committee will continue to work with the Office of the President as part of its poverty alleviation program to support capacity building and training programs for natural resource harvesting communities.

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