



1st ICA Water Platform Meeting "Transboundary Water Resources": Financing & Climate Change Adaptation

Implementation Of The SADC Water
Infrastructure Investment Program: Process,
Opportunities And Challenges

BY Phera S. RAMOELI
Senior Program Officer - Water
SADC Secretariat, Gaborone, Botswana



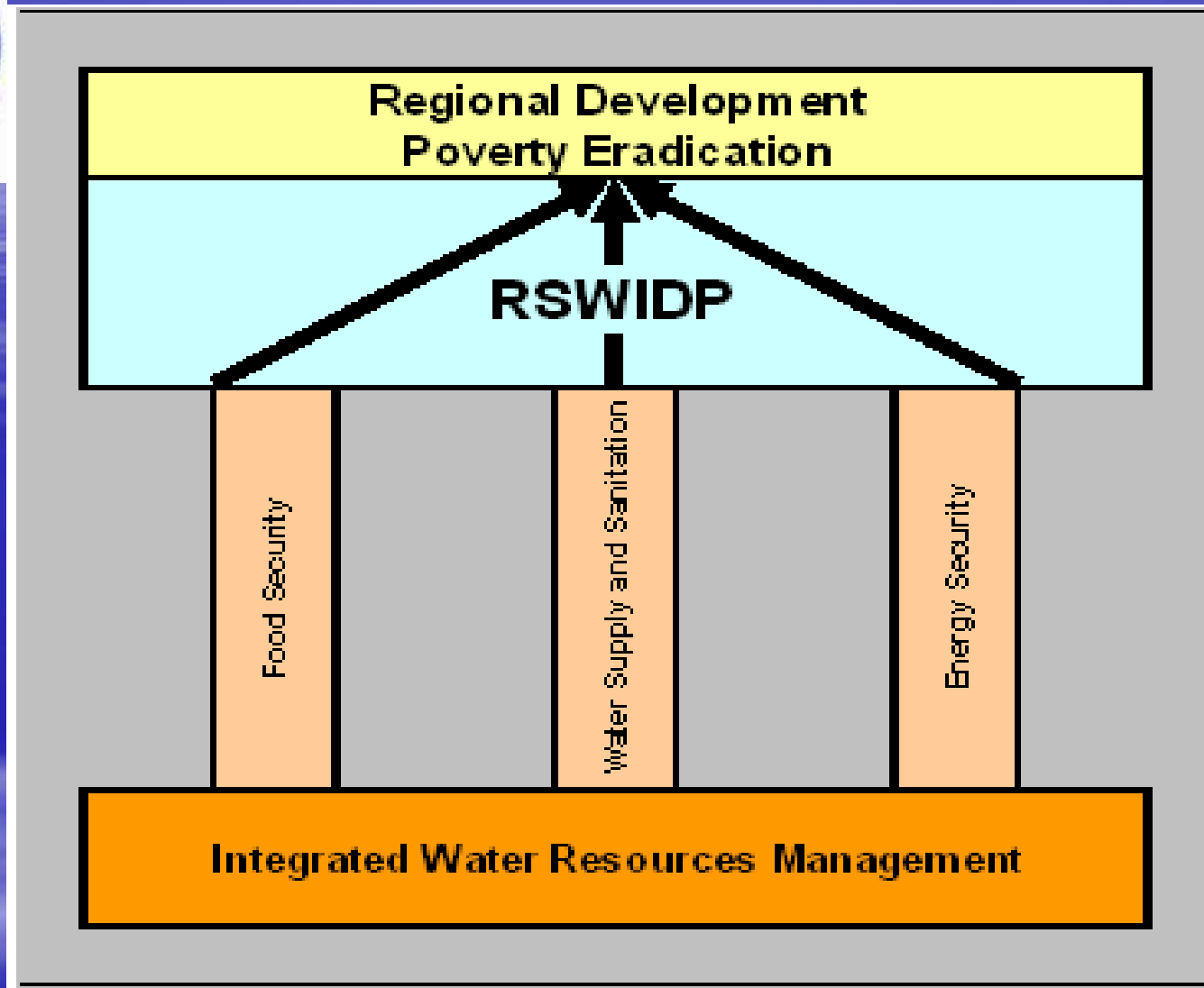
OBJECTIVES OF THE SADC WATER INFRASTRUCTURE PROGRAM

- The objective of the SADC Water Infrastructure Development Program is to facilitate the construction, operation and maintenance of water infrastructure to meet the requirements for:-
 - Irrigation
 - Water supply and sanitation
 - Hydropower generation; and
 - Flood management



This will be done in order to address the following Regional Strategic Targets:

- Halve by 2015 the proportion of people without access to safe drinking water and sanitation services (poverty reduction) and
- Develop by 2015, water resources infrastructure needed to double land under irrigation (food security).

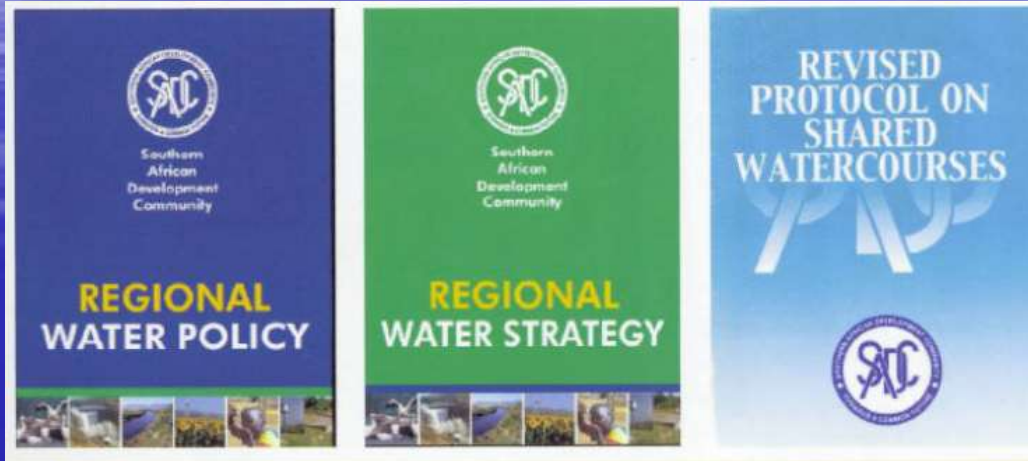


Regional Strategic Water Infrastructure Development Programme Schematic



SECTOR POLICIES AND PLANS

The SADC Water Infrastructure Development Program is governed by 4 regional instruments

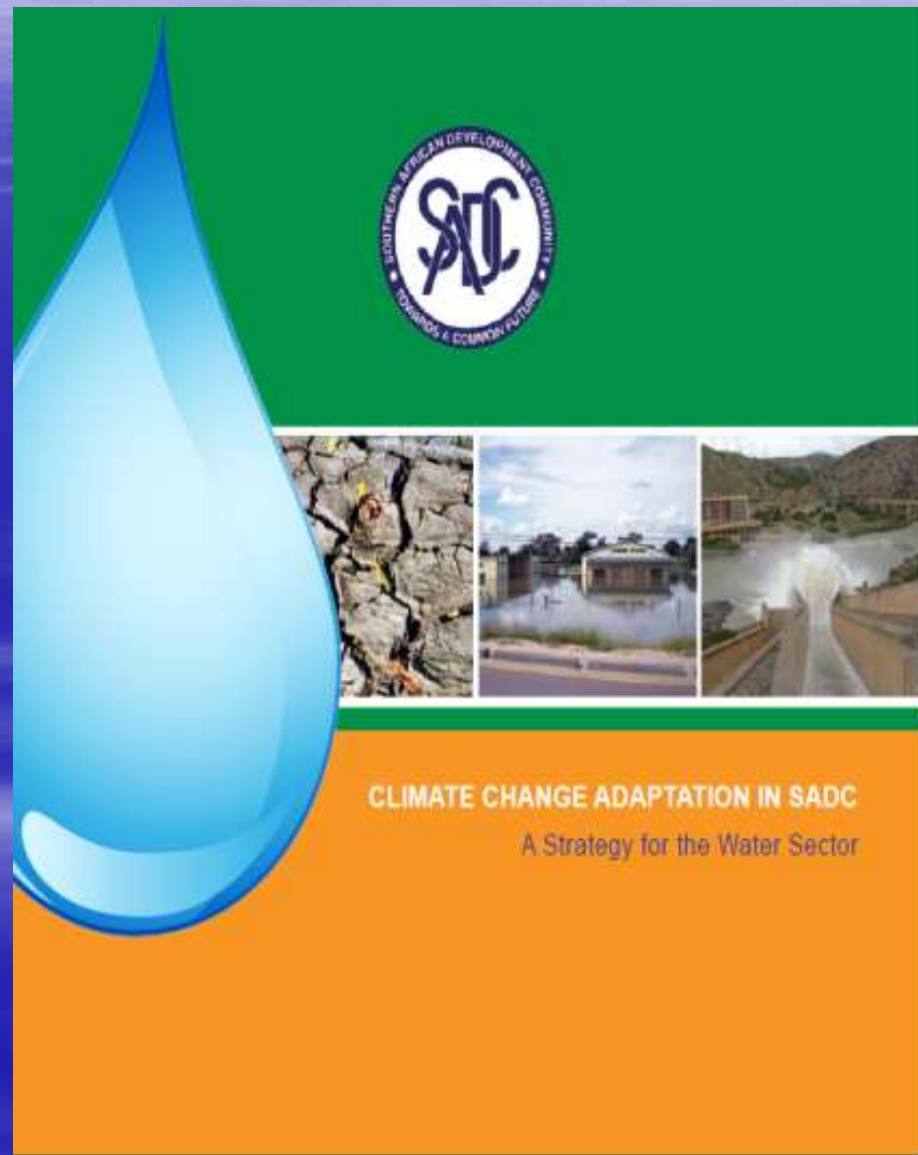


1. The Regional Water Policy (2005)
 - ❖ Is a framework for the development & management of water resources in SADC
2. The Regional Water Strategy 2006
 - ❖ Is an instrument to operationalize The Regional Water Policy
3. The Revised Protocol on Shared Watercourses
 - ❖ The Protocol calls for the establishment of shared watercourse agreements and shared watercourse institutions to facilitate coordination and joint management of shared water courses
4. Regional Climate Change Adaptation Strategy: to address climate change adaptation initiatives in the Region.



SADC Climate Change Adaptation Strategy

1. The CCA Strategy could indicate if the interventions will be taken at what **Level**:
 - Regional
 - River Basin
 - National/Local
2. And at which **Stages** of disaster occurrence the interventions will address
 - Preparation (Before)
 - Response (During)
 - Recovery (After)

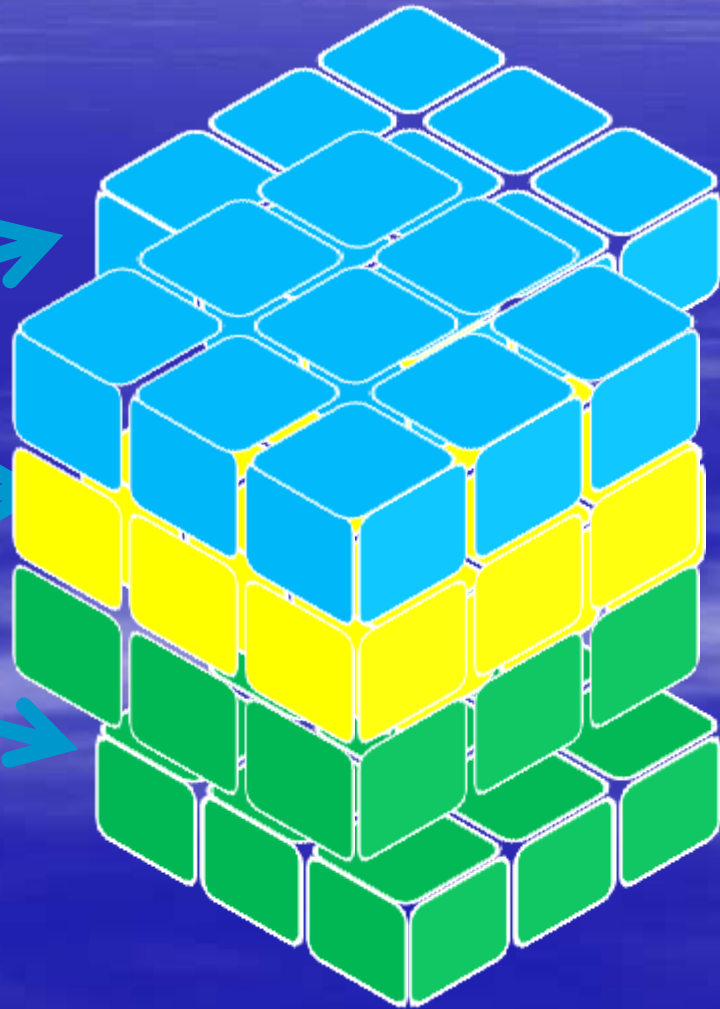




Conceptualisation CCA Cont...

The CCA interventions can be split into three (3) Strategic Areas, namely:

- AREAS**
1. Governance
 2. Development
 3. Management

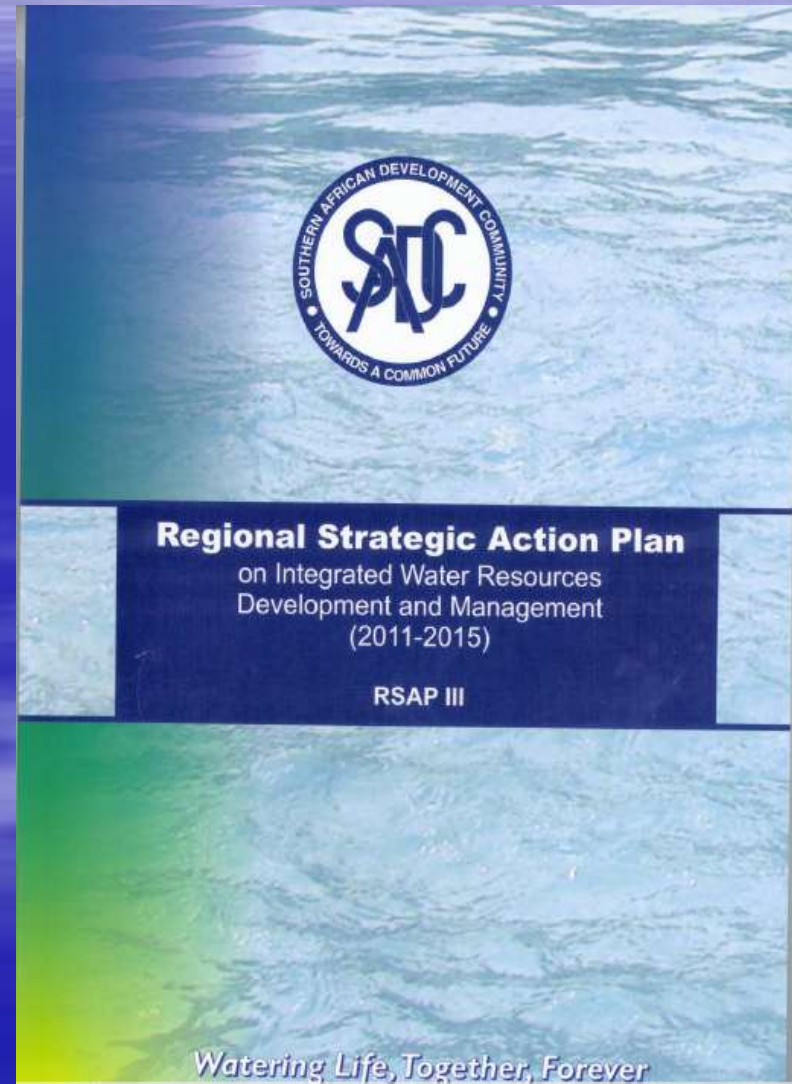




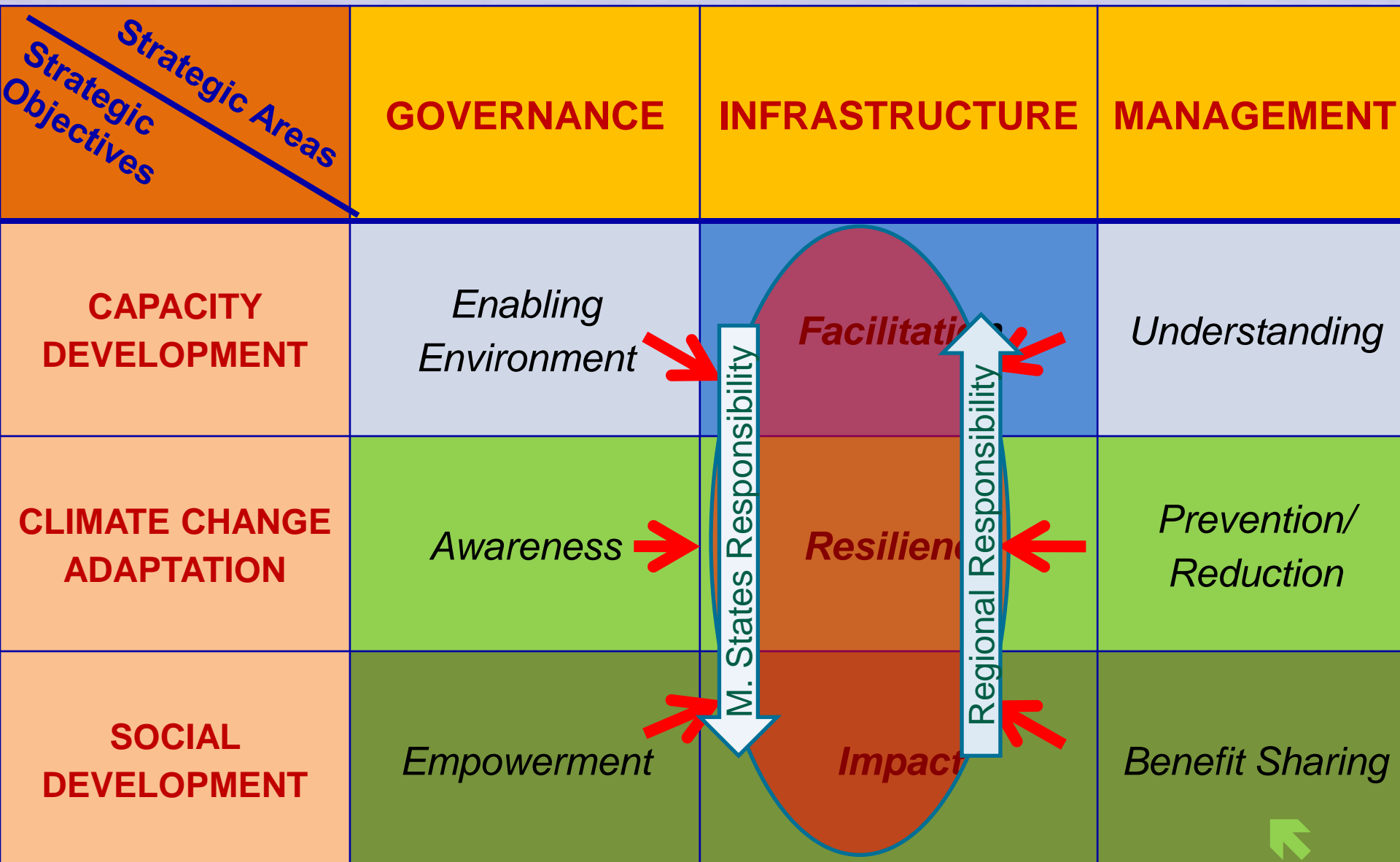
SECTOR POLICIES AND PLANS

Regional Strategic Action Plan III (2011-2015)

- ❖ The RSAP III serves as a work plan to guide the development and implementation of activities in the water sector in SADC for the five-year period (2011-2015)
- ❖ It focuses on 3 areas:-
 - i. Water Governance
 - ii. Infrastructure Development
 - iii. Water Management



RSAP III SIMPLIFIED OVERVIEW





Challenges to Transboundary Water Infrastructure



- Inadequate upstream Project Preparation
- Need for robust cooperative framework to allow for cost sharing as well as benefit sharing Arrangements
- Limited financing modality and low private sector participation in the sector;
- lack of expertise with regard to the successful development of bankable or “ready to be taken forward” projects for market presentation”
- lower than needed institutional capacity to effectively manage infrastructures’ ongoing operations and maintenance.
- Difficulties obtaining accurate and updated water information
- Lack of sector reforms to promote private sector development
- Lack of monitoring and evaluation mechanisms



OPPORTUNITIES IN SADC THE WATER SECTOR

❑ The water sector in SADC offers investment opportunities in infrastructure development for:-

- Irrigation
- Hydropower generation
- Water supply and sanitation
- Water use efficiency (e.g. metering, leak detection and reducing unaccounted for water)

Water storage capacity in SADC is still very low compared to other regions as shown in this graph

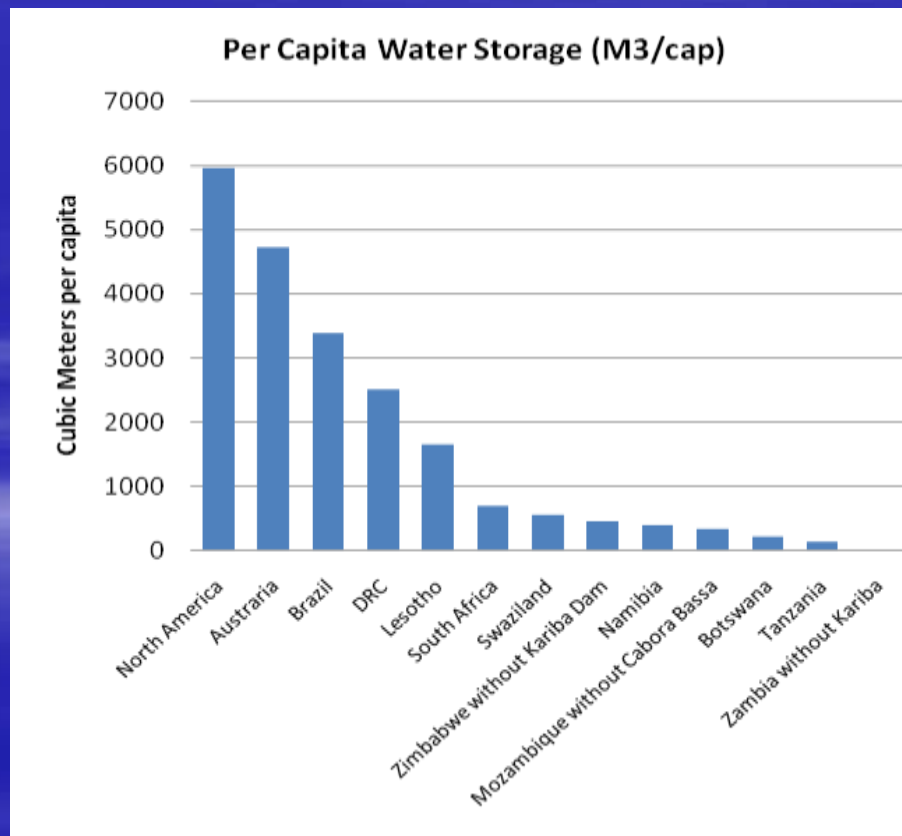


Table 1. Summary of water availability and some use information from Aquastat statistics

Member State	Population	Average Annual Renewable Water Resources (AARWR)	AARWR/ capita	Dam capacity	Dam capacity	Total Freshwater Withdrawal	Total Freshwater Withdrawal	Total Freshwater withdrawal
		km ³ /year	m ³ /year	km ³	% of AARWR	km ³	m ³ /capita	% AARWR
	Aq-08 ¹	Aquastat long term	Aq-08 ¹	Aq-08 ¹	Calculation	Aq -00	Calculation	Aq-02
Angola	18 021 000	148	8213	9.4	6.4%	0.64	42	0.4
Botswana	1 921 000	12	6372	0.5	3.7%	0.19	110	1.6
DR Congo	64 257 000	1283	19967	0.1	0.0%	0.62	12	0.05
Lesotho	2 049 000	3	1475	2.8	93.3%	0.05	26	1.7
Malawi	14 846 000	17	1164	0.04	0.2%	0.97	77	5.6
Mauritius	1 280 000	3	2149	0.1	3.4%	0.73	570	26.4
Mozambique	22 383 000	217	9699	77.5	35.7%	0.74	39	0.3
Namibia	2 130 000	18	8319	0.7	4.0%	0.30	158	1.7
Seychelles ²	84 000	-	-	0.001	-	7.87	94	-
South Africa	49 668 000	50	1007	30.5	61.1%	12.48	271	25.0
Swaziland	1 168 000	5	3861	0.6	13.0%	1.04	946	23.1
Tanzania	42 484 000	96	2266	104.2	108.2%	5.18	144	5.4
Zambia	12 620 000	105	8336	101.1	96.1%	1.74	159	1.7
Zimbabwe	7 818 000	20	2558	99.5	497.3%	4.21	514	21.0
Totals	259 840 000	2314	8906	427.4	18.5%	51.45	198	

Footnotes:	Data from Aquastat rounded where deemed appropriate.	
	Aq-08 ¹ :	Reference is the Aquastat Database from the year 2008 or as otherwise noted.
	SEY 2	Gibb [2011] cites water sales for domestic and agricultural withdrawals total of ~ 7.87 M m ³ /y



Opportunities...

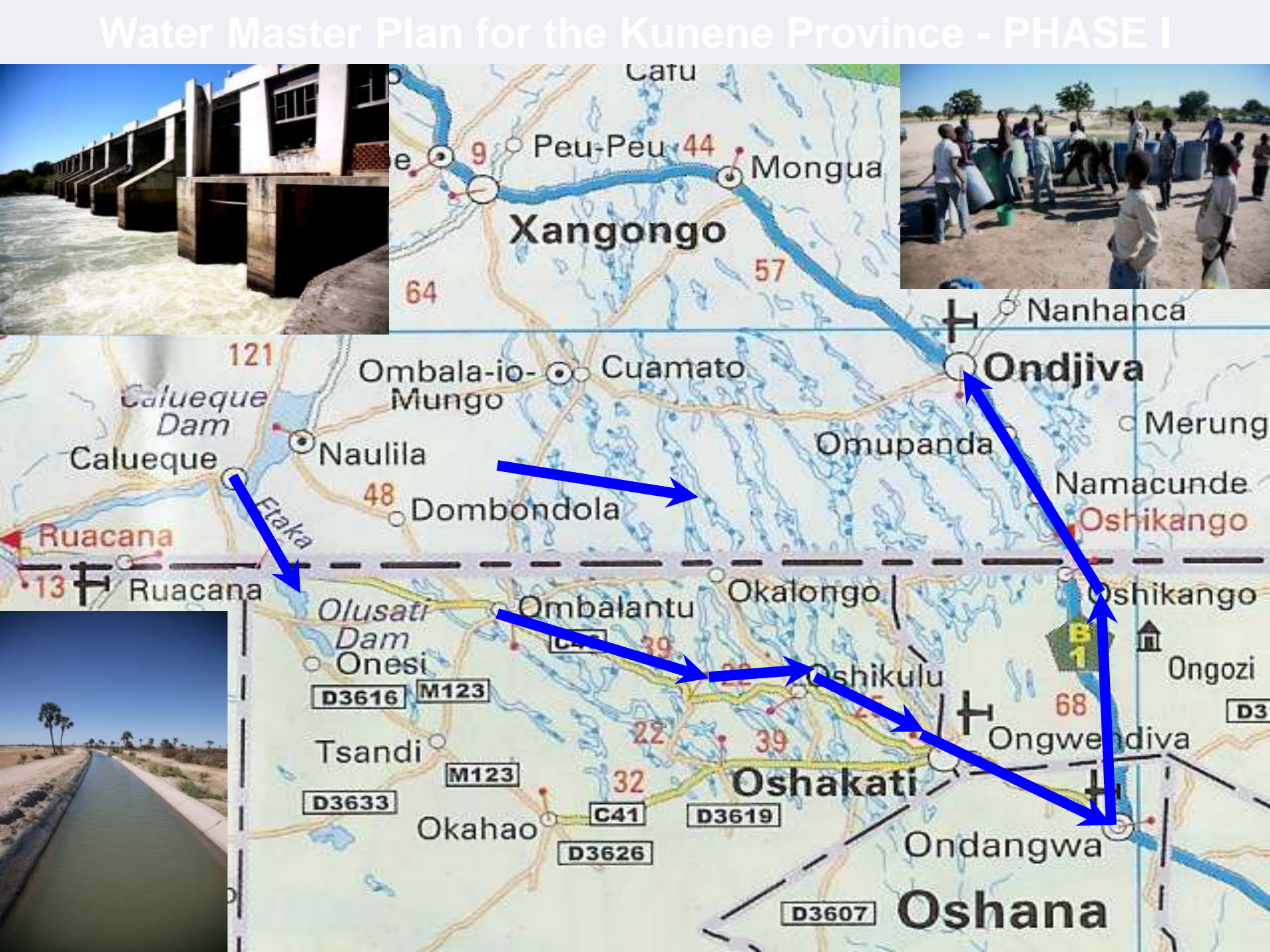
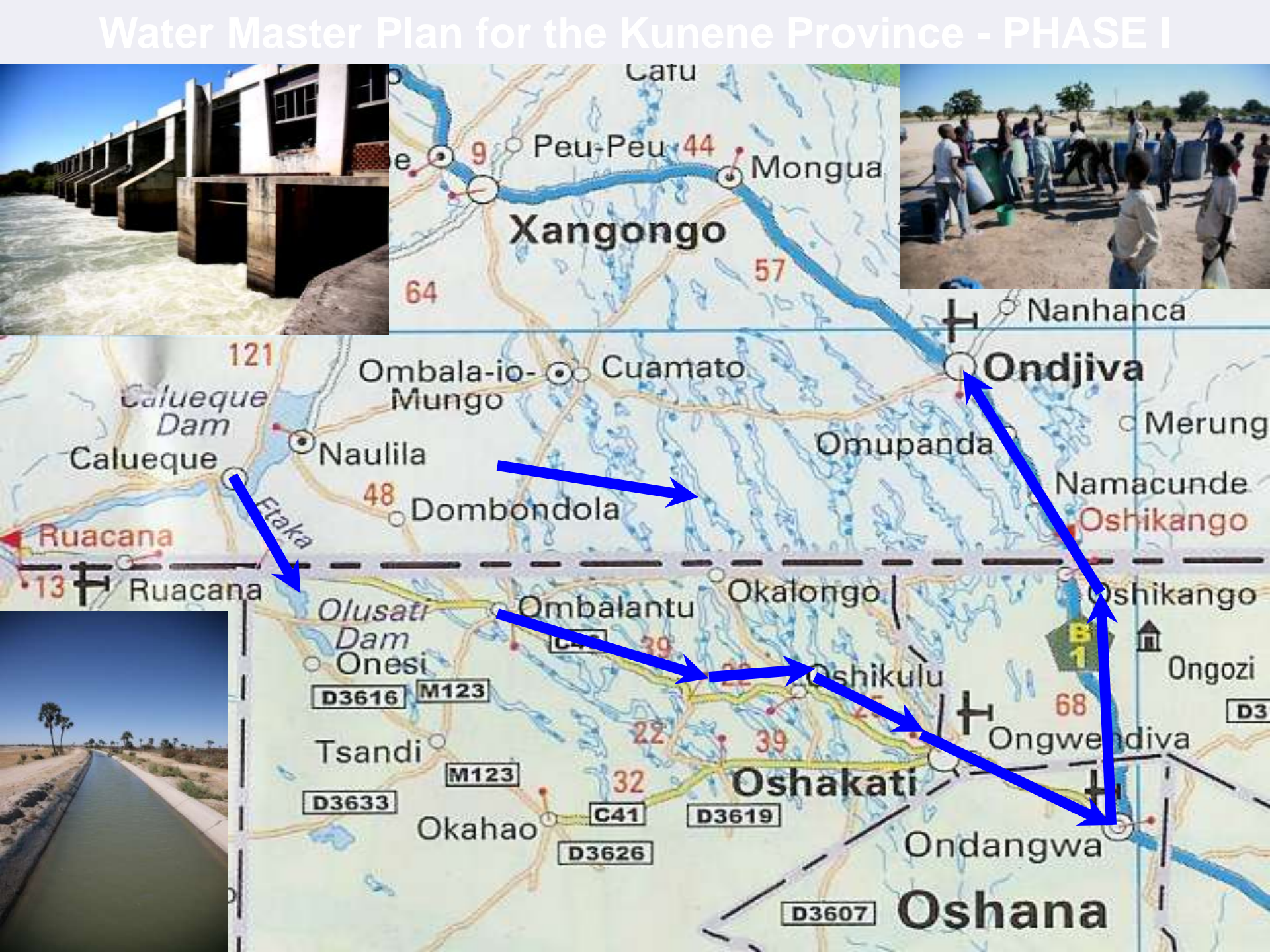
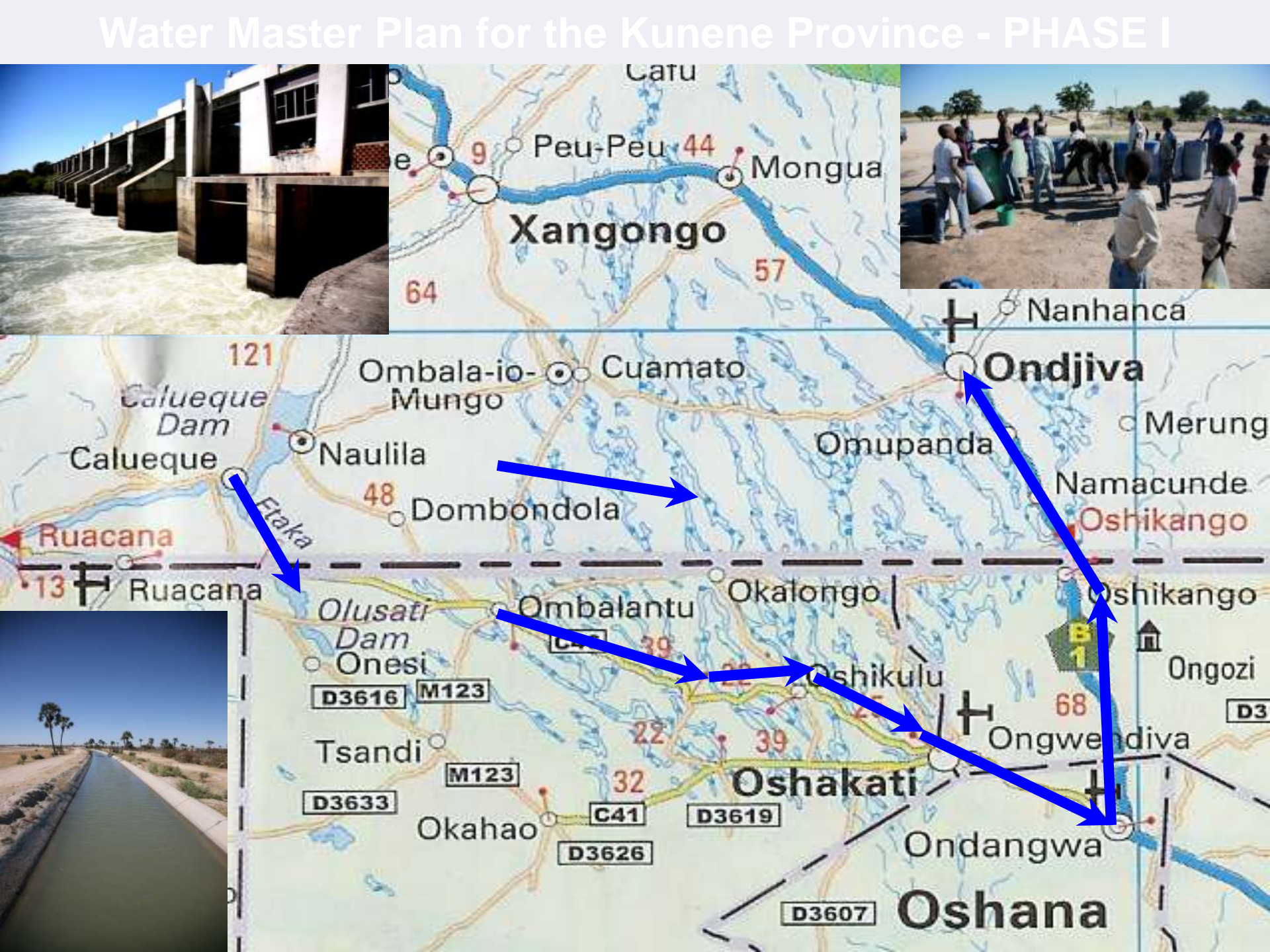
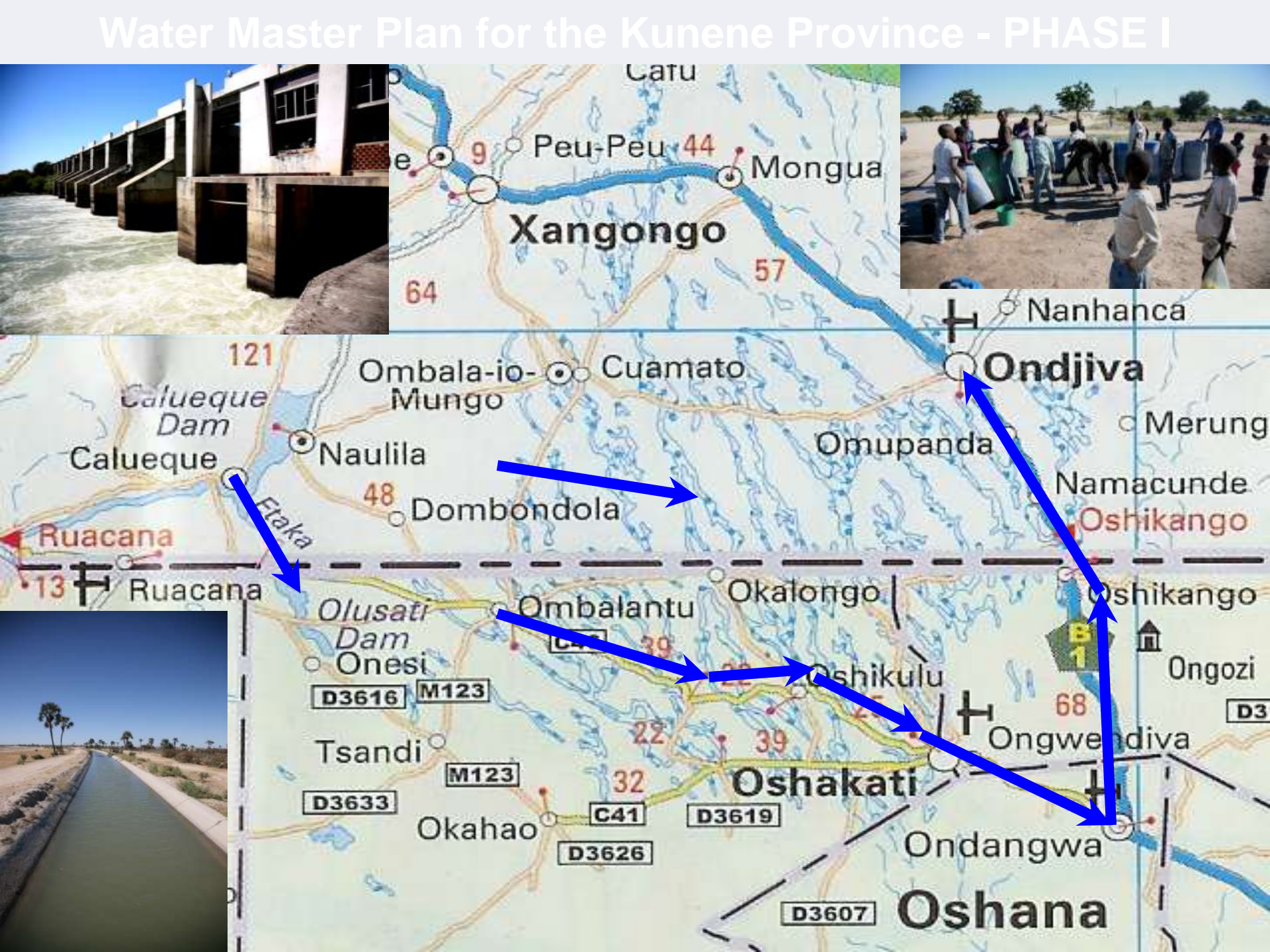
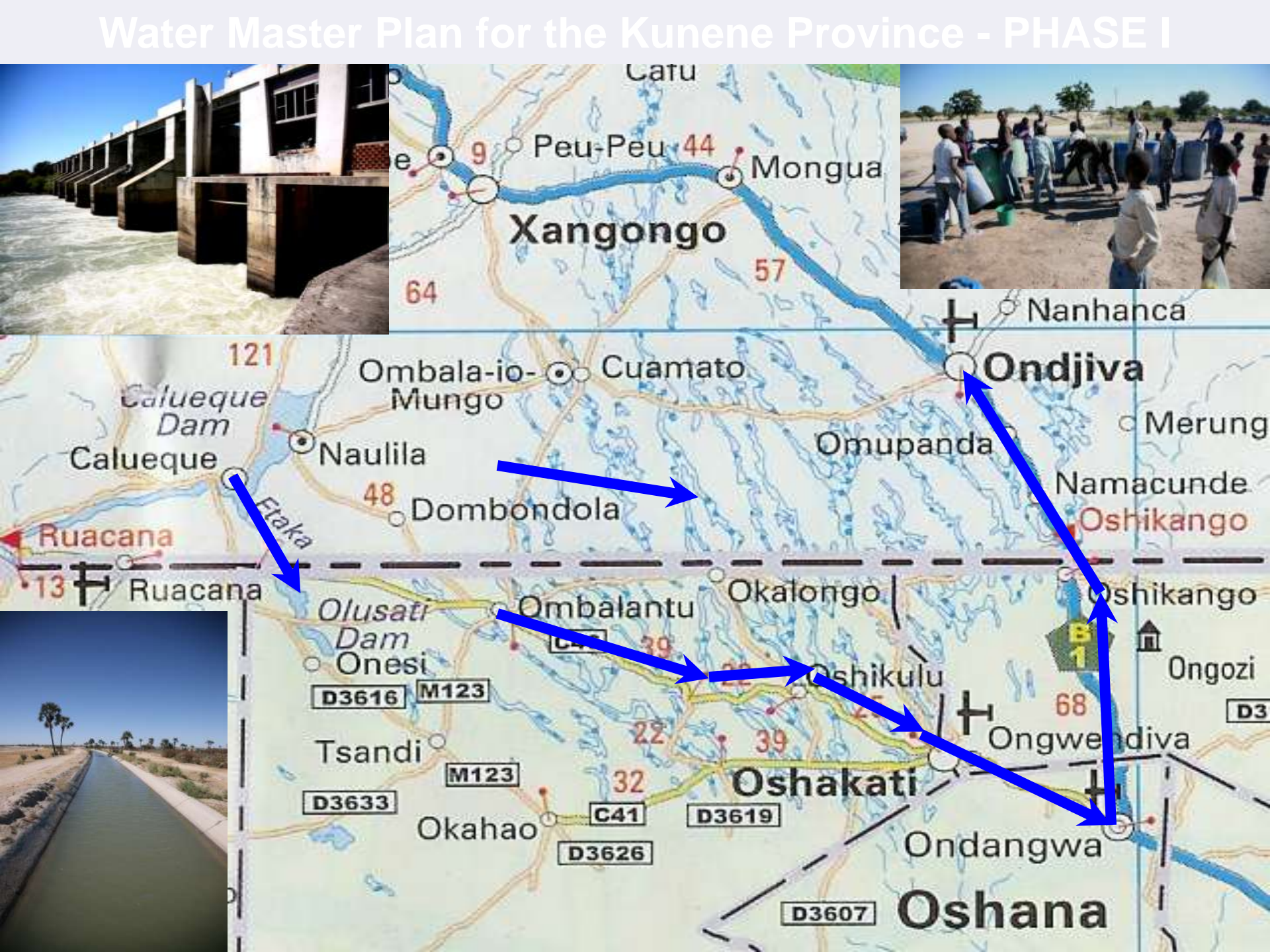


- **Establishment and Strengthening of River Basin Organisations (RBOs) e.g.:**
 - Limpopo Water Course Commission (LIMCOM),
 - Orange-Senqu River Commission (ORASECOM),
 - Permanent Okavango River Basin Water Commission (OKACOM),
 - The Zambezi Watercourse Commission (ZAMCOM)
 - the Komati Basin River Authority (KOBWA) and the Lesotho Highlands Development Authority;
- **Public-Private Partnerships Initiatives – Stewardship approaches**
- **Programme for Infrastructure development in Africa (PIDA)**
- **SADC Infrastructure Master Plan process**



The Process of Developing the RSWIDP

- The process was initiated with the support of the German Government in 2005;
- Using a regional consultant supported by national consultants various projects were identified and categorized into 3 sets;
- Pilot projects for immediate implementation in order to facilitate the learning process were also identified (e.g. The Kunene Transboundary Water Supply and Sanitation Project)
- For purposes of resource mobilization to facilitate implementation of the projects an investors conference was prepared and held in 2011;
- As part of the preparations for this conference a similar preparatory process was followed where regional consultants supported by national consultants were engaged
- 66 Projects were submitted and 23 were prioritised and categorised into 3:

[illegible]



- In 2011, the SADC Water Division assisted each Member State to identity one priority water infrastructure development project
- These projects can be categorised into four groups:-
 - i. Water Supply and Sanitation Projects
 - ii. Hydropower Generation Projects;
 - iii. Irrigation projects; and
 - iv. Water Resources Management Project
- They are clustered into three groups:
 - Regional Projects (involving two or more states)
 - Cross-border Projects (mainly WSS) and
 - No 1 Priority National Projects

Water Infrastructure Development in SADC: Priority Projects

Legend:

- SADC Member States:**
 - Angola (Green)
 - Botswana (Pink)
 - Congo, DRC (Red)
 - Lesotho (Blue)
 - Madagascar (Yellow)
 - Malawi (Light Green)
 - Mauritius (Purple)
 - Mozambique (Light Blue)
 - Namibia (Orange)
 - South Africa (Light Green)
 - Swaziland (Light Orange)
 - Tanzania (Purple)
 - Zambia (Pink)
 - Zimbabwe (Yellow)
 - Seychelles (Blue)
- Projects Categories:**
 - RG - Regional (Red dot)
 - XB - Cross-border (Green dot)
 - P1 - Priority #1 (Blue dot)
- Capital Cities:** (Red star)

Scale: 0 250 500 Kilometers

Inset Map: Shows the location of SADC in Africa.

Project Locations:

- Angola:** P1-1 (Luanda)
- Botswana:** P1-2 (Gaborone)
- Congo, DRC:** P1-3 (Kinshasa)
- Lesotho:** P1-4 (Maseru)
- Madagascar:** P1-5 (Antananarivo)
- Malawi:** P1-6 (Lilongwe)
- Mauritius:** P1-7 (Port Louis)
- Mozambique:** P1-8 (Beira)
- Namibia:** P1-9 (Windhoek)
- South Africa:** P1-10 (Durban), P1-11 (Cape Town)
- Swaziland:** P1-12 (Mbabane)
- Tanzania:** P1-13 (Dar es Salaam)
- Zambia:** P1-14 (Lusaka)
- Zimbabwe:** P1-15 (Harare)
- Seychelles:** P1-16 (Victoria)

TABLE 2 – Summary of the 23 Regional Portfolio of Priority Project's



SADC WATER SECTOR INFRASTRUCTURE DEVELOPMENT OPPORTUNITIES: SELECTED PROJECTS STATUS - 2011

[Opportunity locations are on the map on the adjacent page]

P#	PROJECT TYPE AND NAME	COUNTRIES	KEY SECTOR	STATUS NOW	NEXT STEP			TOTAL [USD M]
					ACTION	Funds [USD M]	Time	
RG	REGIONAL PROJECTS							
RG-1	Inga 3 Hydropower	DRC-shared Regional Electricity	HE	Pre-FS done	FS	15 M	24-36 mo	7 600 to 10 000
RG-2	Lesotho Highlands, Phase 2	Lesotho, South Africa	HE WS	Agreement reached between SOA and LES to commence Phase 2	To be decided after agreement	Under discussion	Under discussion	2 000
RG-3	Batoka Gorge Hydropower	Zambia, Zimbabwe	HE	EIS and FS done	Review prior documents; do Final Design and Tender	1.5% of budget	24 to 36 mo	3 500
RG-4	Songwe River Basin Development Programme	Malawi, Tanzania	HE WS AG	FS and DD being done 2013	Construct after Detailed Design [staged over 8 yr]	329 [to be revised in ongoing work]	8 yr	329
XB	CROSS BORDER PROJECTS							
XB-1	Food Security - Upper Okavango	Angola, Namibia	AGRI	Pre-FS done	Pre-FS with financial analysis	1.5	12-18 Mo	66
XB-2	Vaal-Gamagara Water Supply	Botswana, South Africa	WS	Concept Note	Pre-FS	0.4	12 mo	Not specified
XB-3	Ressano Garcia Weir - Water Supply	Mozambique, South Africa	WR WS	Preliminary DD and EIA done	Revise DD and Tender work and Technical Assistance	0.3 - 0.5	6 to 12 mo	6
XB-4	Lomahasha/Namaacha Water Supply	Swaziland, Mozambique	WS	SWA - Pre-FS done	SWA - Design Components MOZ - FS	SWA - 0.5 MOZ - 0.5	12 mo	13 plus cost for MOZ side
XB-5	12 Border Locations - Water Supply & Sanitation	Zambia, Angola, Botswana, DRC, Malawi, Mozambique, Tanzania, Zimbabwe	WS	Concept supported; some Pre-FS done.	Reconnaissance Evaluation 12 locations	0.6 [12 locations]	9 - 12 mo	30 plus costs for cross border infrastructure.
P1	MEMBER STATE PRIORITY #1 PROJECTS							
P1-1	Lubango - Phase 2: Water Supply & Sanitation	Angola	WS	Phase 1 funded and work underway	Pre-FS -reticulation and possibly other work.	0.5 plus Pre-FS reticulation cost	12 to 18 mo	126
P1-2	Limpopo Basin Joint Water Monitoring	Botswana, Mozambique, South Africa, Zimbabwe	WR	Parties agreed on doing project	Finalize design and contract	0.7	6 to 12 mo	0.7
P1-3	Kinshasa - Water Supply & Sanitation	DRC	WS	Pre-FS partially done	Update FS, financial analysis	unknown	unknown	220 [estimated]
P1-4	Lesotho Lowlands Water Supply Scheme Zone 1	Lesotho	WS	Tender to be prepared	Construction Phase	78	24 to 36 mo	78
P1-5 ¹	Pending	Madagascar						
P1-6	Mombezi Dam - Multipurpose	Malawi	WS AG	FS done; Pre-design underway	Complete Pre-Design, EIA [resettlement]	3.6 [Design] 0.75 [EIA] = 4.35	16 mo	209
P1-7	13 Housing Estates - Water Supply	Mauritius	WS	Complete through FS	Detailed Design then Tender and Construct	10	21 to 24 mo	10
P1-8	Movene Dam - Multipurpose	Mozambique	WS AG	Concept note done	Pre-FS	1	12 to 18 mo	10
P1-9	Windhoek - Managed Aquifer Recharge	Namibia	WS	Art. Recharge (AR) infrastructure & most wells in place	Consulting Services and Construction	5	18 mo	55
P1-10	Non Revenue Water and Use Efficiency	Seychelles	WS	Master Development Plan Done	Detailed Design[s]	1.5% of budget	18 mo	69
P1-11	Water Demand Management	South Africa	WR	Examples in place. Expansion of scope is needed.	Examples suggest continue with Demo Projects	Varies according to setting	24 to 36 mo	Varies according to setting
P1-12	Nondvo Dam - Multipurpose	Swaziland	HE WS	Pre FS done	FS	2	12 to 18 mo	143 [05]
P1-13	Ruhuhu Valley Irrigation	Tanzania	AGRI	Concept Note done	FS with investment analysis	0.5 to 0.6	12 mo	12.3
P1-14	Climate Change Adaptation AER 1	Zambia	AGRI	Project planned	Project Review to plan steps to get through	0.05 plus 4	24 to 48 mo	13 [2008]
P1-15	Bulawayo Water Supply from Zambezi	Zimbabwe	WS	FS and EIS completed	Review documents and update FS with new	1 to 2	12 to 18 mo	1 250



The Priority Projects



- Total investment required for the projects is estimate USD 32.001 Billion
- The projects can attract a number of financing modalities;
- Some can benefit from the newly developed SADC PPDF being administered by the DBSA;
- Some of this are currently being considered for implementation using the SADC Small fund for Water Infrastructure supported by KfW and to be administered by DBSA.
- This represents the Minimum Infrastructure to meet the current disparity in Regional Water Infrastructure.

THANK YOU

For your attention