

Groot Letaba River Water Development Project (GLeWaP)



water & forestry

Department:
Water Affairs and Forestry
REPUBLIC OF SOUTH AFRICA

Stakeholder / Authority / Focus group meetings

July / August 2007

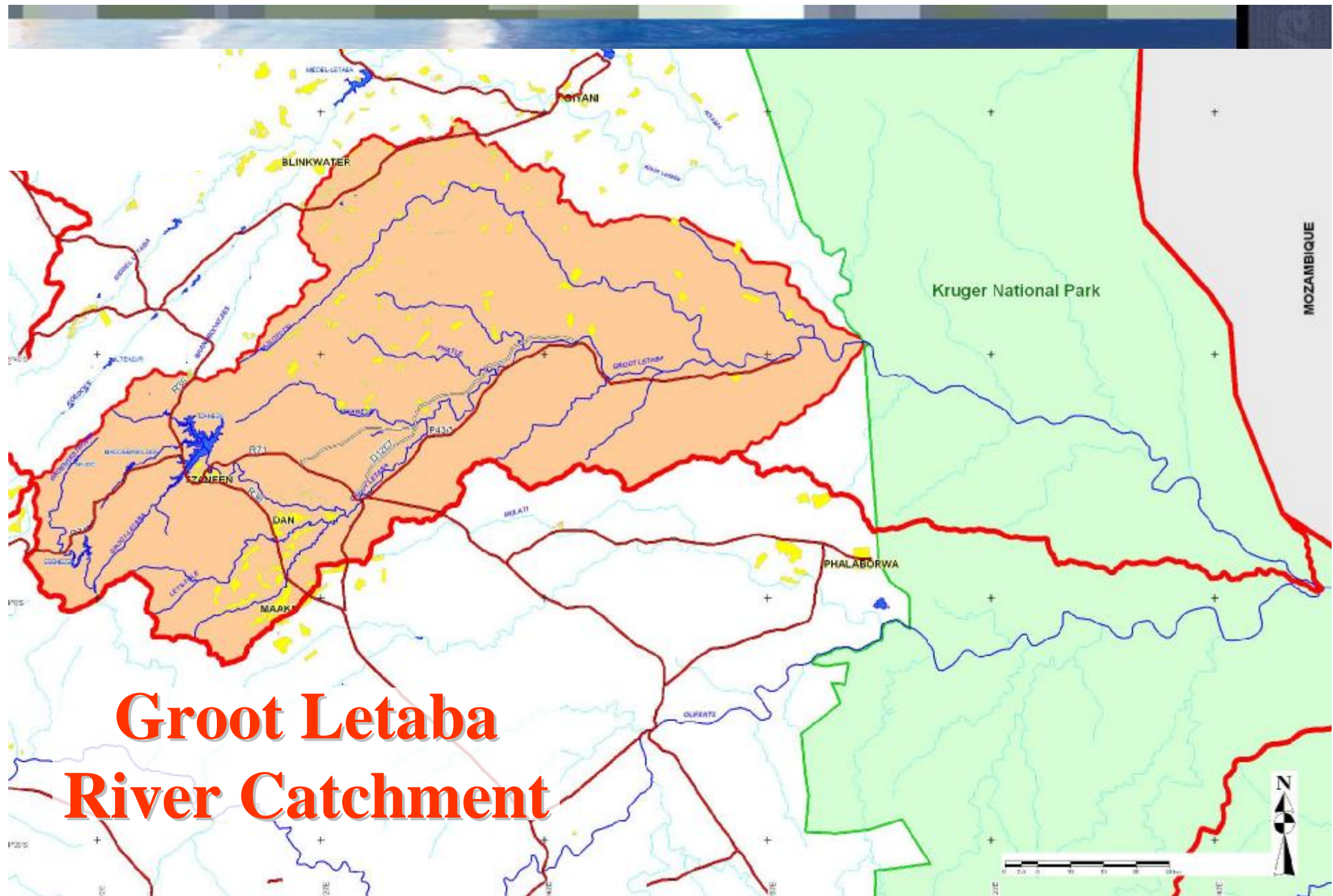
Presenter: Ockie van den Berg / Bob Pullen

Content

- Background
 - Groot Letaba River Catchment
 - Resources
 - Water utilisation & requirements
 - Situation overview
- Previous studies
- GLeWaP
 - Post Feasibility Bridging studies
 - The Project

BACKGROUND

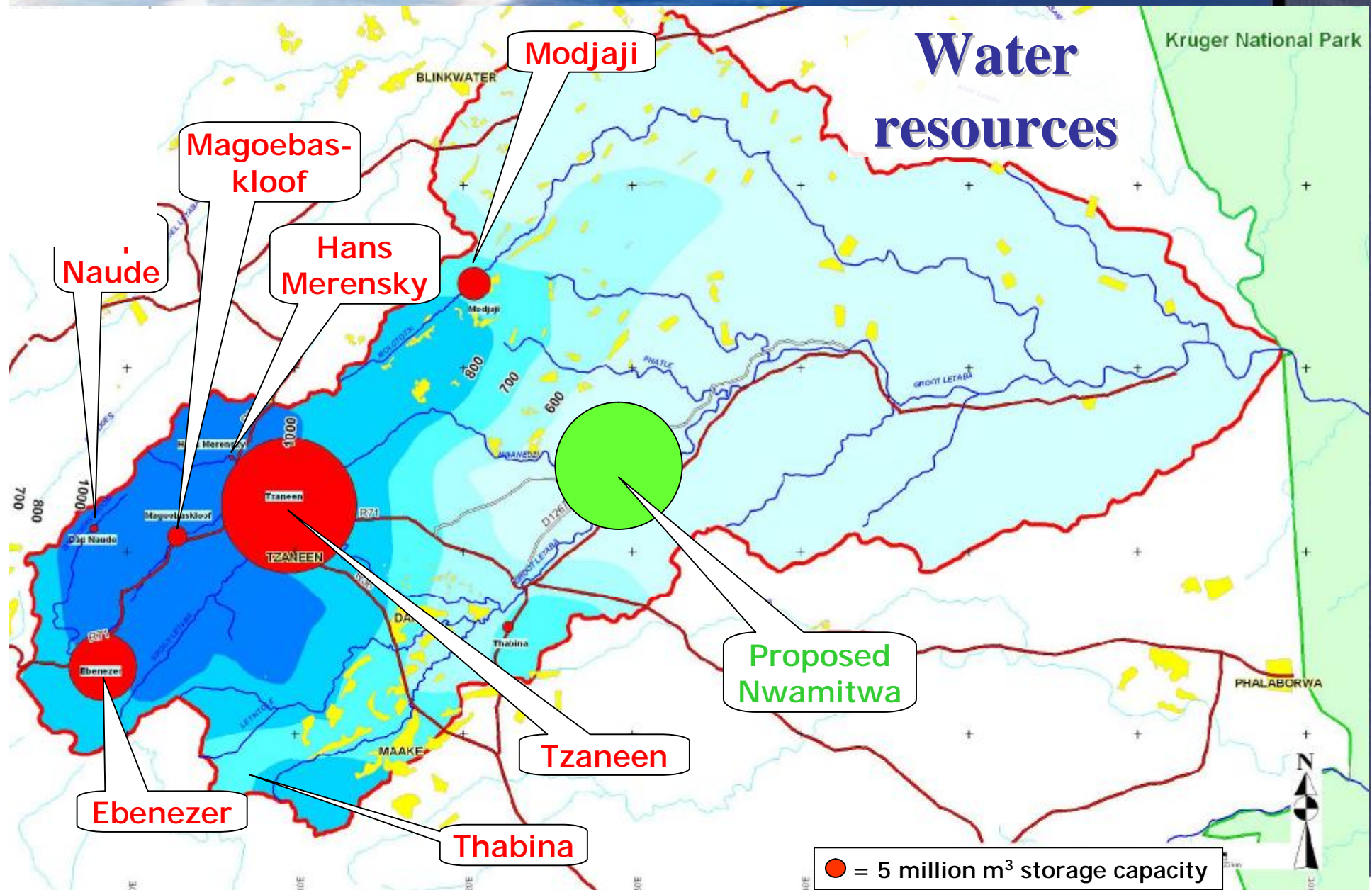
Presenter: Ockie van den Berg



Groot Letaba River Catchment



Water resources

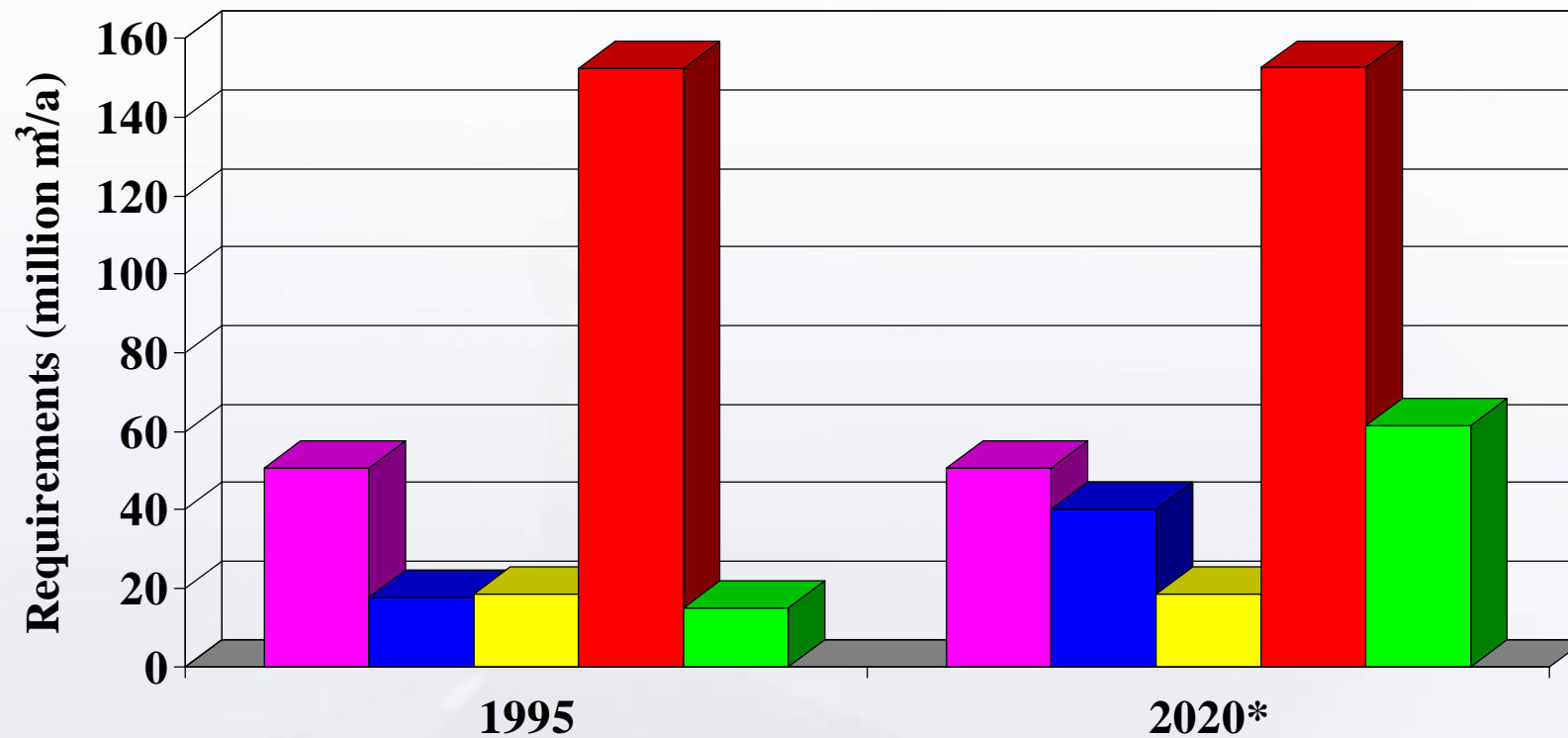


Water resources: Existing Major Storage Dams

Dam	River	Storage (10 ⁶ m ³)	Yield (10 ⁶ m ³ /a)
Tzaneen	Groot Letaba	157.6	60
Ebenezer	Groot Letaba	70.1	24
Modjaji	Molototsi	8.2	
Magoebaskloof	Politsi	5.0	
Thabina	Thabina	2.8	
Dap Naude	Broederstroom	1.9	
Hans Merensky	Ramadiepa	1.3	

Transfer water to Polokwane

Water Utilisation and Requirements



■ Afforestation

■ Primary use

■ Export to Polokwane

■ Irrigation (full requirement)

■ Ecological Requirements

**Estimated in 1998 Feasibility study*

Situation Overview

- Water resources highly over-committed
- Domestic water requirements are expected to increase significantly
- Conservation status of riverine ecosystems - major concern
- Irrigation sector
 - mainstay of socio-economy in the region
 - experiencing water shortages of increasing frequency and severity

1998 Feasibility Study

Feasibility Study

- Completed in 1998
- “Do nothing” as an option
 - Increasing primary water requirements must be met
 - Riverine ecosystems will deteriorate further
 - Shortages of water for irrigation will worsen
 - Socio-economy will suffer periodic serious setbacks - implications for poverty and social problems

Various options examined in the Feasibility Study

- Replacing commercial afforestation with natural vegetation
- Ceasing export of water
- Improve utilization efficiency of irrigation water
- Decrease irrigation allocations
- Water loss management: domestic & industrial
- Create additional storage
- Improve water management in all user sectors

Feasibility study recommendations

- Management intervention (necessary but limited potential)
 - Water loss management
 - Improve effectiveness of irrigation sector
 - Remove invasive alien woody species
- Reallocate resources
 - Reserve, compulsory licensing, decrease allocations
- Development of water resources
 - New major dam at Nwamitwa in Groot Letaba River
 - Raise Tzaneen Dam

Further development of the water resources by creating additional storage is strongly supported by the
Limpopo Provincial Government

Integrated strategy

- Support and intensify management interventions
- Develop detailed plan for reallocation of resources, including implementation of the Reserve
- Support initiatives of commercial irrigators to raise Tzaneen Dam for improving management of the resource
- Develop new major storage dam at Nwamitwa in the Groot Letaba River

Other recent water resource investigations

- Comprehensive Reserve determination, 2006
 - Preliminary reserve has been determined and signed off at comprehensive level of reliability
- Letaba River System Annual Operating Analysis, 2006

Groot Letaba River Development Project (GLEWaP)

- Post Feasibility Bridging Studies
- The Project

Presenter: Bob Pullen

Post Feasibility Bridging Studies

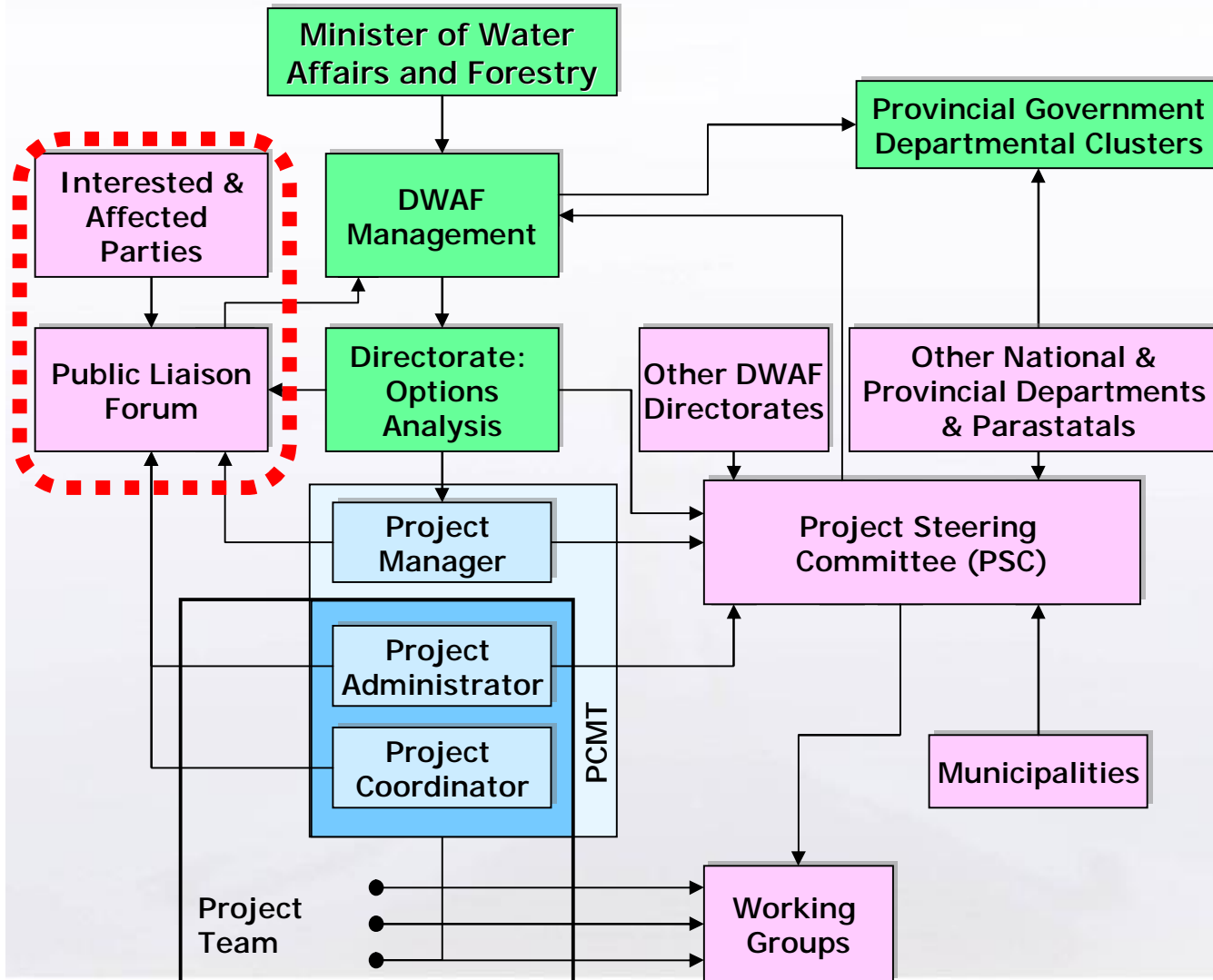
- Commenced in September 2006
- Purpose:
 - to facilitate all preparations and decision-making for implementation
- Update information used for 1998 Feasibility Study
- Fill gaps in information required for decision-making



Structure of Bridging Studies

- Project Coordination and Management: BKS
- Technical Study: Ninham Shand
- Environmental Management: ILISO Consulting
- Public Involvement Programme: Zitholele
- Socio-economic Evaluation: procurement in process
- Institutional and Financing: procurement in process

Governance structure for the Bridging Studies



Functions

- Advise DWAF Management on strategic matters
- Forum for coordination
- ID & overcome obstacles

Composition

- DWAF Directorates
- Other National Departments
- Limpopo Provincial Departments
- Tribal Councils
- District & Local Municipalities
- WSA & WUA's
- SANParks

Expected outcome

- Firm, documented decisions on :
 - Physical development to be undertaken
 - Positive linkage with Water Services programme
 - Management interventions
 - Environmental Authorization and other permits
 - Institutional arrangements to be made
 - Financing arrangements
 - Conceptual designs and cost estimates
 - Commitments to an implementation programme

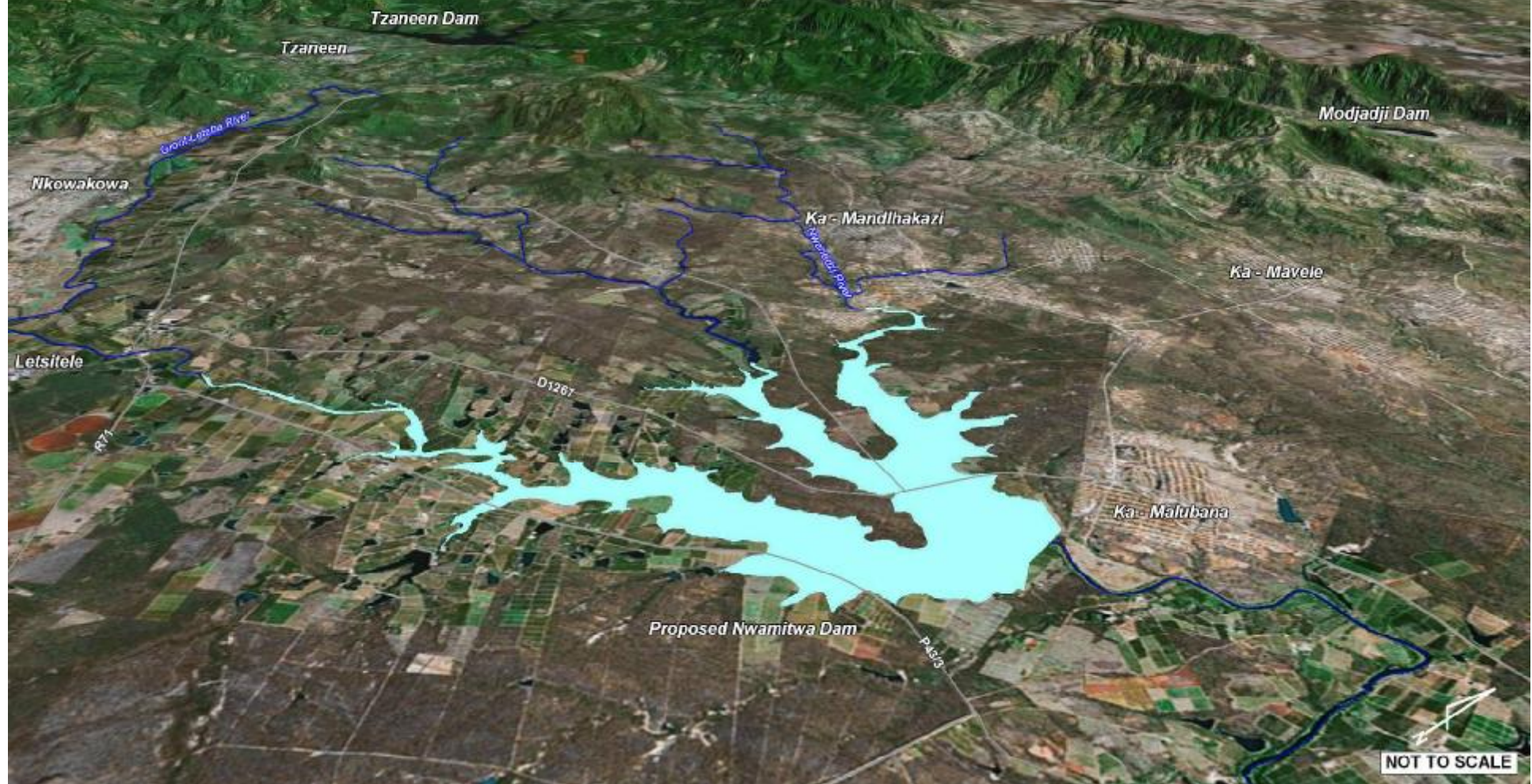
Groot Letaba River Development Project (GLeWaP)

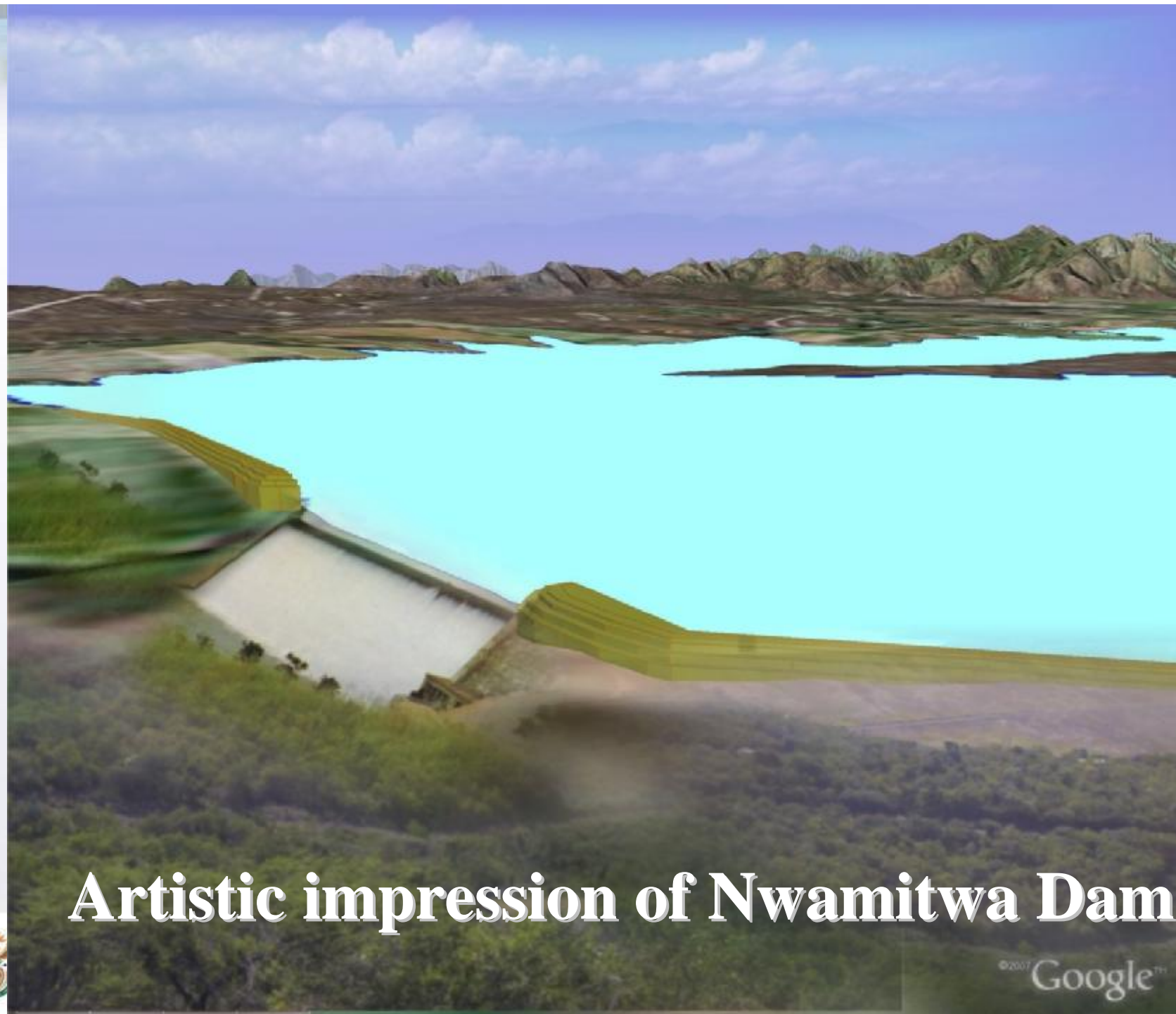
- Objective:
 - Improve management of water available for social and economic development in Groot Letaba River Catchment
- Envisage development proposals:
 - New major storage dam at Nwamitwa
 - Raising of Tzaneen Dam
 - Develop other bulk water supply infrastructure

New major storage dam at Nwamitwa

- In Groot Letaba River downstream of confluence with Nwanedzi River – not an attractive dam site
- Catchment area is 1400 km²
- Mean Annual Runoff (MAR) is 122.6 million m³
- Gross storage capacity of about 144 million m³
- Increase in system yield of 47 million m³/a
- Capital cost R490 million (1996 prices)
- Includes the realignment of R529 and other local roads

Proposed Nwamitwa Dam





Artistic impression of Nwamitwa Dam



Tzaneen Dam Raising



- Attractive benefit/cost ratio based on 1998 Feasibility study
- Current capacity is 158 million m³, raised capacity 203 million m³
- Yield increase with 6% to 64 million m³/a
- Will not contribute to managing the Reserve












Other infrastructure

- Bulk water supply infrastructure
 - Water treatment plant
 - Bulk distribution pipelines
 - Various pump stations and reservoirs

Bulk water distribution

The map illustrates the bulk water distribution network in the Tlokweng area. A central green-shaded region represents the Tlokweng Water Supply Scheme, which is fed by the proposed Nwamitwa Dam (indicated by a callout box). This scheme is interconnected with several other water supply schemes, including the Mankweng, Mankgodi, and Mankgodi-Mankweng schemes, which are shown in yellow. The map also displays the Mankweng River and the Mankgodi River, along with various roads and infrastructure. A scale bar at the bottom right indicates distances up to 10 km.

Work programme

Task Name	2006		2007				2008				2009				2010				2011				2012				2013	
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
Post Feasibility Bridging Studies																												
Bridging studies																												
Environmental Authorisation (ROD)	◆ October 2008																											
Technical optimisation	May 2008 ◆																											
Institutional & Finance	◆ October 2008																											
Ministerial Decision	March 2008 ◆																											
Notify Co-basin States																												
Procurement of design PSP																												
Detail design																												
Procurement of contractor																												
Preliminary work																												
Construction																												
Commissioning of the works																												

Your contribution?

Land acquisition

- Land will be acquired according to the laws of the country

