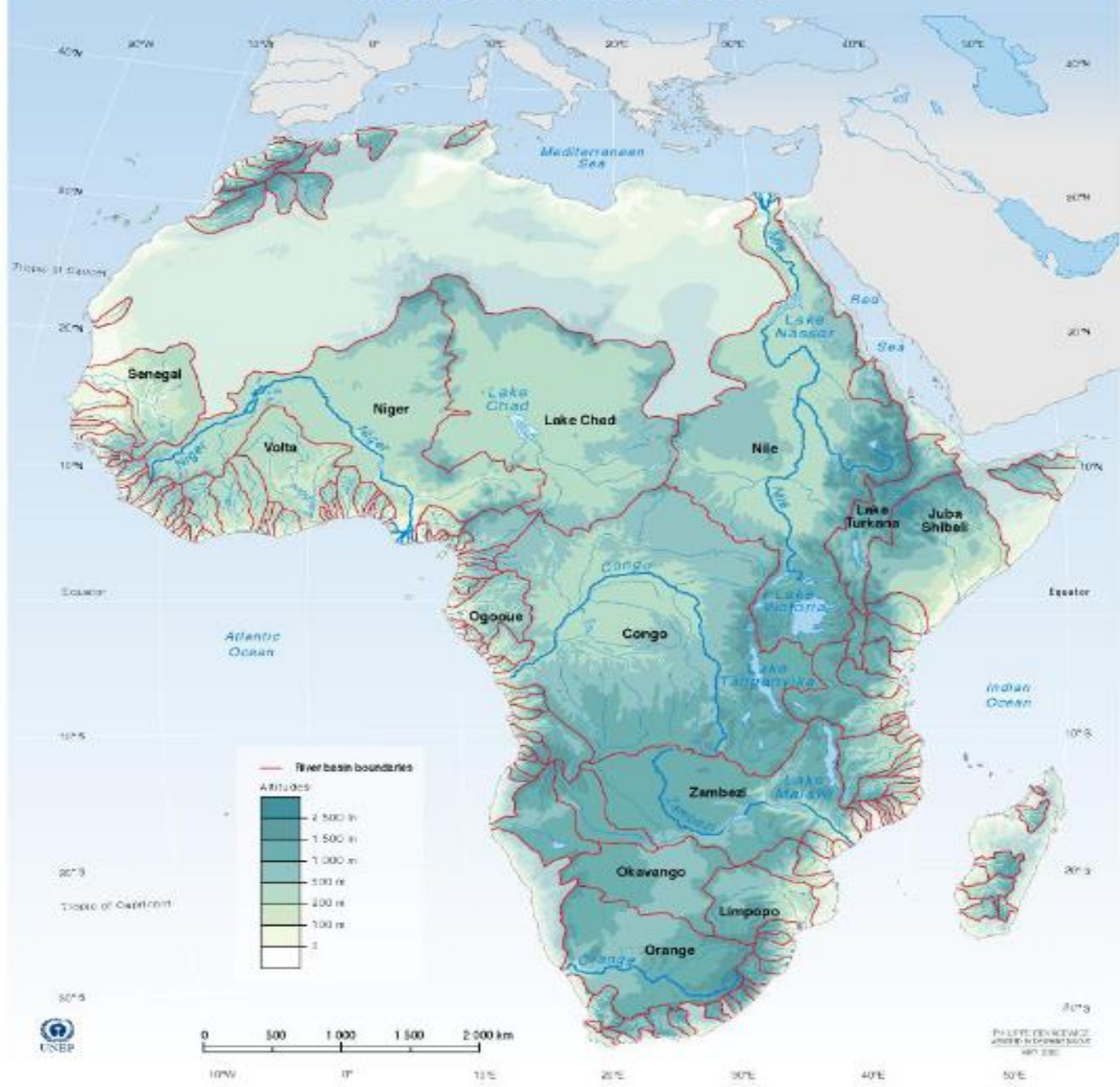


# Africa Water Investment Programme (AIP) Technical Workshop on Project Preparation

*Challenges and opportunities in Preparation of  
Transboundary River Basin Climate Resilient Water Projects  
– Experiences from the Orange Senqu River Basin*

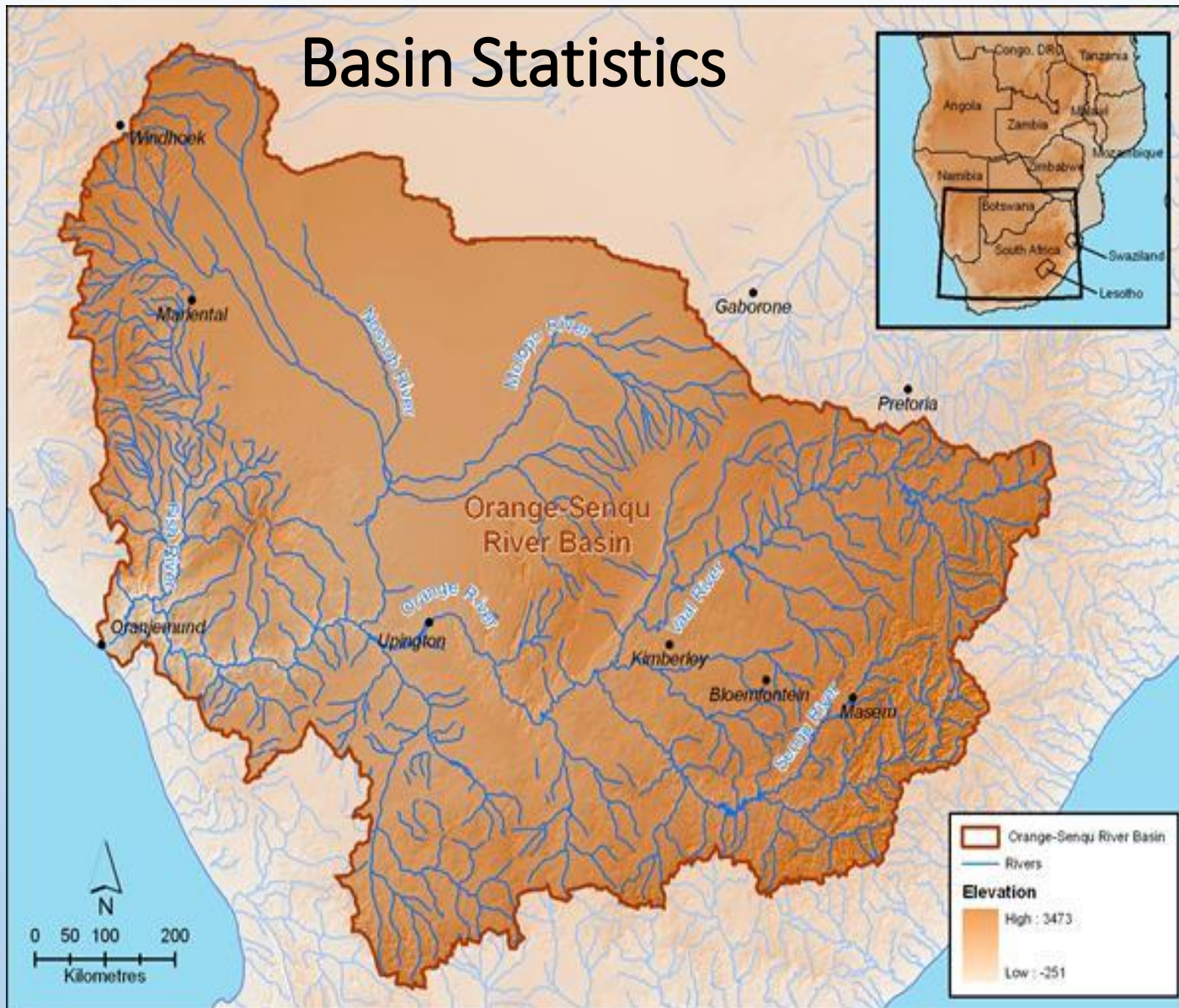
**Midrand, 20<sup>th</sup> September 2018**  
**Lenka Thamae – Executive Secretary**  
**ORASECOM**  
**[www.orasecom.org](http://www.orasecom.org)**

# The Major River Basins of Africa



Source: Aaron T. Wolf et al., 1996; Revanga et al., Watersheds of the World, World Resources Institute (WRI), Washington DC, 1998; Philippe Rekawicz, Atlas de poche, Livre de poche, Librairie générale française, Paris, 1996 (revised in 2001).

# Basin Statistics



1. Basin Area : 1 million sq km.
2. Rainfall : 1800mm in Lesotho highlands to 45mm at River mouth.
3. Population: 19 million (Earle et al. 2004).
4. Average annual natural runoff : 12,000 mill. cub. metres less than half the natural flow reaches the river mouth on the Atlantic Ocean.
5. Basin States: Botswana, Lesotho, Namibia and South Africa.

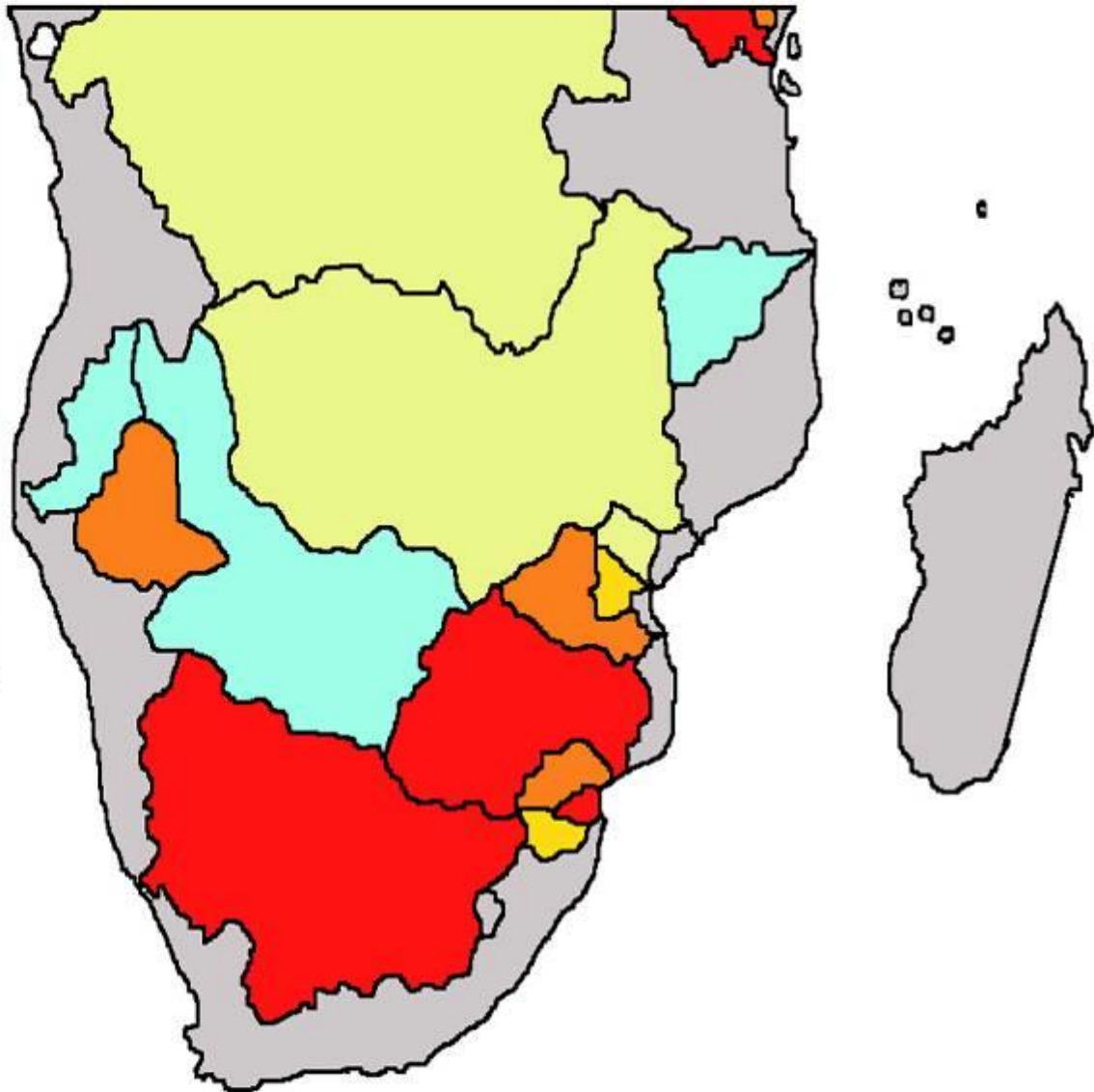
Data Sources:  
Digital Elevation Model - CGIAR SRTM Database  
Rivers - UNDP/GEF  
Dams/Waterbodies - UNDP/GEF

K:\Data\Project\GTZ141R\GIS\_MXD\1.RiverBasin\1.1.1\_BasinLandscape\_v1\_20090301.mxd

Orange-Senqu sources in highlands of Lesotho at around 3000 metres above mean sea level (alpine wetlands “sponges”) – very important for sustaining flows especially in dry season and during drought periods.



# Basin Challenges – Water Stress



# Climate – temperature change

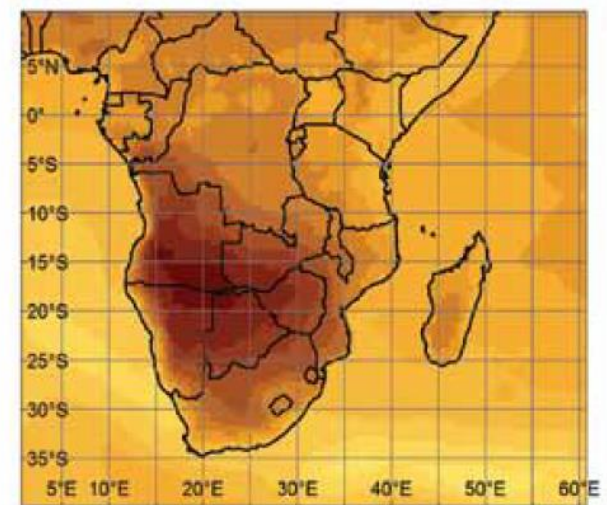
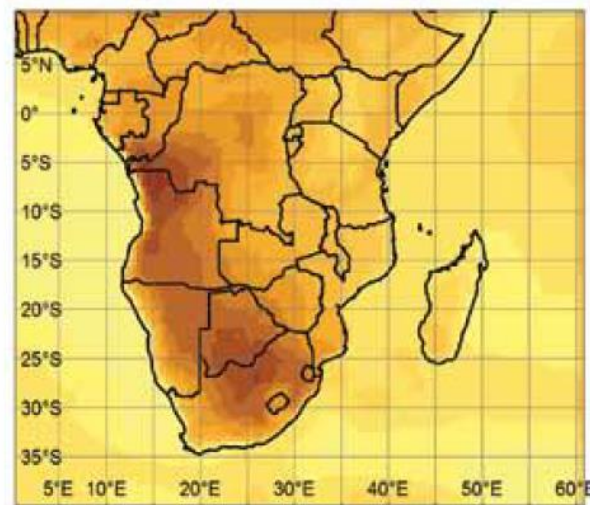
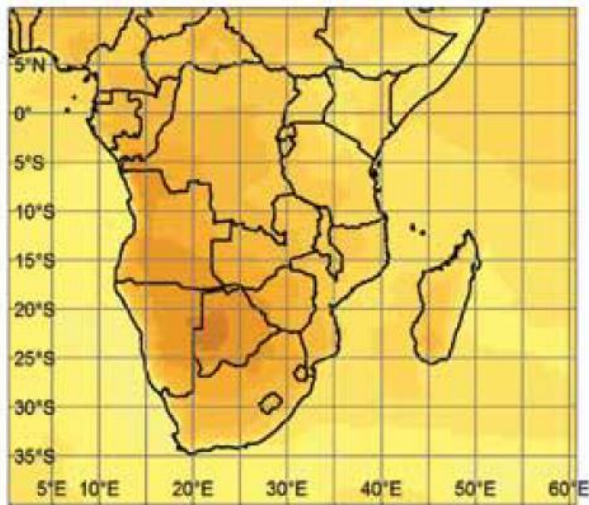
By 2050

Projected change in mean annual maximum temperature based on 6 dynamically downscaled GCMs

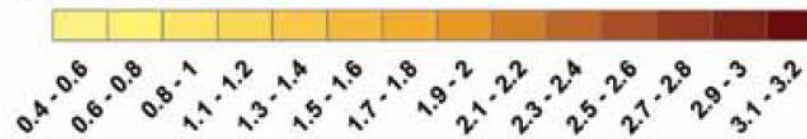
10<sup>th</sup> percentile

Median

90<sup>th</sup> percentile



degrees C per annum



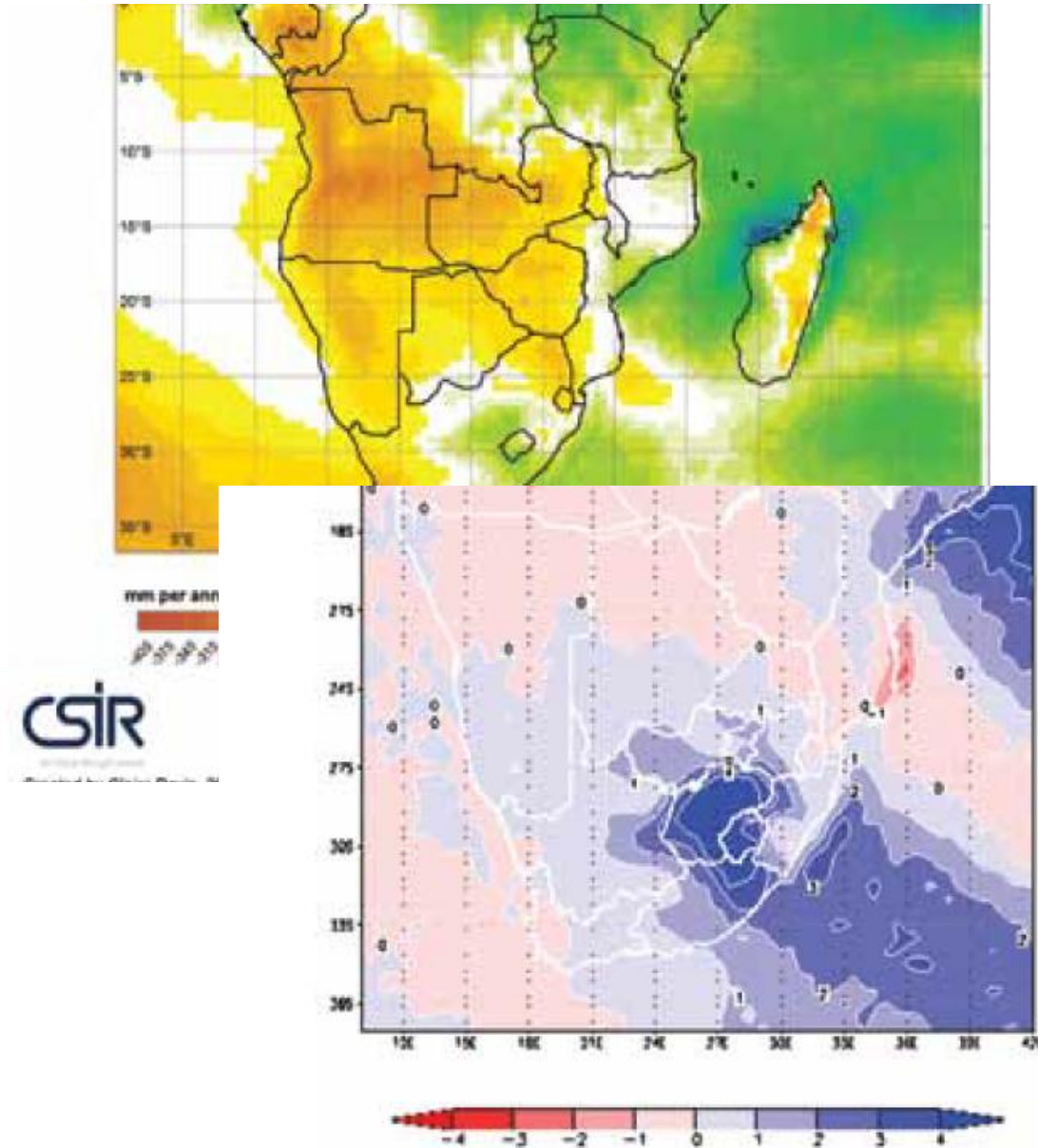
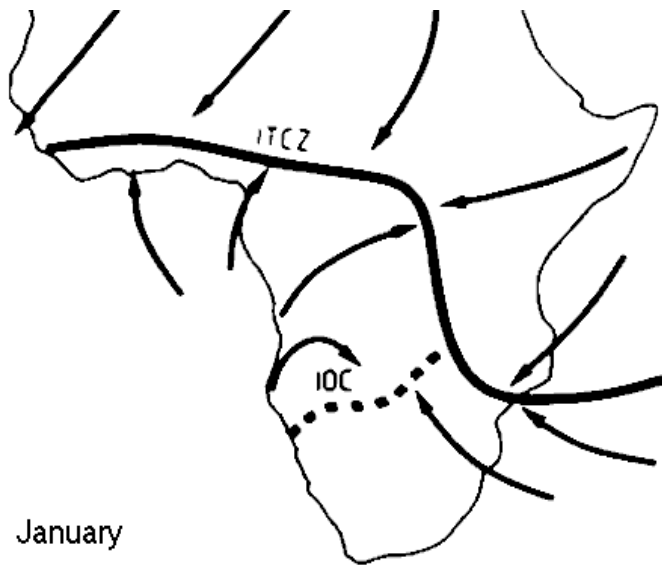
CSIR

our future through science

Created by Claire Davis, 2011

# Climate – precipitation change

By 2050



# Reservoir Storage in the Orange-Senqu Basin

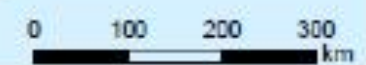


**Legend**

- Major town
- Orange-Senqu
- Main rivers
- Main reservoirs
- Live storage (>1 Mm<sup>3</sup>)
- Watershed
- Country
- Sub-catchment

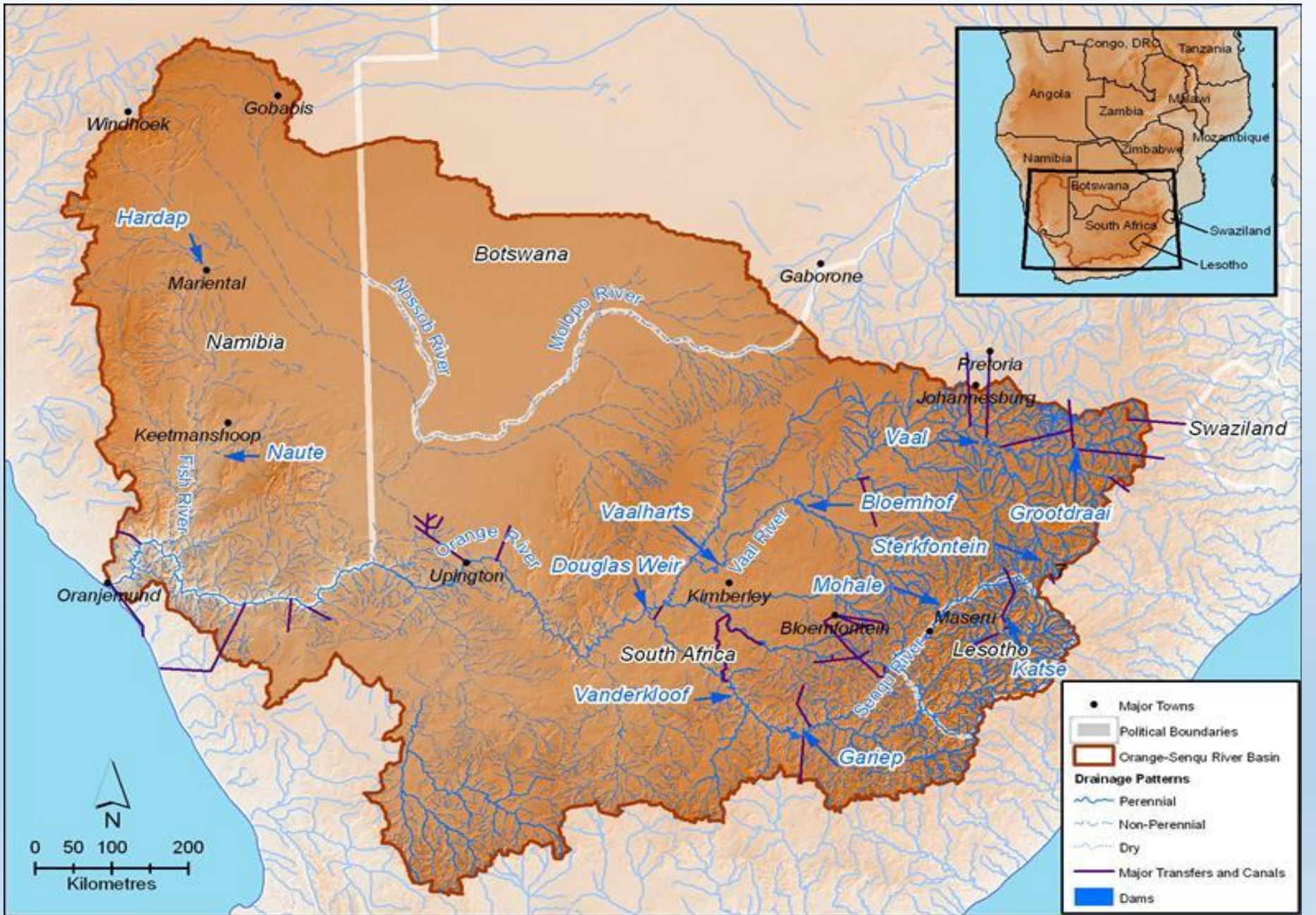
**BRL**  
Bureau of River Law

August 2014  
Source :





# System of Water Transfers to Supply Demand Centres



# Challenges

- i. Establishing common understanding, trust, and transparency towards agreement on a basin level integrated plan for water infrastructure delivery and management.
- ii. Uneven availability of scientifically robust information due to limitations in research capabilities and efficiency in processing and validation of field data.
- iii. Historically limited focus on climate resilience or adaptation rationale – focus on access to water, meeting demand and water security.
- iv. Limited self financing to consolidate project concepts into well formulated proposals.

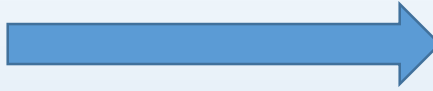
# Overview of 2015 Basin Level IWRM Plan

*Table 4-1: Summary of strategic objectives*

Central Objectives (CO 1 to 4)	Enabling strategic objectives (EO 1 to 5)	Cross-cutting strategic objectives (X0 1 and 2)
<ol style="list-style-type: none"><li>1. Ensure the optimised sustainable management of the basins water resources</li><li>2. Support socio-economic upliftment and eradication of poverty in the basin</li><li>3. Ensure that the adverse effects of catchment degradation are reduced and the sustainability of resource use is improved</li><li>4. Maximise security from water-related disasters (especially flood and drought)</li></ol>	<ol style="list-style-type: none"><li>1. Put an adequate knowledge base in place,</li><li>2. Build sufficient capacity and institutional strength,</li><li>3. Promote high level of stakeholder engagement</li><li>4. Ensure appropriate financing mechanisms are in place,</li><li>5. Promote adaptive management and effective monitoring and evaluation systems.</li></ol>	<ol style="list-style-type: none"><li>1. Promote the mainstreaming of adaptation to potential impacts of climate change into planned actions</li><li>2. Ensure the mainstreaming of gender considerations into planned actions</li></ol>

# Opportunities

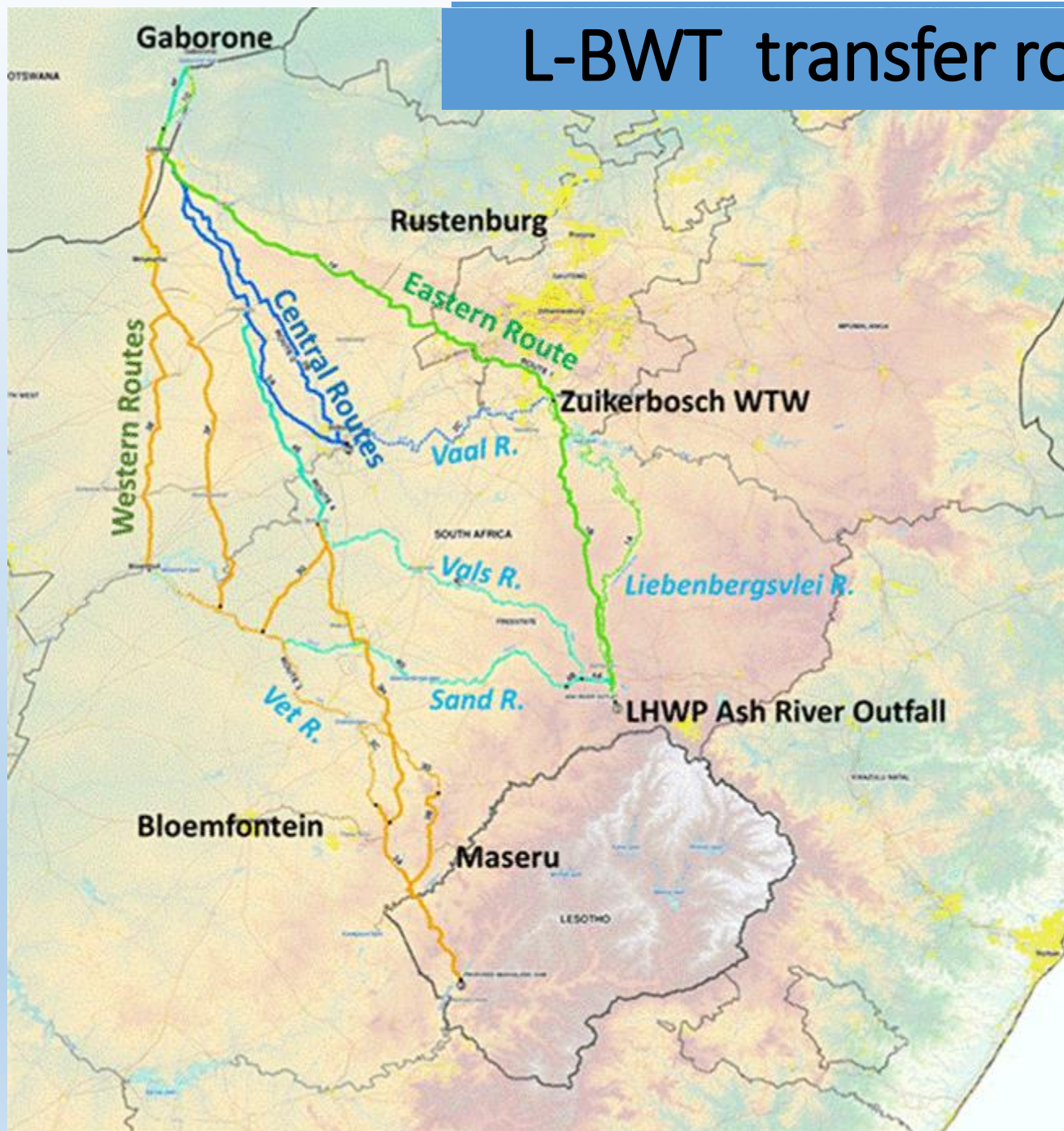
- i. Political commitment, advocacy and solidarity due to urgency of climate change impacts within the basin and improved awareness on vulnerabilities.
- ii. Promotion of climate resilient projects offering solution with multiple benefits (multipurpose nature of infrastructure solutions).
- iii. Basin approach, ability to identify basket of solutions jointly by state Parties, optimisation at basin level for sustainability, and ability to leverage economies of scale and collective economic strength.
- iv. Partnership with agencies with knowledge of potential funding windows, and with complimentary skills and capacity.



# THE LESOTHO-BOTSWANA WATER TRANSFER PROJECT



# L-BWT transfer routes



Thank you

**Tshimolodiso semmuso ya tiriso ya metsi mo metseng  
ya Middlepits go tswa Aferika Bo**  
Metsi ga a itse melelwan  
Tirisano ya mafatshe a

**Joint Official Commissioning of Cross Border Water  
Supply to Middlepits Cluster from South Africa.**  
Water knows No boundaries,  
Trans Boundary Cooperation.

