

ToR Closure or Milestone Submission Form

Activity # and Name:

Aspect	Detail
<p>Project Background</p>	<p>The Orange-Senqu River Commission (ORASECOM) is one of the oldest and most established of the SADC RBOs, and is also one of the most active. Botswana, Lesotho, Namibia and South Africa are all Parties to the Commission. Over the first 10 years of its lifetime, ORASECOM focused on building a common understanding of the basin through large projects supported by GiZ (now in collaboration with AusAID and UKAID); FGEF; EU; and the UNDP-GEF. ORASECOM's extensive list of projects, as well as the availability of good data (in comparison to other RBOs), make it attractive to ICPs and other projects, and many agencies are using ORASECOM as an institutional home to test emerging concepts – including climate resilience and infrastructure.</p> <p>The ORASECOM Secretariat is based in South Africa, Pretoria, and is a key CRIDF stakeholder. It was also one of the first RBOs to be engaged by the Facility. CRIDF has: participated in three ORASECOM'TTT meetings and one of its Annual Ministerial meetings. CRIDF is undertaking 2 Projects identified through this interaction, QW05 Maseru Water Demand Management (WDM) and FP14 Rehoboth Effluent Re-use. CRIDF has also provided support to ORASECOMs second Joint Basin Survey (TA10). CRIDF is engaging in other projects in the basin, but not directly through the Commission, these include:</p> <ul style="list-style-type: none"> • QW10 Mayana Community Climate Vulnerability Project • FP14 Rehoboth Refuse Effluent • FP14 Limpopo Water Monitoring • FP19 CMBPs (River Protection) • QW05 Maseru WDM • TA10 ORASECOM Engagement • FP20 KAZA Water for Livelihoods <p>CRIDF maintains continuous engagement with ORASECOM on CRIDF projects within the ORASECOM member states.</p>

Aspect	Detail
Alignment with PDMP (Project Plan)	N/A
Activity Objective	The primary objective of this activity is to present CRIDF's projects at the ORASECOM TTT meeting on 28 th October in Gaborone. In addition to this this Activity will develop CRIDFs Stakeholder Influencing Strategy for ORASECOM.
Deviations from Objectives	None
Amendments	None
Recommendations	<p>To continue engagements with ORASECOM by:</p> <ul style="list-style-type: none"> • Arranging ad-hoc catch up meetings with the Executive Secretary; • Continue to attend ORASECOM TTT Meetings • Further explore the potential for formalizing engagements with ORASECOM through an MoU
Deliverables Outline with Comments	<p>Three deliverables form part of this submission:</p> <ul style="list-style-type: none"> • D01: Presentation delivered to ORASECOM TTT • D02: Final Activity Report • D03: Stakeholder Influencing Strategy for ORASECOM

Risk Reporting

One risk was identified in the TOR for this Activity, the details of which appear in the table below. One of the member states (South Africa) was not in attendance at the meeting however the impact of this was minimal as meaningful engagements with other member states was still able to take place.

Risk	Mitigation	Comments
Key stakeholders unavailable to attend the event, meaning information does not reach all necessary participants	ORASECOM has arranged the event to suit schedules of key stakeholders	CRIDF had no control over this risk. However the impact was minimal as all other Member States were in attendance.



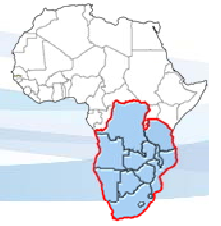
CRIDF

Support to ORASECOM TTT Meeting

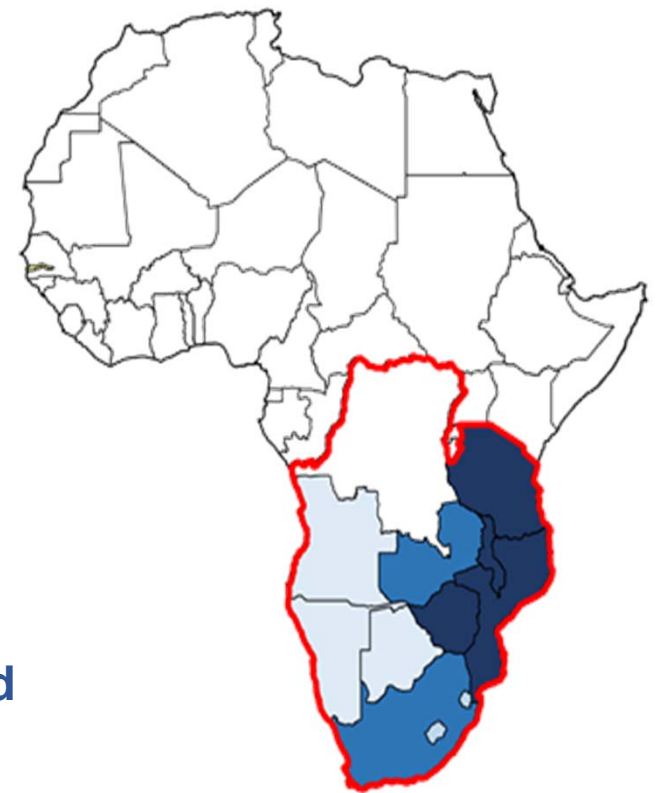
Project Progress
28th October 2015

Jonathan M Barnes

What is CRIDF?

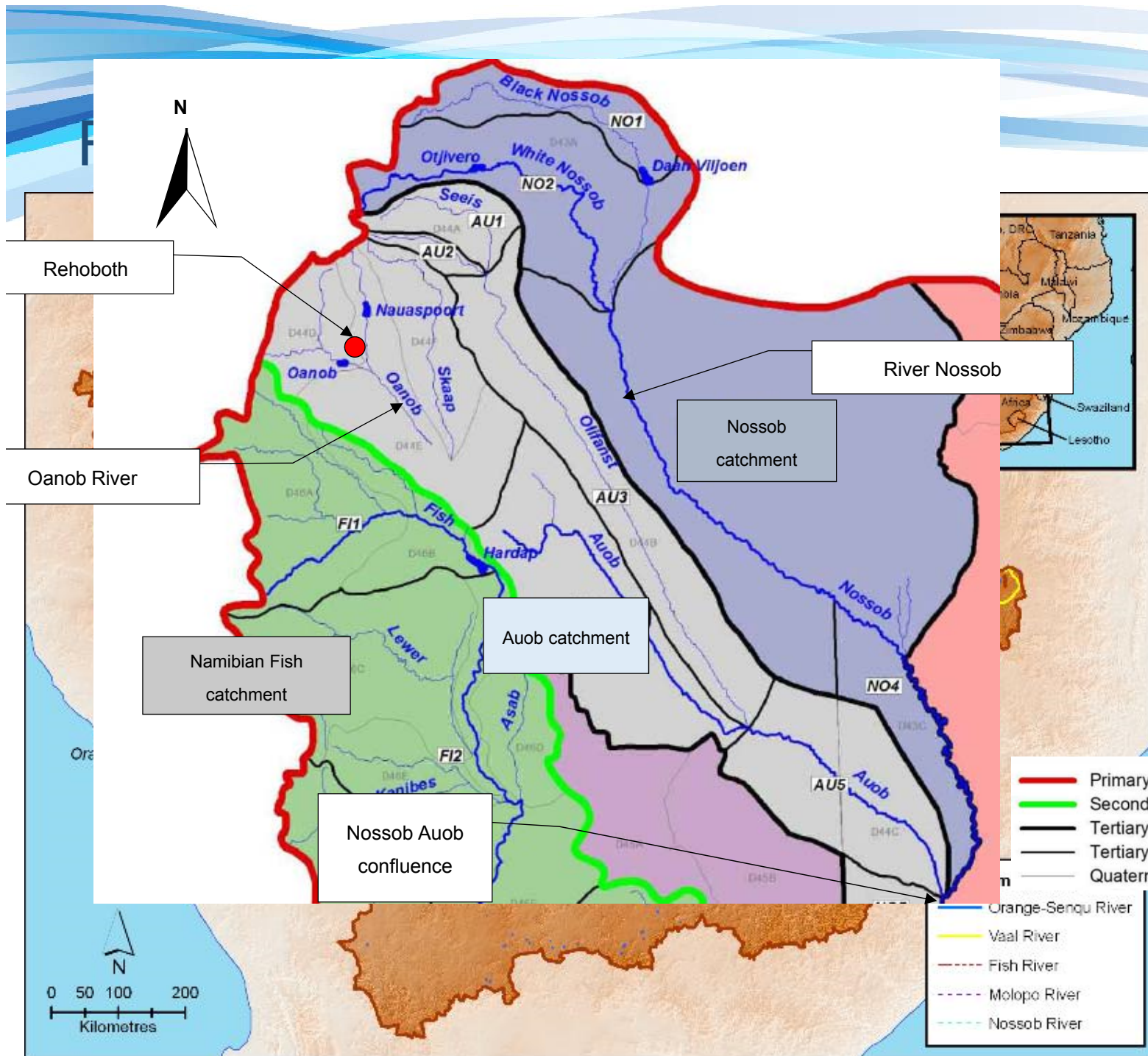
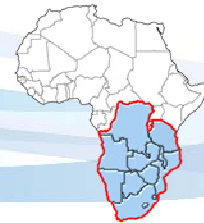


- 💧 **Climate Resilience Infrastructure Development Facility (CRIDF);**
- 💧 **DFID's new infrastructure support programme in Southern Africa, taking lead from SADC's vision**
- 💧 **Delivering water related infrastructure in SADC Countries, building climate resilience for the poorer communities;**
- 💧 **Peaceful and climate resilient management of shared water resources in SADC for the benefit of the poorer communities. : projects within the major river basins**





Rehoboth Effluent Re-Use Progress Update



of 2014

wage disposal 67% service

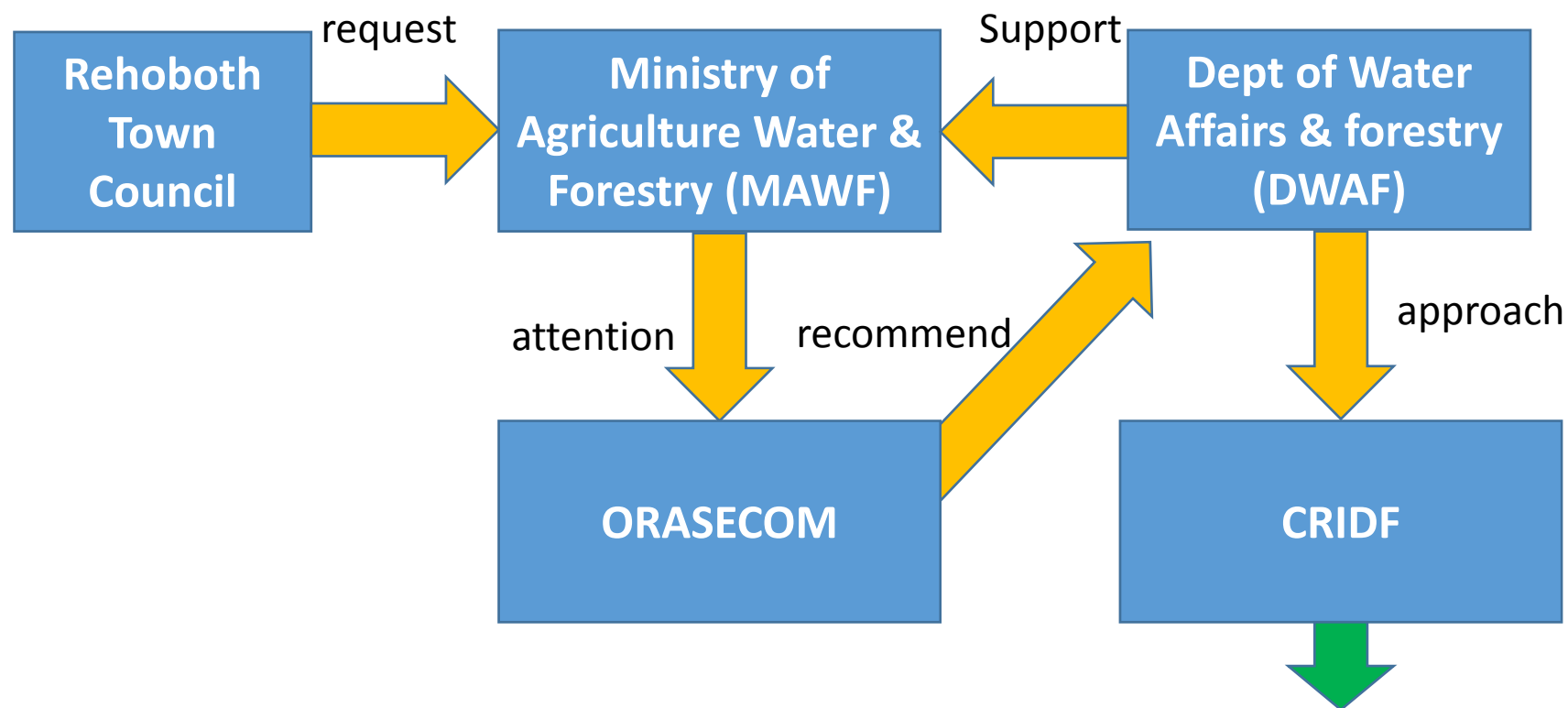
oxidation

volume now tely 50%

- Primary Catchment Boundary
- Secondary Catchment Boundaries
- Tertiary Catchment Boundaries
- Tertiary Sub-catchment Boundaries
- Quaternary Catchment Boundaries
- Orange-Senqu River
- Vaal River
- - - Fish River
- - - Molopo River
- - - Nossob River



Technical and Financial Assistance



- CRIDF produced a draft feasibility report in 2014 internally
- CRIDF view this needed to be revised in more depth due to the complexity and setup enabling environment with stakeholders



Grit trap removal



Aquatic Plants



Waste water overflow

Current Progress 2015



- Demand projections to 2030
- wwtw options
- Irrigation options
- Environmental assessment
- Financial and economic analysis
- Community irrigation approach

**Feasibility
Report
Revision**

**CRIDF & Govt of
Namibia
Enabling
Environment**

**NGTF CAPEX > than oxidation ponds CAPEX
NGTF OPEX >> oxidation ponds OPEX
Namibian WQ guidelines stringent
if vegetable crops grown for low income
communities Economically viable for OPEX of
oxidation ponds, CAPEX costs not viable
Appears NGTF O&M costs not viable
Oxidation ponds do not meet WQ guidelines**

- **SADC MoU with CRIDF Sept 2015**
- **Enables formal basis for Cooperation for CRIDF and MS**
- **Understand financial landscape, for CAPEX, OPEX for Council funding of service infrastructure**

**Project Stakeholder
engagement National
and Local level**

**Agreement with
Government of
Namibia**

CRIDF

Comparison advantages and disadvantages



CRITERIA	OXIDATION PONDS		NEW GENERATION TRICKLING FILTER WWTW	
	ADVANTAGES	DISADVANTAGES	ADVANTAGES	DISADVANTAGES
CONSTRUCTION				
Footprint Area		Large Area Required	Small Footprint	
Ease of Construction	Simple cut and fill operation			Construction must be done by specialists
Construction Cost	Moderate Cost			High Cost
OPERATION AND MAINTENANCE				
Energy Consumption	No electricity required			Electricity is required, although the energy less than some wwtw
Need for de-sludging		De-sludging is required, difficult to maintain		De-sludging is required and drying beds are normally used
Operators	Skilled operators not required	Operators are required for regular maintenance		Skilled operators are required for regular maintenance
Operation Cost	Minimum costs			High operation costs
EFFLUENT QUALITY & RE-USE				
Quality		Effluent does not conform to General Standards Guidelines	Final effluent will conform to General Standards guidelines	
Re-use possibilities		Limited re-use possibilities	Effluent can be re-used for various applications	
Possibility for income generation	Low to moderate Income potentially can be generated		Potentially high Income can be generated	
Possibility for job creation		some job creation, depending on crop type	Jobs can be created from effluent re-use	

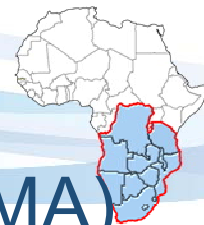
Comparison advantages and disadvantages



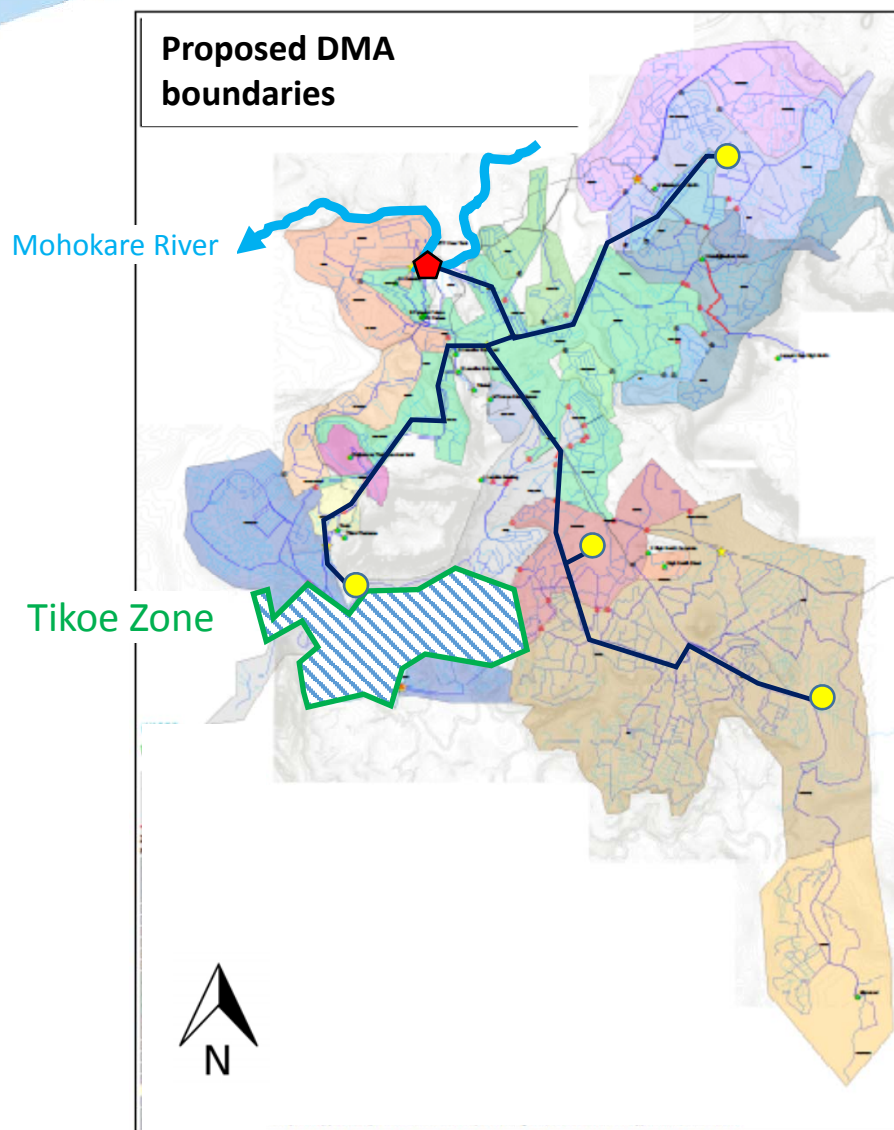
CRITERIA	OXIDATION PONDS		TRICKLING FILTER PLANT	
	ADVANTAGES	DISADVANTAGES	ADVANTAGES	DISADVANTAGES
ENVIRONMENTAL IMPACT				
Footprint Area		Large area required.	Small footprint area	
Risk of ground water contamination	Within expansion and lining of the oxidation ponds pollution reduced		Low risk, due to treatment processes	If the wwtw fails and is not repaired untreated sewage will spill into the adjacent areas with high risk of contamination
Potential to discharge effluent into the environment		Effluent may not be discharged into the environment.	Effluent can be discharged into the environment	



Maseru Water Demand Management Progress Update



1: Background & Demand Management Areas (DMA)



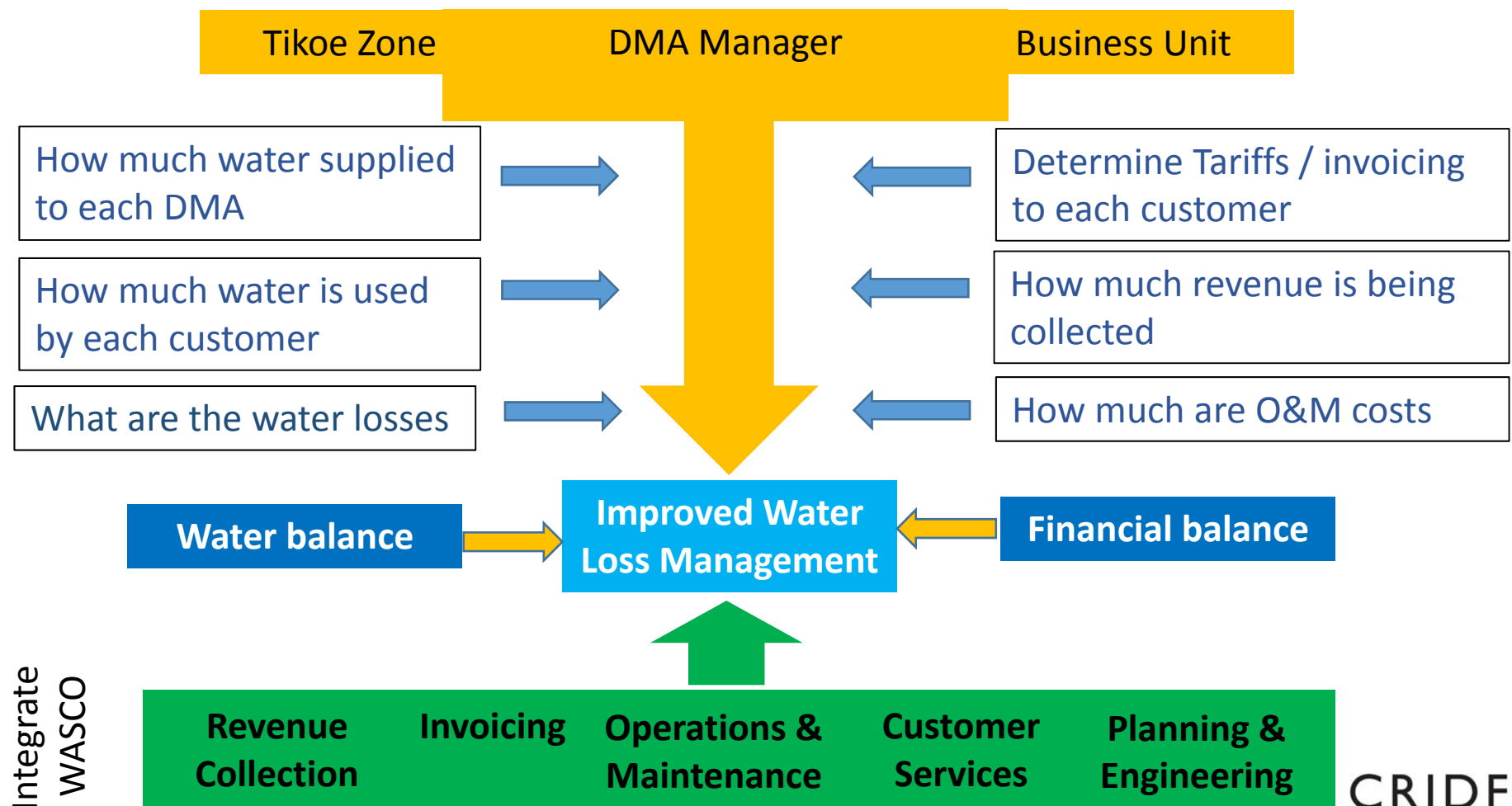
Tikoe Zone

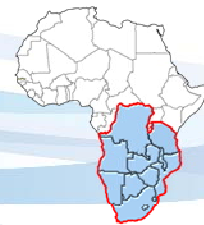
- 3500 Households (HH), population 16,500
- Mix of low to high income groups
- Access to water metered HH connections & pre-paid community standpipes
- No communal stand pipes in Tikoe zone;
- Residents installed tanks;
- Residents need to make arrangements to collect water from other areas.



2 : Business Model Approach : DMAs

💧 Financial Sustainability : Well managed water utility companies (around the world) will ring fence each DMA as a separate business that is sustainable/ profitable.

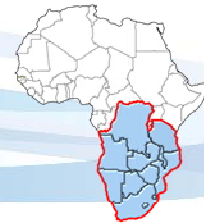




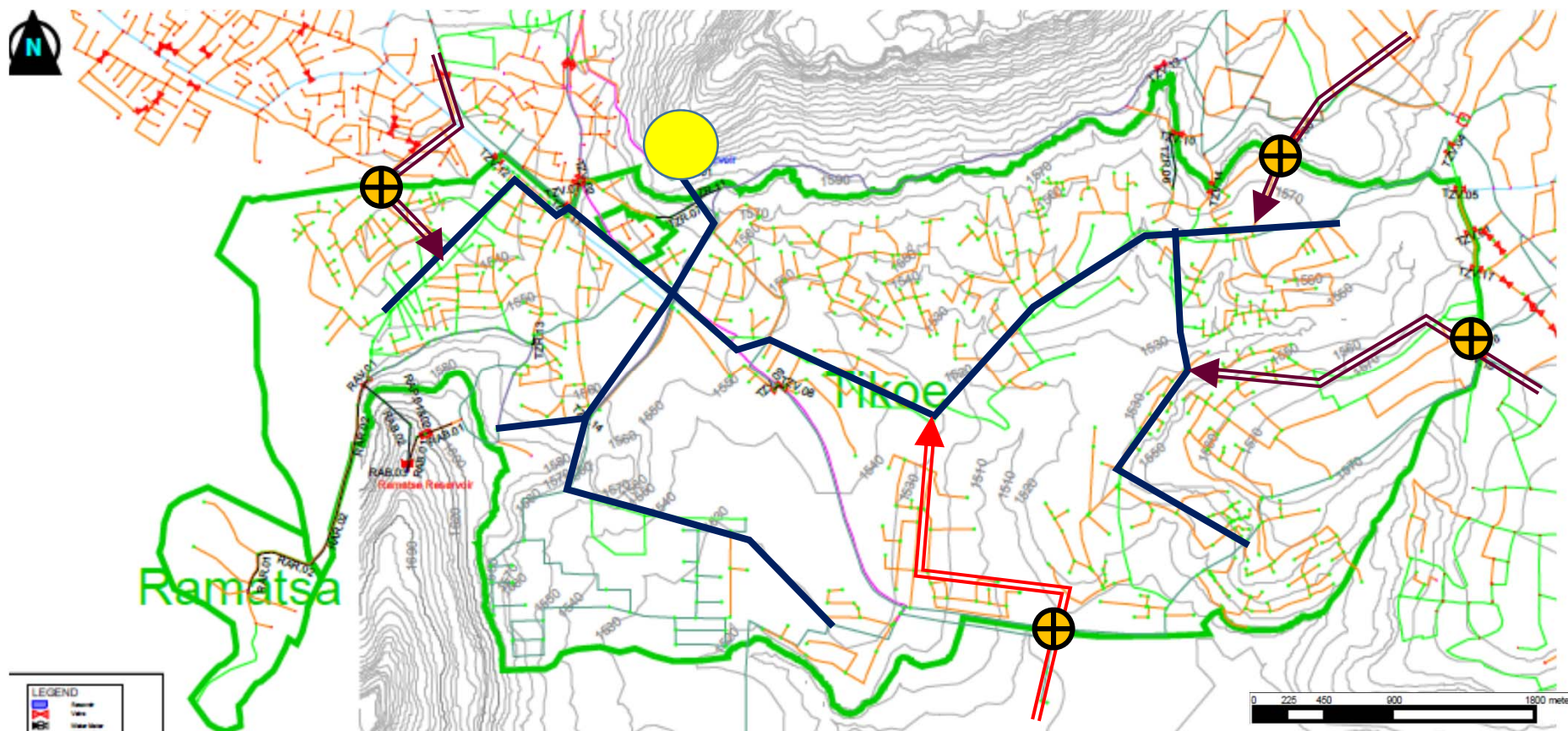
3 : DMA Approach : Pilot Project

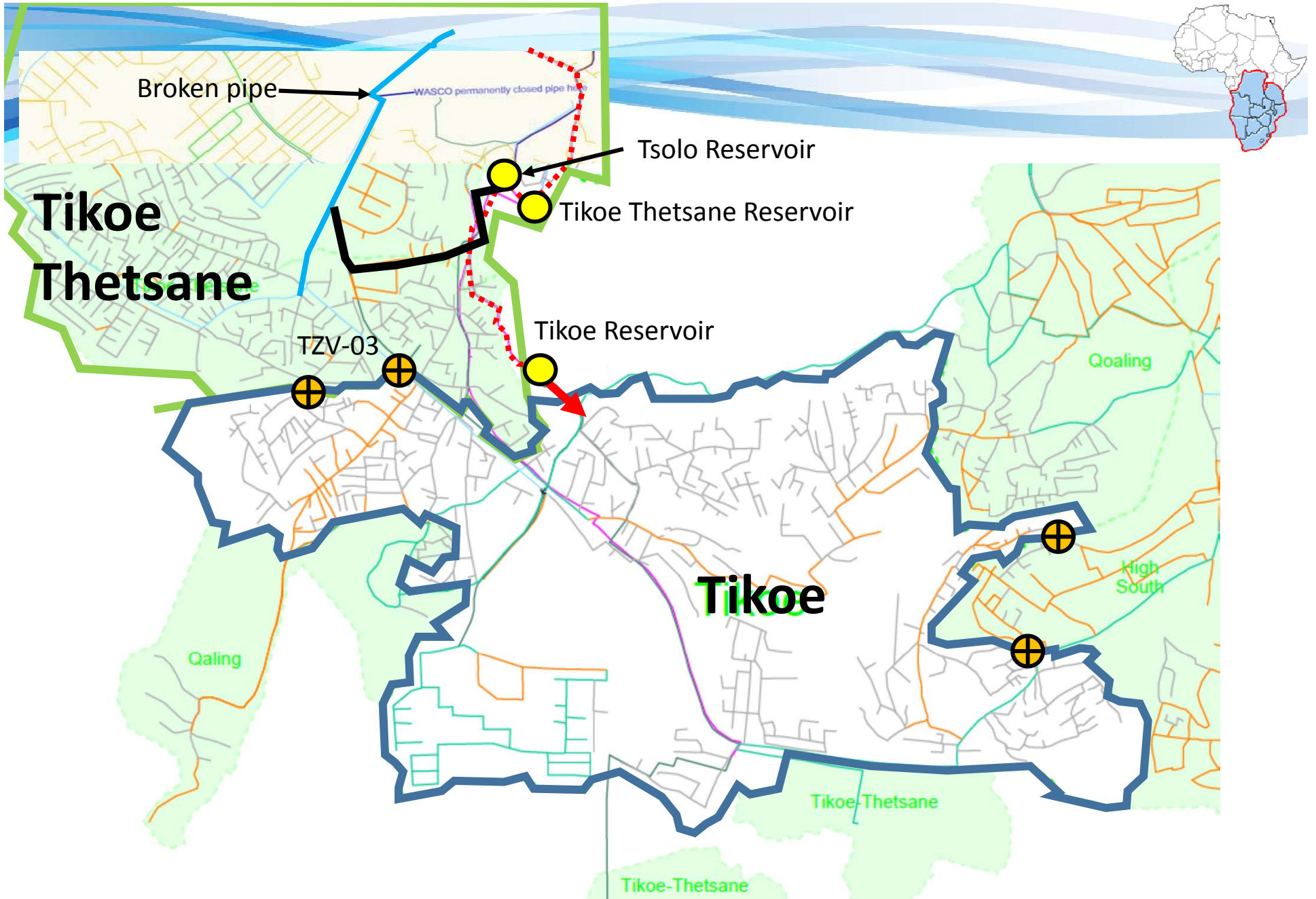
Key Steps for successful Water Loss Management

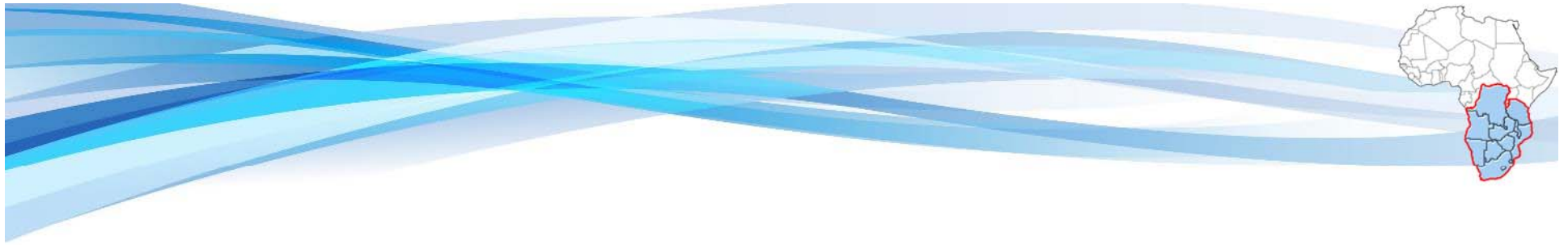
- 💧 **A** Integrate WASCO departments **Training Hydraulic Model** catalyst
- 💧 **B Hydraulic Modelling of Maseru** and detail of Tikoe Zone : i) understand how the distribution system works, ii) pressure management analysis, iii) distribution network improvements :
Built 1000 kms modelled, plan books produced
- 💧 **C Procurement with WASCO** : Isolate the DMA, install boundary valves
Procurement document drafted
- 💧 **D Pressure Flow Logging** : i) zone sectorisation, ii) hydraulic model calibration, iii) assist in isolating the zone
- 💧 **E Leakage Detection** : assist in locating burst pipes underground
- 💧 **Twinning with Tshwane Water and Sanitation** : sharing best practice
- 💧 **Institutional Change**



Creating a DMA with boundary valves : why?







Thank you

Any questions?



D02 & D03: Final Activity Report including feedback of the Presentation and Report Delivered to the ORASECOM Technical Task Team (TTT)

CRIDF Attendance at the 29th ORASECOM TTT Meeting, RS01-041

Version: Final

4 December 2015



Version #: Final

Date: 04/12 2015

Lead Author: Jonathan Barnes

QA'd by: Bruce Mead,
Chuma Nombewu

Disclaimer

The British Government's Department for International Development (DFID) financed this work as part of the United Kingdom's aid programme. However, the views and recommendations contained in this report are those of the consultant, and DFID is not responsible for, or bound by the recommendations made.



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List of Acronyms

Acronym	Long-Form
CRIDF	Climate Resilient Infrastructure Development Facility
ICP	International Cooperating Partners
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
JBS II	Joint Basin Survey
MWAF	Ministry of Water Affairs and Forestry
ORASECOM TTT	Orange-Senqu River Commission Technical Task Team
SADC	Southern African Development Community
WASCO	Water and Sewage Company
WUC	Water Utilities Corporation

Summary

The Agenda for the ORASECOM TTT meeting is shown in Appendix A.

The following were in attached at the 29th ORASECOM TTT Meeting:

- International Waters- Botswana;
- Department of Water Affairs (DWA)- Botswana;
- Ministry of Water Affairs and Forestry (MWAF)- Namibia;
- South African Development Community (SADC), Water Division (Alfred Masedi); and
- GIZ ;Deutsche Gesellschaft für Internationale Zusammenarbeit

The Department of Water and Sanitation- South Africa were not in attendance, member States were in disappointed DWS (South Africa) was not attending.

Summary of presentations with CRIDF involvement

Joint Basin Survey II (JBS II)

JMB noted from the findings of the report what will ORASECOM do next to try and improve water quality, next steps

JMB noted that given the timeframes it's been a successful project and impressive to get it completed so quickly.

Main comments on the CRIDF presentations were as follows:

Rehoboth Feasibility Study

MWAF liked the approach CRIDF has used for the Rehoboth feasibility study; with the advantages and disadvantages of the options and it was then for the key stakeholders in Namibia to discuss once the national engagement process was approved.

CRIDF explained that there wasn't a quick approach for this project as government protocol and national engagement processes had to be followed correctly to ensure successful stakeholder engagement.

Maseru Water Demand Management

SADC Alfred Masedi noted that it would be useful to have the water losses measured in terms of lost revenue, which JMB agreed this was being examined by the economist.

AM also commented that this was an important project approach that was a priority on the SADC Water Division Agenda and water utility companies should be realising the importance of this rather than necessarily only investing in large infrastructure. Again JMB agreed entirely and noted that within water utility companies the importance of this should be raised.

Overall presentations on projects well received.



ORASECOM Stakeholder Influencing Strategy

The JBS II project has proved successful thanks to the appointment of the JBSII coordinator by CRIDF and the great team work by all parties especially ORASECOM.

Based on the success of this the potential engagement strategy is as follows:

1. Continue attendance of the ORASECOM TTT meetings for networking, understanding the current funding and portfolio of ORASECOM projects to enable to find out whether CRIDF can assist in some of the projects with the other International Cooperating Partners (ICPs).
2. Meet with ORASECOM at their offices on an adhoc basis to meet with the Executive Secretary (Lenka Thamae), find out whether they require assistance that meets CRIDF's mandate.
3. CRIDF continues to engaging with member states e.g. DWA (Botswana), Water Utilities Corporation (WUC), MWAFA Namibia, WASCO Lesotho, DWS in South Africa, Botswana International Waters Department, to find out about other projects that fall under ORASECOM. CRIDF to also continue engagement with International Cooperating Partners (ICP) CRIDF to then provide advice and current knowledge with ORASECOM to help influence their strategy within the region.

Drought related aspects

Key aspects to reduce the drought issues are prioritising water supply/ water resource master plans, water supply/ water resource infrastructure investment strategies and construction well in advance, and as Len highlighted water allocation aspects, keeping track of the issues.

Whilst in Gaborone week commencing 27th October, I met with my old work colleagues at the Water Utilities Corporation (WUC), and met with DWA discussing drought issues, investment plans. Current key Botswana water supply/ water resources projects include:

- North South Carrier 2 (NCS2) – funding only approved very recently
- Thune Dam (recently constructed) but infrastructure links not fully developed. Funds being made available to utilise Thune dam fully.
- Utilization of the Water Resources of the Chobe/Zambezi River. Feasibility study has just been completed –potentially a massive project. Whether strategically this is the best option in the long term is under debate. **NOTE:** DWA are very keen for support on financing help (possibly CRIDF could support) for the potential of the Chobe/Zambezi project, but this would likely need to be via the Permanent secretary of Ministry of Minerals, Energy and Water Resources.

These projects have only recently been prioritised due to the current crisis, rather than decision makers agreeing medium and long term investments well in advance (with funding) to meet the long term supply demand projection deficits. As we all know the lead time needed for all of these projects is not going to solve the current drought.

Appendix 1: Agenda for the 29th ORASECOM TTT Meeting

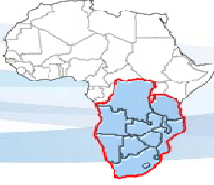


DRAFT AGENDA FOR THE 29th TECHNICAL TASK TEAM MEETING TO BE HELD ON 28 OCTOBER 2015, IN GABORONE, BOTSWANA, AT 09:00-16:30 HRS

#	Item	Time	Responsibility
1	Welcome	09:00-09:05	Host Country
2	Attendance and Apologies	09:05-09:10	All
3	Adoption of the Agenda	09:10-09:15	All
4	Approval of Minutes of Last Meeting (Boksburg, October 14)	09:15-09:30	All
5	Matters Arising from the Last Minutes (TTT & Council)		
	5.1 Matters Arising from the TTT Meeting (October 14)	09:30-09:50	Secretariat
	5.2 Matters Arising from the Council Meeting (February 15)	09:50-10:10	Secretariat
6	Update on Preparation of an IWRM Investment Plan & Infrastructure Feasibility/Prefeasibility Study	10:10-10:30	Secretariat
Tea/Coffee Break		10:30-11:00	All
6	Update on Preparation of an IWRM Investment Plan & Infrastructure Feasibility/Prefeasibility Study continues	11:00-11:20	Secretariat
7	Update on Development of the Full-size Regional Project for Implementation of the Orange-Senqu River Basin Strategic Action Programme (SAP)	11:20-11:40	Secretariat
8	Report on Water Resources Quality 2nd Joint Basin Survey (JBS2)	11:40-12:10	Secretariat
9	Report on Rehabilitation of Highlands Wetlands (Sponges)	12:10-12:40	Secretariat/GOPA
10	Report on IWRM Community Demonstration Projects	12:40-13:00	Secretariat
	10.1 Botswana		
	10.2 Lesotho		
	10.3 Namibia		
LUNCH		13:00-14:00	All
11	Climate Resilient Infrastructure Development Facility (CRIDF) Support to ORASECOM	14:00-14:30	Secretariat/CRIDF
	11.1 Rehoboth Marginal Waters Project		
	11.2 Maseru Water Conservation and Demand Management		
12	GWP-SA Project - Mainstreaming Climate Change into the Water Sector in the SADC Region - GLZ Trans-boundary Water Management Programme	14:30-15:00	Secretariat/GWP-SA
13	IUCN Implemented Projects in the Orange-Senqu River Basin	15:00-15:30	Secretariat/IUCN
TEA/COFFEE BREAK		15:30-15:45	All
14	Brief From Hydrogeology Committee	15:45-16:15	Secretariat/UNESCO
	14.1 UNESCO/SDC Groundwater Project		
15	Any Other Business	16:15-16:20	All
16	Date and Venue of Next Meeting	16:20-16:25	All
17	Closure	16:25-16:30	Chairperson
END OF MEETING		16:30	All



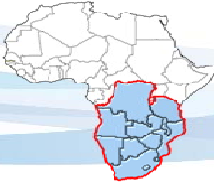
CRIDF 



Deliverable D03: ORASECOM Stakeholder Influencing Strategy

RS01-041

How does Engagement with ORASECOM link with CRIDF's core mandate?



💧 Transboundary :

- 💧 ORASECOM is a transboundary River Basin organisation with member states comprised of: Botswana, Lesotho, Mozambique and South Africa;

💧 Impacts of Climate change

- 💧 The Orange-Senqu Basin is a water stressed region and will be hard hit by climate change CRIDF engagement with the Basin through ORASECOM can help influence how the region addresses these issues

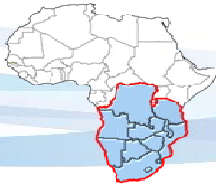
💧 Evolution of the Stakeholder Influence **ORASECOM very supportive of CRIDF and its work**

- 💧 CRIDF provided support to the Joint Basin 2 Survey of the Orange-Senqu Basin. By providing this support CRIDF greatly

💧 To Enable the above the following is required

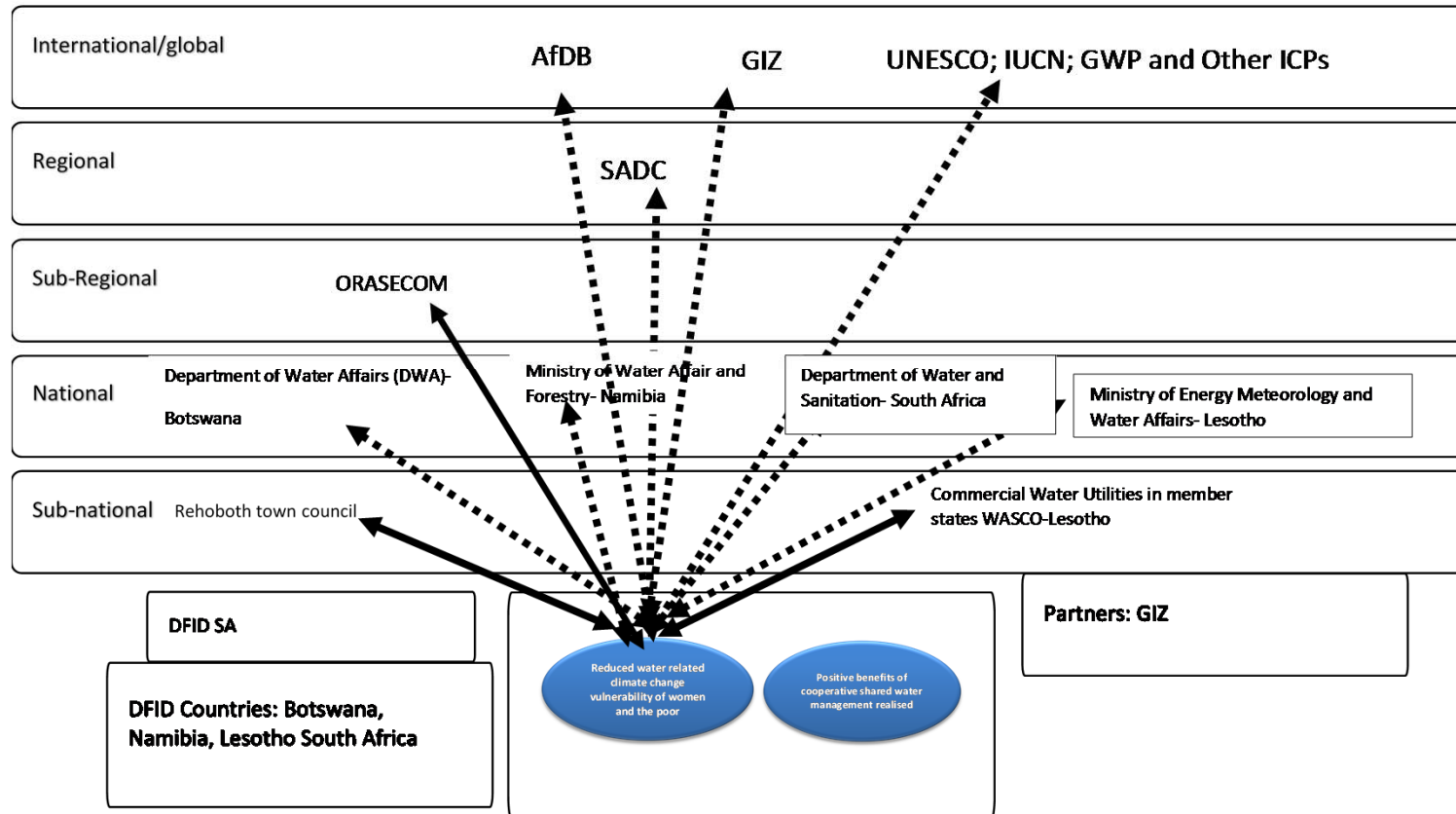
- 💧 Use LiDAR survey results within the existing hydraulic model **ARA-Sul will be custodians of the public domain LiDAR data**
- 💧 Improved accuracy of the hydraulic model to influence detailed design of FRM options
- 💧 Extension of hydraulic modelling further upstream to border with South Africa (ARA-Sul Request)

Project Stakeholder Map

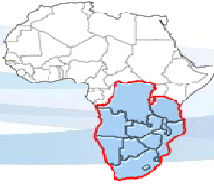


Project Name and Number: TA10- ORASECOM Engagement

One-sentence justification for intervention: To continue of engage ORASECOM and its member states on Transboundary Water Management issues in order to enhance stakeholder buy-in in CRIDF projects in ORASECOM member states and to influence the ways in which infrastructure is prioritised and managed within the Orange-Senqu Basin.

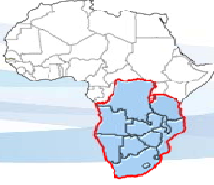


Stakeholder Strategy: why?



- ORASECOM is one of the most established and formalised River Basin Organisations within SADC.
- A number of pivotal CRIDF projects are in the Orange-Senqu Basin e.g. Lesotho WDM, xyz CRIDFs engagement at the sub-regional level with the RBO further entrenches the facilities work in the individual member states
- The Orange-Senqu basin is one of the most water stressed basins in the region and will be hard hit by climate change. CRIDF through its engagement with ORASECOM is beginning to mainstream CR and TWM considerations which have the potential to influence how ORASECOM and by extension its member states manage and deal with water resources.

How to achieve (and measure) influence?



- **MOU** investigate opportunities for formalising engagement through an MoU
- **Face to face meetings and direct engagement:** Bi-monthly engagements with ORASECOM Executive Secretary
- **Provide further support to ORASECOM and its member states:** Explore providing further support to newly defined project within CRIDF
- **Measurement and attribution:** Share key documents with stakeholders on a CRIDF SharePoint directory, carry out survey with stakeholders
- **Reports, third party engagement etc.:** CRIDF to present progress, findings at key events, invitations from decision makers e.g. ORASECOM TTT Meetings; Ministerial Meetings