



Workshop on “Water Cooperation Quotient” and exchange between African and Middle- Eastern experts

Water Cooperation Quotient - ORASECOM

9th August 2016,
Entebbe, Uganda

*By Rapule Pule,
Water Resources Specialist,
ORASECOM Secretariat*



Botswana



Lesotho



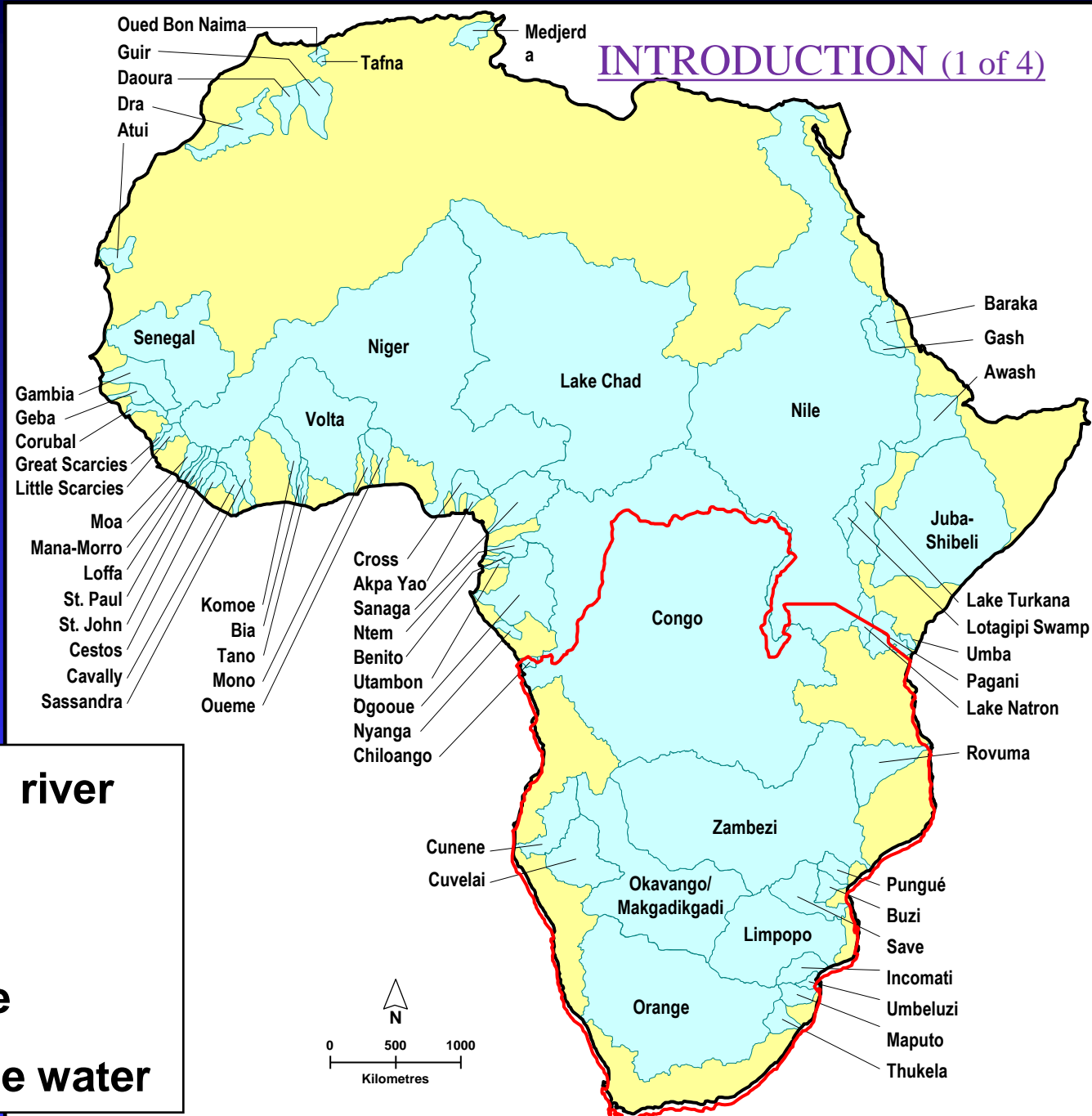
Namibia



South Africa

Shared River Basins

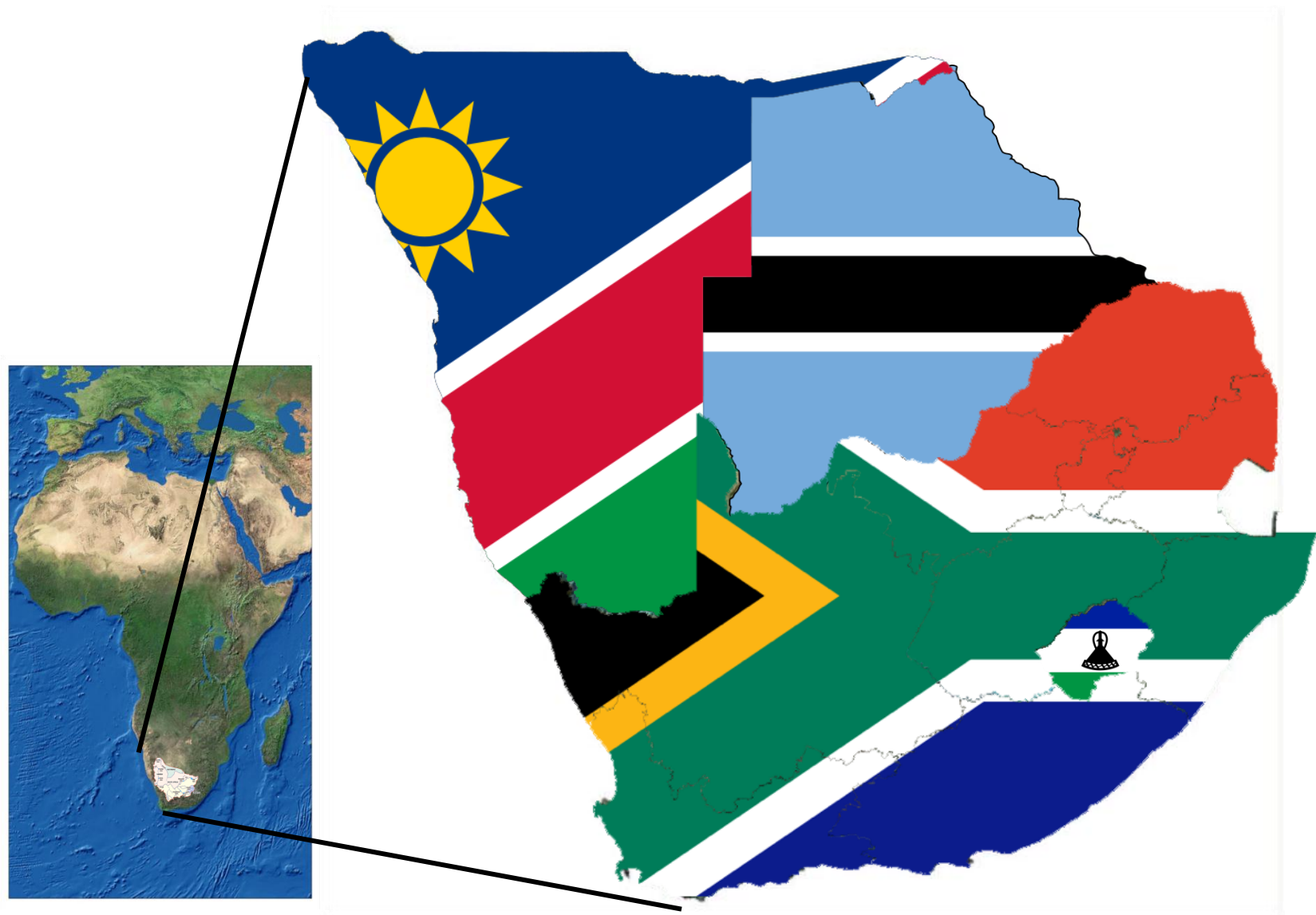
INTRODUCTION (1 of 4)



Africa's 63 shared river basins contain:

- 65 % of the area
- 75 % of the people
- 93 % of the surface water

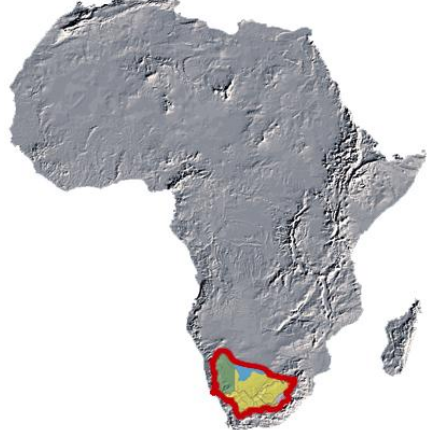
INTRODUCTION (2 OF 4)



INTRODUCTION (3 OF 4)



INTRODUCTION (3 OF 3)



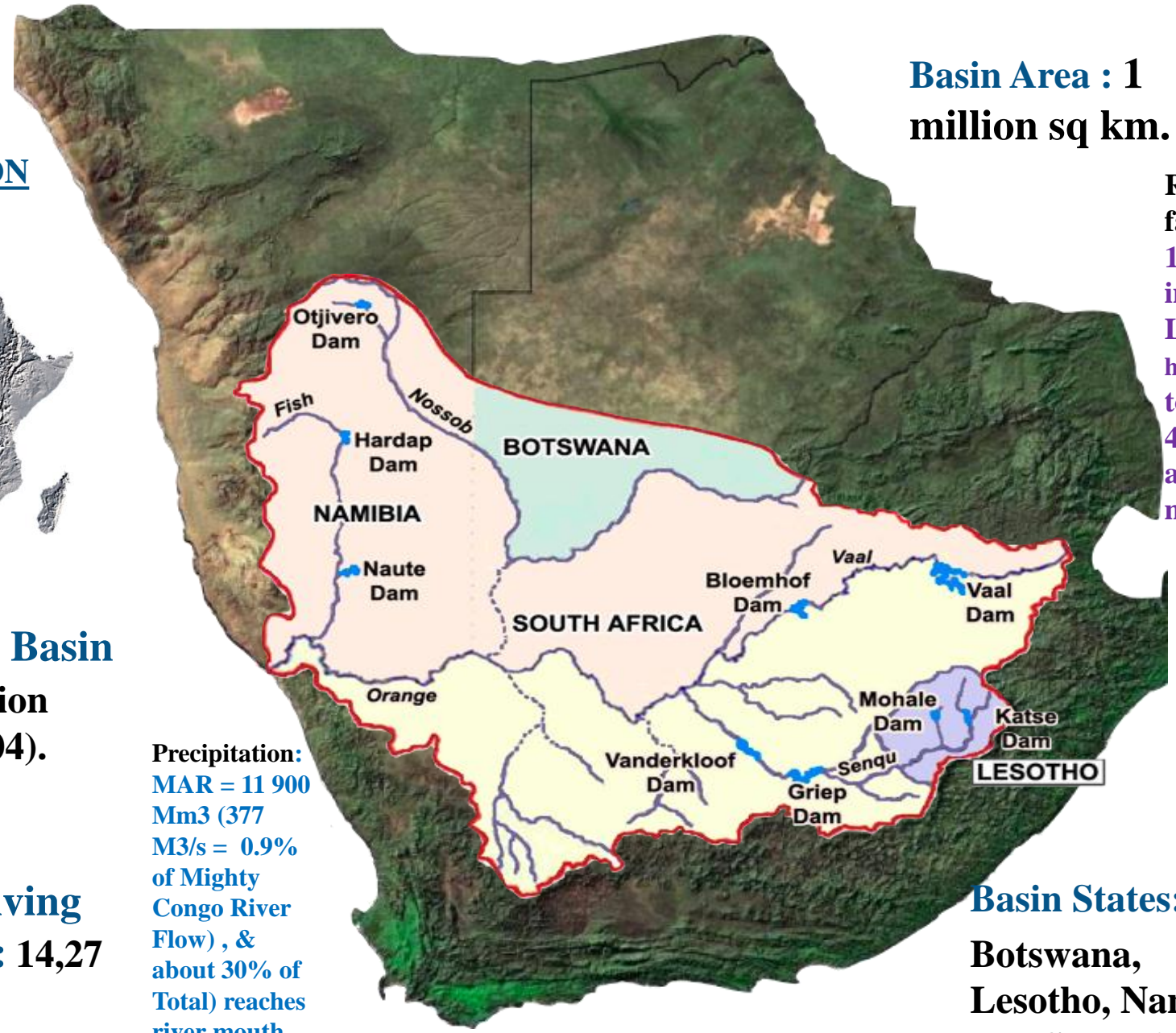
Basin Area : 1 million sq km.

Rain-fall : 1800mm in Lesotho highlands to 45mm at River mouth.

Population Depending on Basin Water: 19 million (Earle et al. 2004).

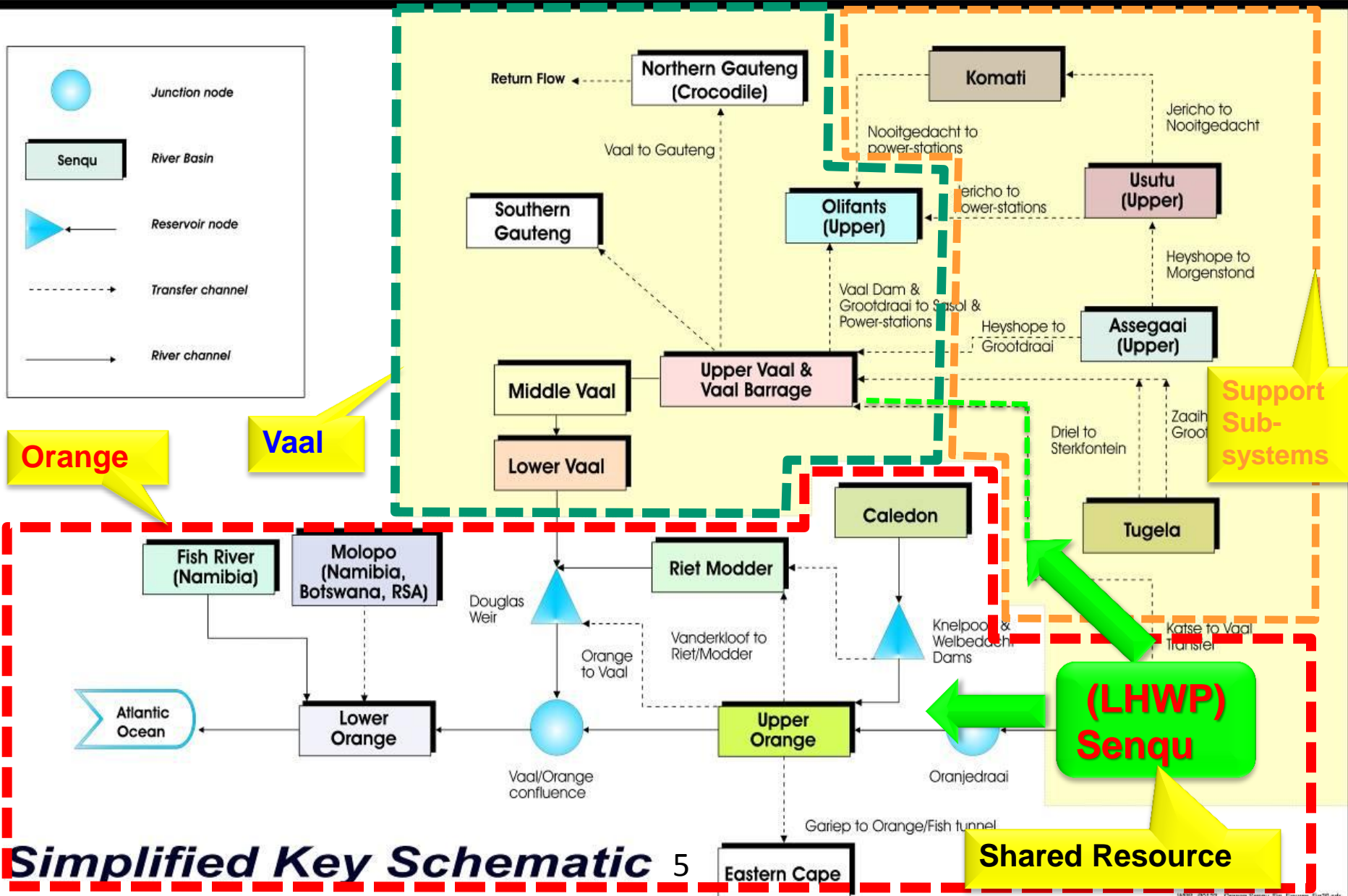
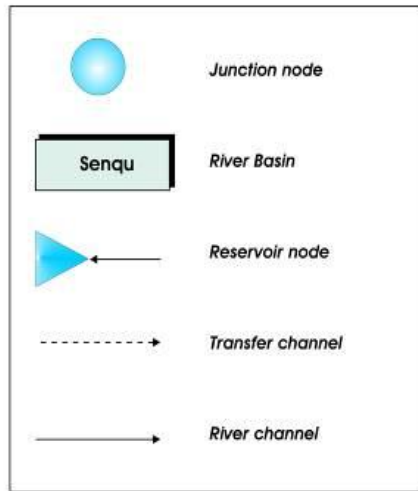
Population Living Within Basin: 14,27 million

Precipitation: MAR = 11 900 Mm3 (377 M3/s = 0.9% of Mighty Congo River Flow) , & about 30% of Total) reaches river mouth

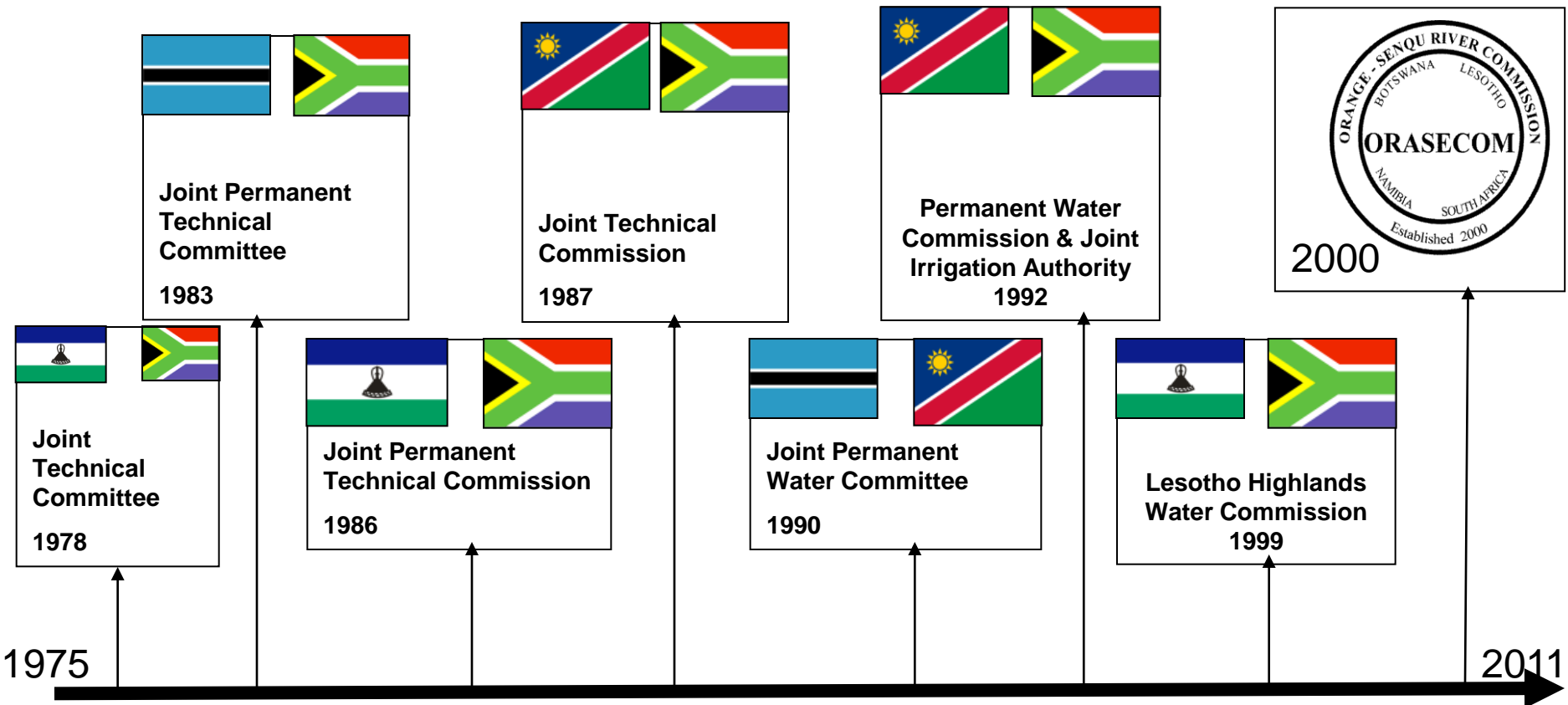


Basin States: Botswana, Lesotho, Namibia and South Africa.

INTEGRATED ORANGE VAAL SYSTEM



WCQI 1. HISTORY OF WATER COOPERATION AND AGREEMENTS IN THE BASIN

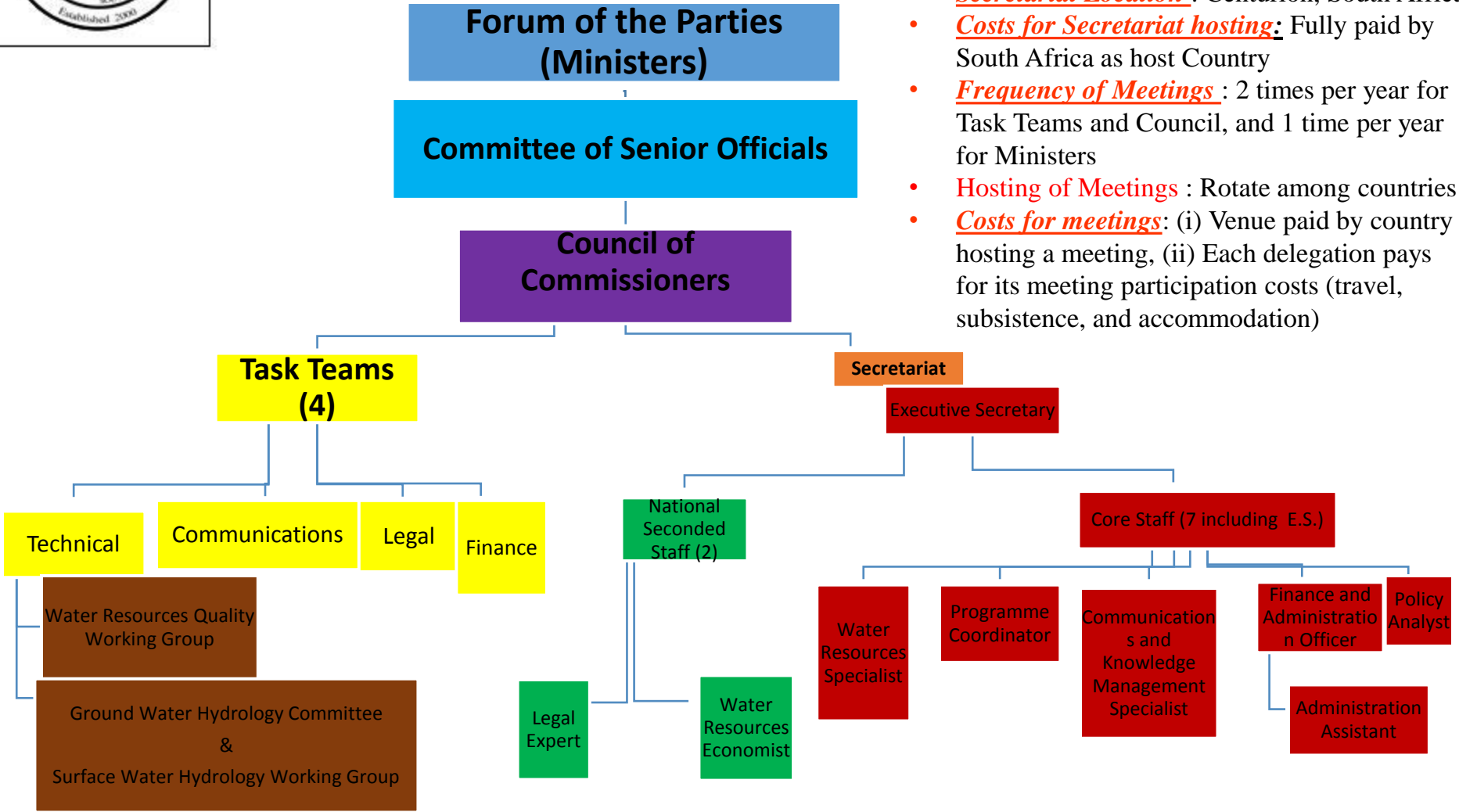


-  Botswana
-  Lesotho
-  Namibia
-  South Africa

Mandate: To advise Parties on matters related to development, utilisation and conservation of the water resources in the River system.



WCQI 2. COMMISSION



- Contributions towards Core Functions per year per country = ZAR800,000 (USD57,840) using exchange rate of 5 Aug 2016)
- Secretariat Location : Centurion, South Africa
- Costs for Secretariat hosting: Fully paid by South Africa as host Country
- Frequency of Meetings : 2 times per year for Task Teams and Council, and 1 time per year for Ministers
- Hosting of Meetings : Rotate among countries
- Costs for meetings: (i) Venue paid by country hosting a meeting, (ii) Each delegation pays for its meeting participation costs (travel, subsistence, and accommodation)





WCQI 3. MINISTERIAL MEETINGS

Progress thus Far:

- September 2005, Mohale, Lesotho
- March 2011, Cape Town, South Africa
- March 2013, Gaborone, Botswana
- August 2014, Windhoek, Namibia
- November 2015, Maseru, Lesotho



Purpose:

To review progress regarding implementation of the work programme of ORASECOM and provide policy & political guidance



Botswana



Lesotho



Namibia



South Africa



WCQ Indicators 4-7, & 9 : Programme Delivery (1 OF 16)

- In 2000/2001, ORASECOM programme of work including thirty areas clustered into six themes was developed as

follows:

- a. Institutional and organisational strengthening;
- b. Specific capacity building on shared watercourse management;
- c. Development of a shared information system;
- d. Enhancing ORASECOM communication and awareness building;
- e. Specific transboundary projects and studies; and
- f. Promoting conservation and environmental strategies and policies.



The medium term target was to consolidate a **basin wide integrated water resources management plan.**



Botswana



Lesotho



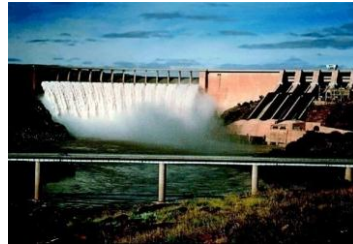
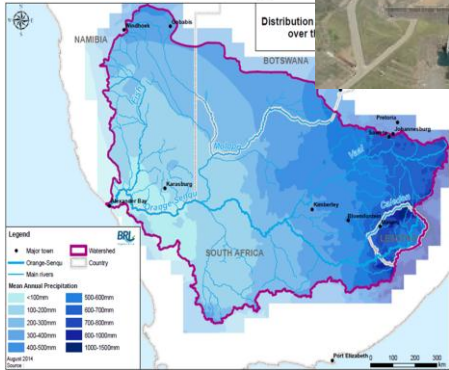
Namibia



South Africa



WCQ Indicators 4-7, & 9: Programme Delivery (2 OF 16)



- From **2004 to 2007**, Undertook Phase I of IWRM planning with support of GIZ, and focussed on collating existing information that then described the water resources of the Basin, covering the following topics:

- hydrology and water resource availability;
- economics and current use of economic tools in water resource management and allocation;
- demographics, water demand, and water resources development in the basin;
- water infrastructure in the basin;
- policy, legal and institutional frameworks related to water resources management in the basin;
- water quality and pollution;
- ground water availability and use; and
- environmental considerations.



Alluvial diamond mining operations are also found on the lower Orange-Senqu, the estuary and along shallow wet beds of the Atlantic Ocean.



Botswana



Lesotho



Namibia



South Africa

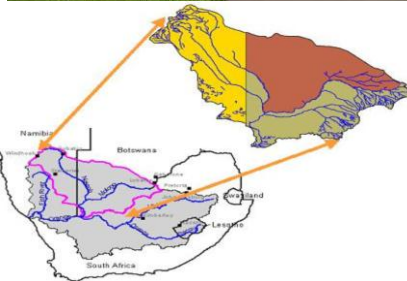
FOUR NATIONS, ONE RIVER



WCQ Indicators 4-7, & 9 : Programme Delivery (3 OF 16)

- From **2007 to 2009**, Undertook the following Studies and Initiatives with support of FGEF:-

- Protection of Water Sources “Sponges” in the Highlands of Lesotho
- Feasibility Study of the Potential for Sustainable Water Resources Development in the Molopo-Nossob Watercourse
- Design and Planning Definitive Capacity Building Programme for Technical Staff/Experts/Commissioners And Stakeholders
- Feasibility Study for Development of Mechanism to Mobilize Funds for Catchment Conservation
- Groundwater Review of the Molopo-Nossob Basin for Rural Communities including Assessment of National Databases at the Sub-basin Level for Possible Future Integration
- Feasibility Study on the Potential Development and Use of Marginal Waters



Botswana



Lesotho



Namibia

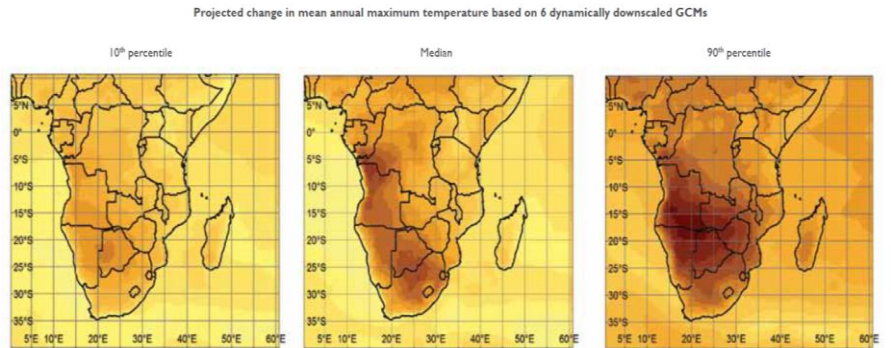


South Africa

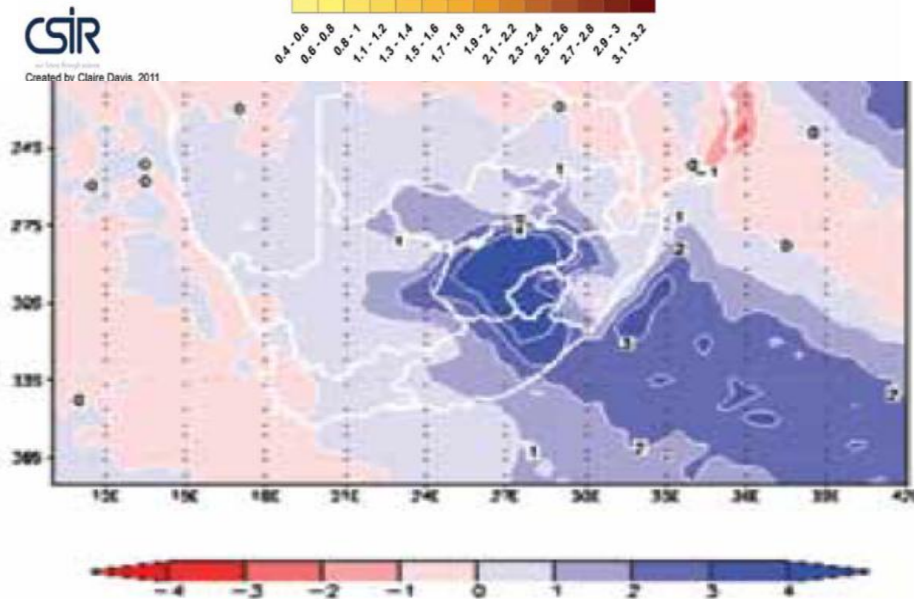


WCQ Indicators 4-7, & 9 : Programme Delivery (4 OF 16)

From **2009 to 2013**, Undertook Phase II of the ORASECOM IWRM planning programme with support of GIZ, focusing on filling knowledge gaps in the following six areas:-



- Water Resources Modelling
 - Hydrological Studies
 - Water Quality Management
 - Climate Change
 - Environmental Flow Requirements
 - Irrigation Efficiency





WCQ Indicators 4-7, & 9 : Programme Delivery (5 OF 16)

From **2009 to 2013**, Undertook work in following Six Result Areas with support of EU:

- Strengthening of ORASECOM on basin management, policy and legal issues
- Enhancing of Capacity for Shared Water Courses Management in all riparian states thru a number of training courses
- Development of a shared information system that promotes the development of a common understanding for decision-making e.g. development of a transboundary water quality monitoring programme for the Basin
- Enhancing ORASECOM communication and awareness building processes e.g. development of a Communications Strategy and teasing out on how stakeholder participation could be implemented in the Basin given differing disparities and interests
- Dialoguing towards the Orange-Senqu Integrated Water Resources Management Plan e.g. a Number of Delphi Workshops were held discussing topics like what type of Plan is desired etc
- Activities on demonstrating water conservation and environmental strategies e.g. **2 Water Resources Quality Joint Basin Surveys in 2010 and 2015**



Botswana



Lesotho



Namibia



South Africa



WCQ Indicators 4-7, & 9 : Programme Delivery (6 OF 16)



Botswana



Lesotho



Namibia



South Africa



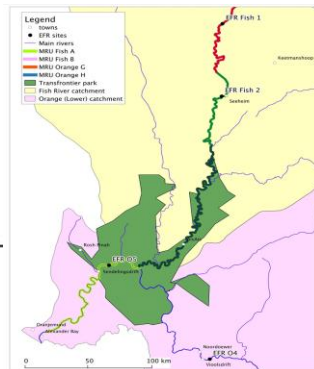
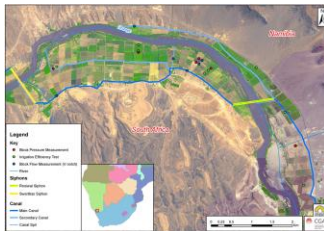
WCQ Indicators 4-7, & 9 : Programme Delivery (7 OF 16)

From **2009 to 2013**, Undertook Trans-boundary Diagnostic Analysis (TDA) of environmental sustainability impacts and causes of those, and development of a Basin Wide Strategic Action Plan (SAP) and National Action Plans (NAPs) to address identified environmental sustainability challenges and causes, with support of UNDP-GEF. The work also included the following other components:

- Institutional Strengthening of ORASECOM e.g. establishment of a Water Information System for ORASECOM
- Improving Communications and Public Participation
- Demonstration Projects i.e. environmental flows requirement assessment for the lower part of the Basin (downstream of Noordoewer/Vioolsdrift, Fish River in Namibia, and the river mouth), irrigation efficiency demonstration in some of the farms belonging to the Joint Irrigation Authority between Namibia and South Africa; and addressing land degradation and providing alternative livelihood for affected communities in Lesotho and Botswana.



DIGNITARIES TOURING THE PROJECT SITES DURING HANDING OVER CEREMONY.



Botswana



Lesotho



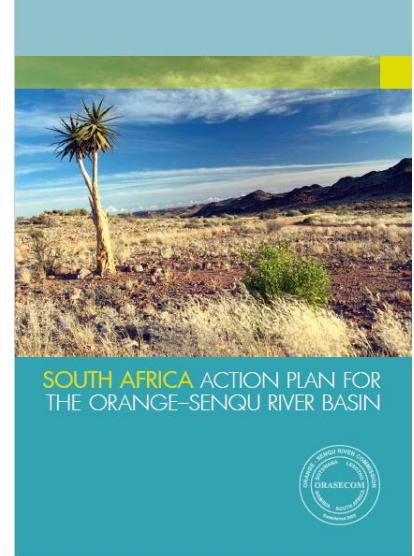
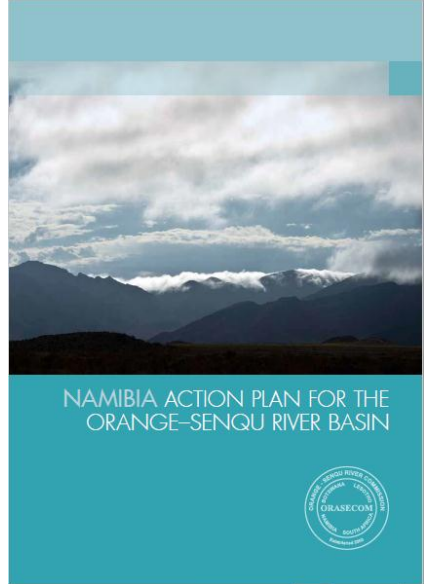
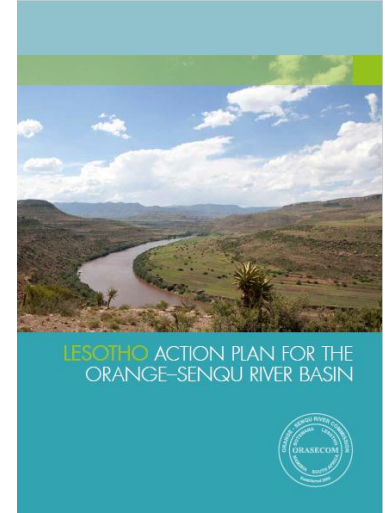
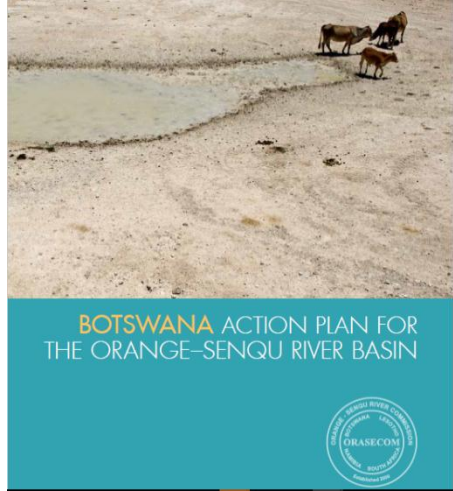
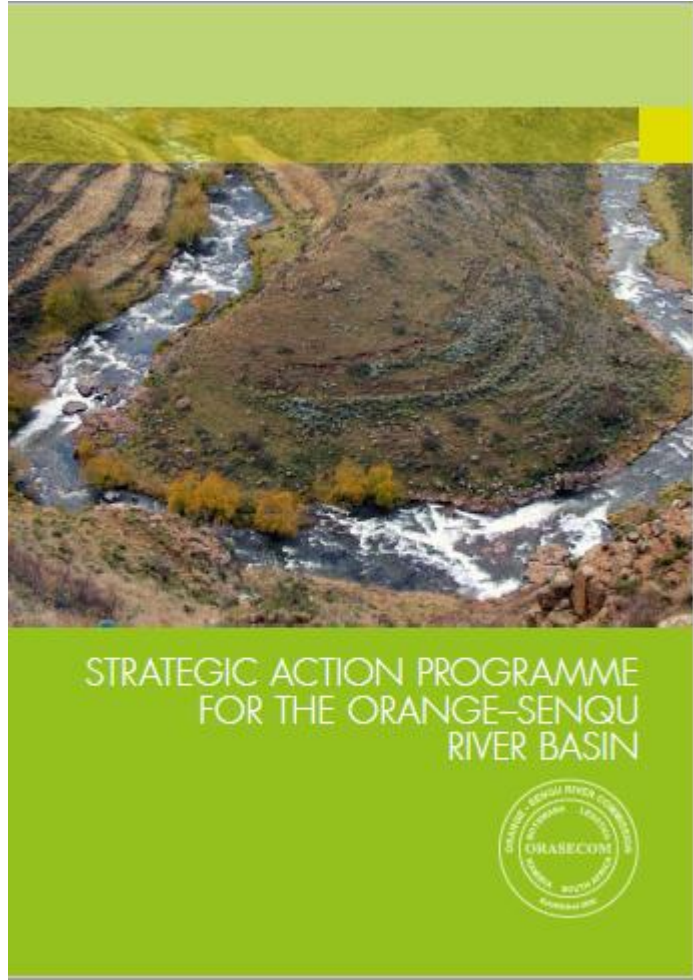
Namibia



South Africa



WCQ Indicators 4-7, & 9 : Programme Delivery (8 OF 16)





Integrated Water Resources Management Plan For The Orange-Senqu River Basin



Main Report

December 2014

Report No. ORASECOM 019/2014

WCQ Indicators 4-7, & 9 : Programme Delivery (9 OF 16)

- From **2013 to 2015**, Undertook Phase III of the ORASECOM IWRM planning programme focusing on the consolidation of a 10 year (2015 to 2024) IWRM Plan for the Basin based on all work done since Establishment of ORASECOM in 2000
- New information in the following further knowledge Gap Areas were also included:-
 - **Economic Accounting of Water**
 - **Water Demands Infrastructure**
 - **Water Resources Modelling**
 - **Environmental Flows and Water Quality**
 - **Economic Instruments**



Botswana



Lesotho



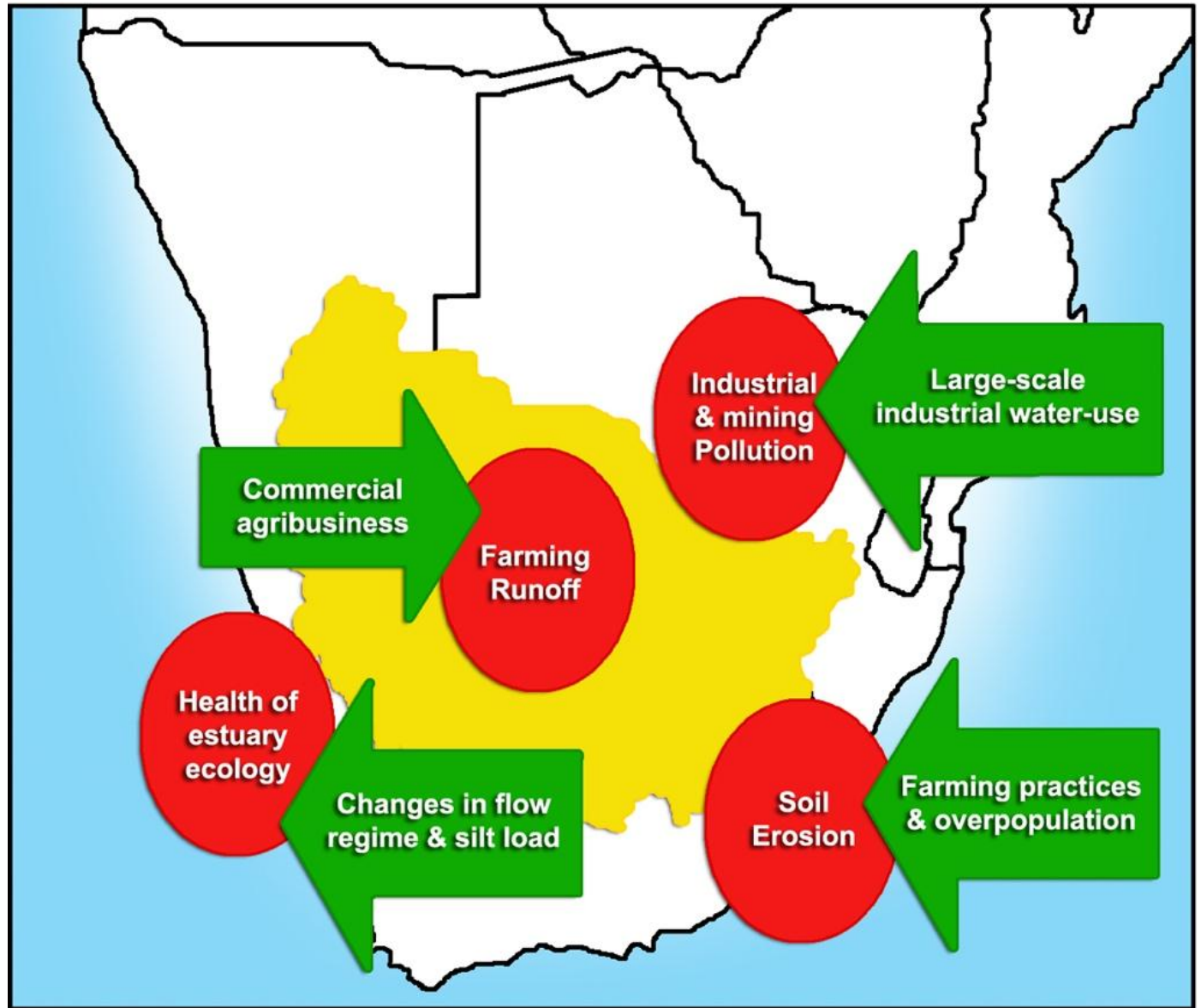
Namibia



South Africa

Key challenges in the Orange-Senqu basin

(Source: GTZ)



WCQ
Indicators 4-7,
& 9 :
Programme
Delivery
(10 OF 16)

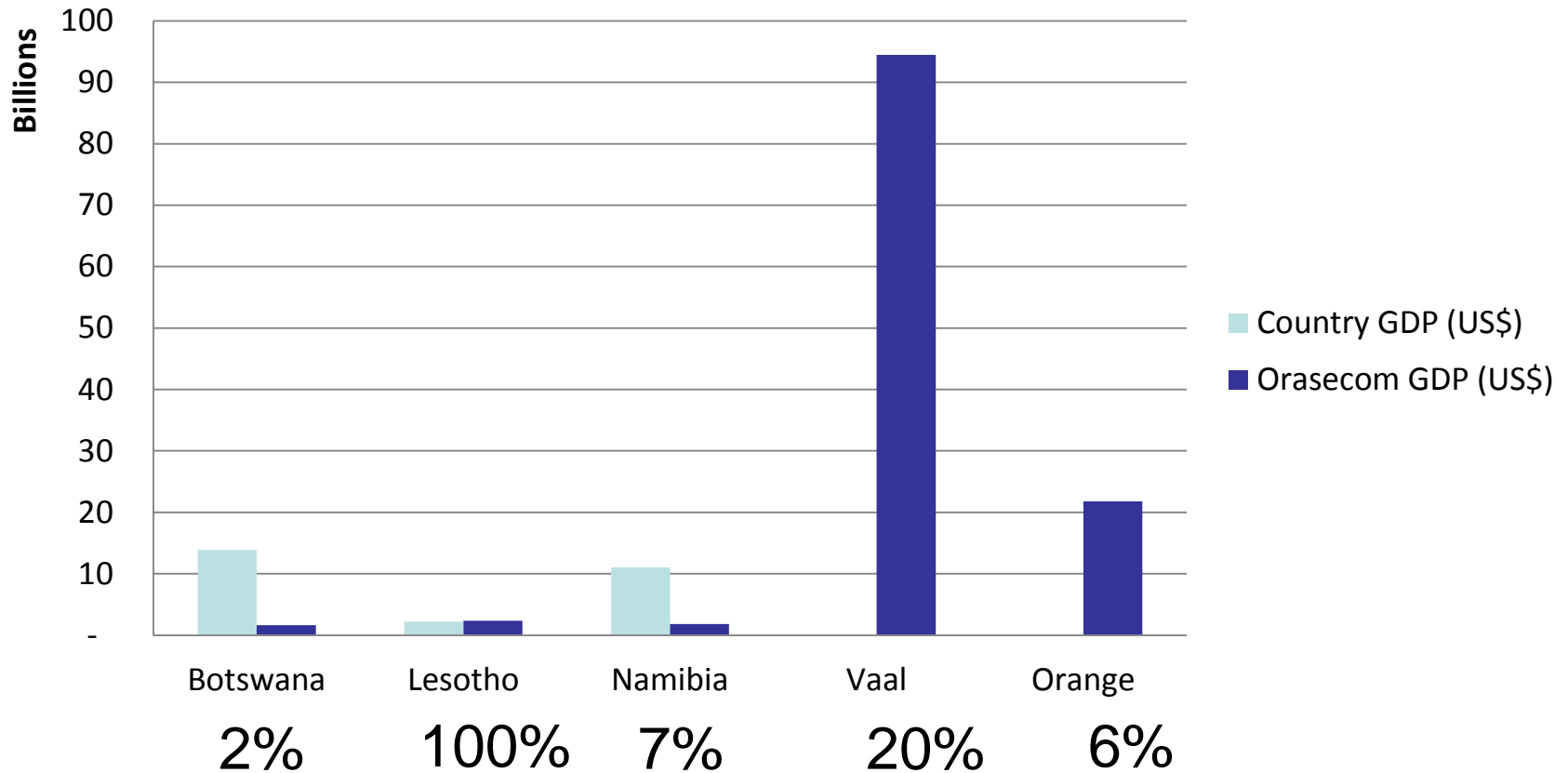
Economic characteristics of riparian states

Economic Characteristics of countries in the Orange-Senqu River Basin in Q2 of 2014 (source: <http://www.tradingeconomics.com>)

Country	Botswana	Lesotho	Namibia	South Africa
Population (millions)	2,038,228 <small>(source: Botswana Central Statistics Office, 2011 www.cso.gov.bw)</small>	1,876,633 <small>(source: Lesotho Bureau of Statistics, 2006 www.bos.gov.ls)</small>	2,113,077 <small>Source: Namibia Statistics Agency, 2011 www.nsa.org.na</small>	51,770,560 <small>Source: Statistics South Africa, 2011 www.statssa.gov.za</small>
GDP (billion USD)	14.79	2.23	12.58	351
GDP per Capita (USD)	7028	978	4582	5916

Orange-Senqu GDP

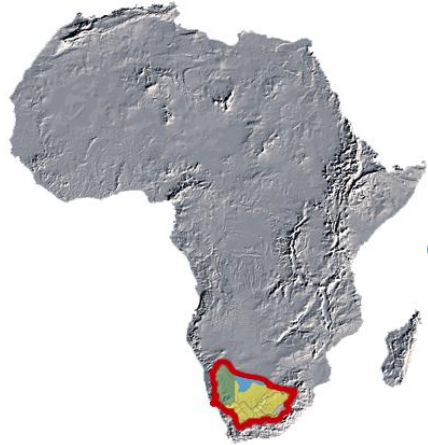
Orange-Senqu River Basin GDP Contribution (US\$)





Economic benefits from water

- Average Rands GDP/m³ used (2000)
 - Agriculture: R3.20 (irrigation only) – R16.80 (including livestock)
 - Mining: R7.60 – R163.40
 - Manufacturing and services: R209.30 – R730.00
- Lesotho
 - royalties from LHWP average M340 M p.a
 - Katse dam hydropower generates over 75% of Lesotho's electricity needs
- The Vaal River basin produces
 - >50% of South African GDP
 - >80% of South African electricity
- There are important deposits of alluvial diamonds along the Orange River and around its mouth.





IWRM Plan Objectives (2015 to 2024)

Central strategic Objectives	Enabling strategic objectives	Cross-cutting strategic objectives
<ol style="list-style-type: none"> 1. Ensure the optimized sustainable management of the basins water resources 2. Support socioeconomic upliftment and eradication of poverty in the basin 3. Ensure that the adverse effects of catchment degradation are reduced and the sustainability of resource use is improved 4. Maximize security from water-related disasters (especially flood and drought) 	<ol style="list-style-type: none"> 1. Put an adequate knowledge base in place 2. Build sufficient capacity and institutional strength 3. Promote high level of stakeholder engagement 4. Ensure appropriate financing mechanisms are in place 5. Promote adaptive management and effective monitoring and evaluation systems. 	<ol style="list-style-type: none"> 1. Promote the mainstreaming of adaptation to potential impacts of climate change into planned actions 2. Ensure the mainstreaming of gender considerations into planned actions



Botswana



Lesotho

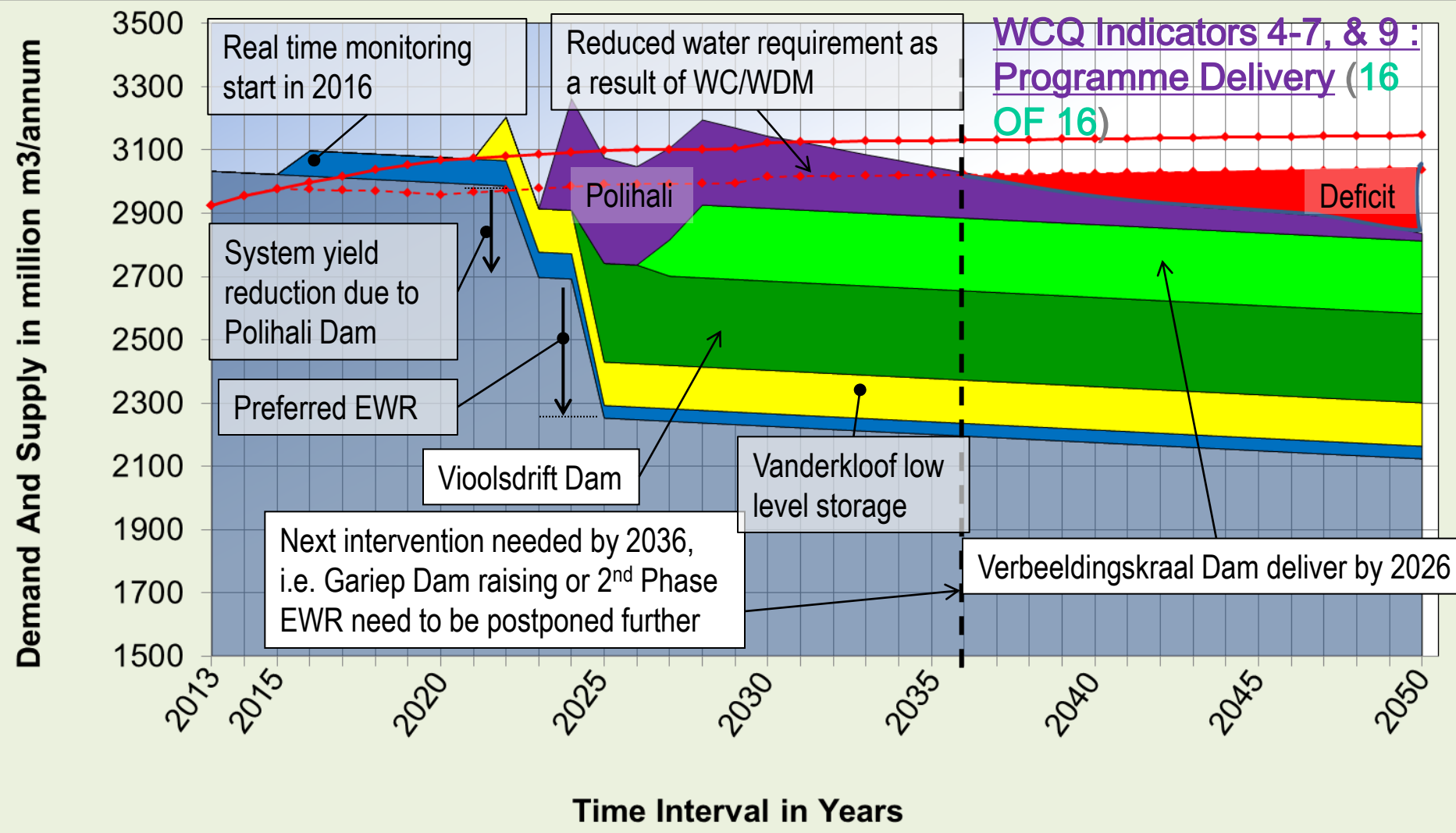


Namibia



South Africa

Interventions & Verbeedingskraal Dam Option

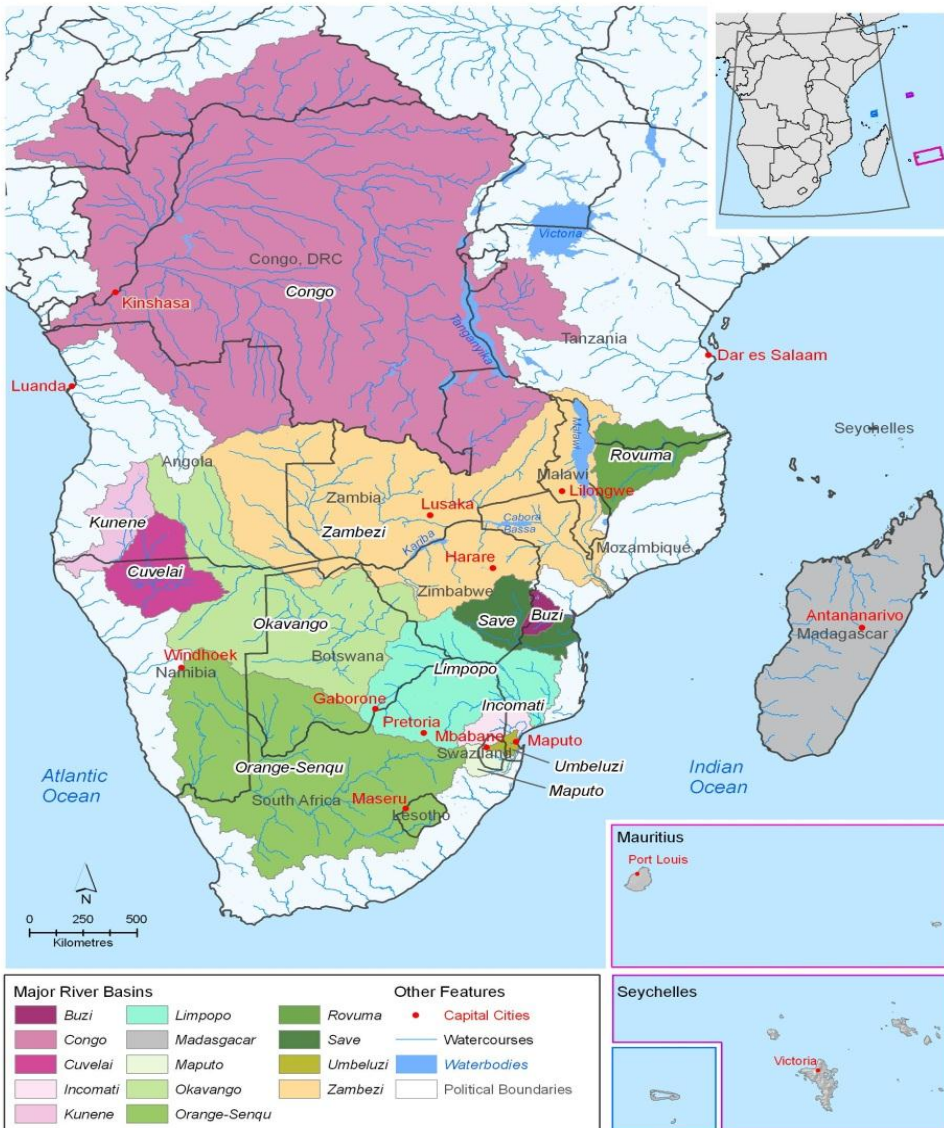


Resource including EWR	Real Time Monitoring
VanderKloof Lower Level Storage	Violsdrift Dam
Verbeedingskraal Dam	Polihali Yield to Orange
High Growth	High Growth with WC/WDM

24

WCQI 8. HIGH POLITICAL COMMITMENT

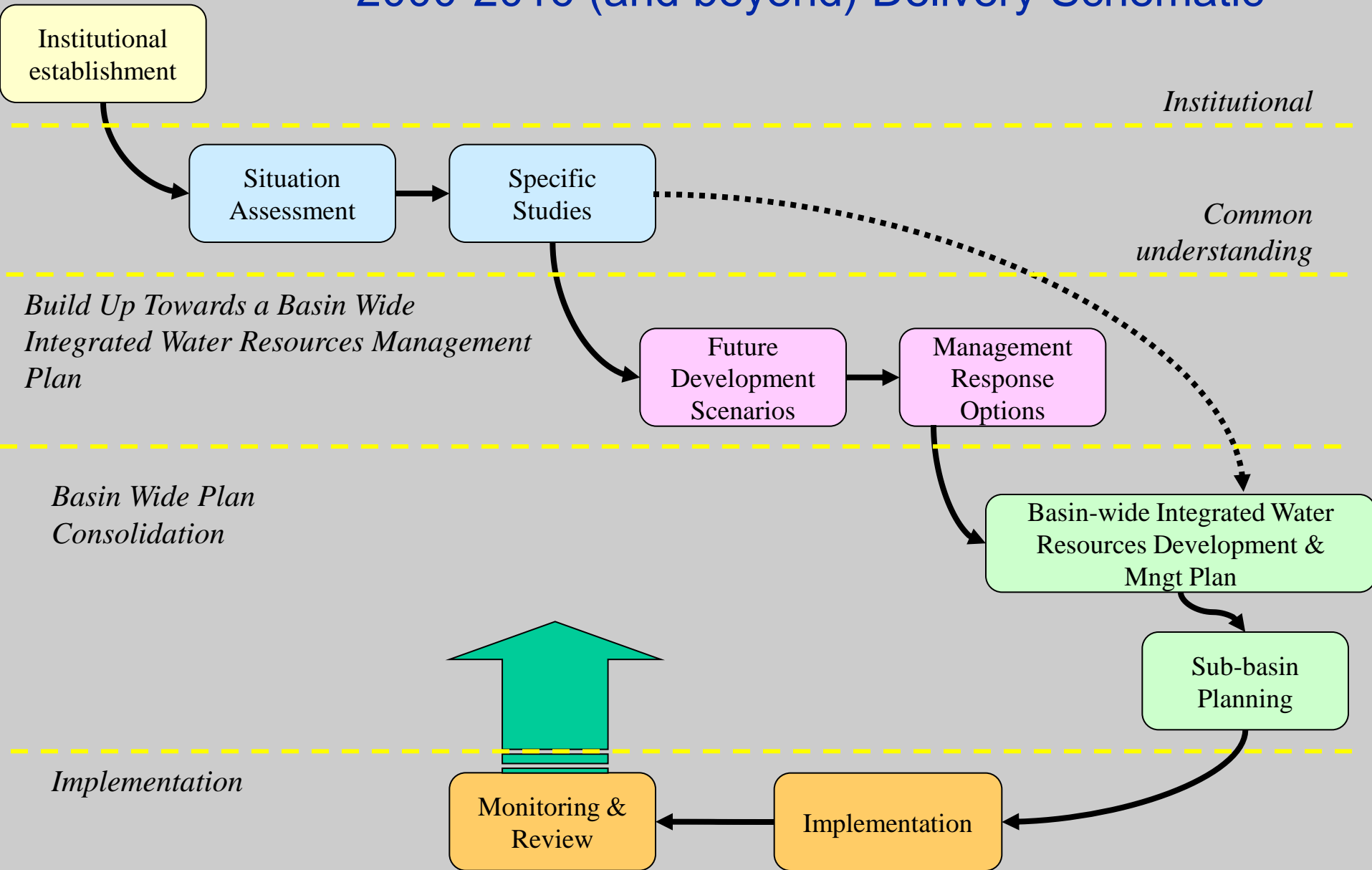
SADC Political Boundaries and Major River Basins



- SADC Treaty and Declaration was signed in 1992.
- The Treaty provides for member states to agree on areas of cooperation; (Article 22)
- Water established as stand alone area of cooperation (sector) in August 1996.
- The Water Protocol (revised) signed in 2000 was the first such protocol adopted by SADC Member states.
- Reporting on ORASECOM and other RBOs in the SADC Region is done at Annual Summits of Heads of State for blessing of Work Programmes of those and Provision of policy and political guidance
- Budgets for ORASECOM are presented by Water Ministers to Country Parliaments for approval

10. ACTUAL FUNCTIONING

2000-2016 (and beyond) Delivery Schematic



Lessons

- Common understanding essential as building block to basin planning.
- Transparency required in data and information sharing to consolidate basin context.
- Need to adopt common methodology and tools in processing and analysis for planning.
- Joint planning (basin level) provides opportunity for alignment of future forecasts, demand and yield projections, & optimisation of infrastructure investment, deployment and operation.
- Trust is critical and should be regarded as work in progress.
- Assymetry of capacities, skills and facilities as well as staff mobility pose significant risk to transboundary cooperation.

Thank you.

www.orasecom.org

