water affairs
Department:
Water Affairs
REPUBLIC OF SOUTH AFRICA

Development of a Reconciliation Strategy for the Luvuvhu and Letaba Water Supply System

Study Management Team Meeting No. 1 Minutes

Held at WRP offices, Green Park Estate, 27 George Storrar Drive, Groenkloof, Pretoria, at 14h00 on 20 September 2011.

ACTION

1. WELCOME AND INTRODUCTION

The Chairperson, Mr. T Nditwani opened the meeting by welcoming those present at the first Study Management Team (SMT) meeting for the Development of a Reconciliation Strategy for the Luvuvhu and Letaba Water Supply System.

2. ATTENDANCE AND APOLOGIES

2.1 ATTENDANCE

An attendance register was circulated, as noted below:

T Nditwani (TN):	DWA: NWRP - **In chair**
W Jezewski (WJ):	DWA: NWRP
S van Jaarsveld (SvJ):	DWA:OA
AC Hernandezmaldonado (ACH):	DWA: Limpopo Regionanl Office: OCD
N Mohapi (NM):	DWA: RDM: C
S Naidoo (SN)	DWA: WRC
M Mabuda (MMD):	DWA: Limpopo Regional Office: IE
P van Rooyen (PvR):	WRP
I Nyatlo (IN):	DWA: Limpopo Regional Office: IE
A Joubert (AJb):	Zitholele
D Mnguni (DM):	DMM
L Boyd (LB):	Golder
A Jeleni (AJ):	Muondli
HG Maré (HGM):	WRP
B Haasbroek (BH)	Hydrosol
D Smook (DS)	Worley Parsons
F Chinyowa (FC)	Worley Parsons
K Sami (KS)	WSMLeshika

2.2 APOLOGIES

It was noted that the following people apologised for not attending the meeting:

O van den Berg	(OvdB):	DWA: OA
A Matukane	(MM):	DWA: Limpopo Regional Office
Y Atwaru	(YA):	DWA: RDM: RR
B Weston	(BW):	DWA: RDM: RR

N Motebe	(NMT):	DWA: RDM: RR - GWRR
W Wegelin	(WW):	WRP
R Aird	(RA):	Kayamandi
SG Pienaar	(SGP):	EvN
D Hovy	(DH):	Murango
J Rutherfoord	(JR):	Golder
F Humphries	(FH):	Golder

3. APPROVAL OF THE AGENDA

The agenda was accepted without changes.

4. OVERVIEW OF THE PROJECT

4.1 TECHNICAL

TN provided an overview of the study and gave reasons as well as motivations why a reconciliation study is required. TN explained the importance and need for linkages with other processes and studies by others currently being undertaken. TN also stated that the D:RDM: WRC will soon start with a classification study for the area and liaison is expected to take place between that work and this study. It was emphasised that interaction with other institutions affected by or impacting on this study, is also important during the course of this study.

(Slides from TN's presentation are attached in Appendix B of the minutes.)

4.2 STAKEHOLDER PARTICIPATION

A support group is an important component in the stakeholder participation process. A support group is there to provide relevant information required for the formulation of the strategy, knowledge essential to execute technical tasks and are attending to specific matters that may be identified for evaluation by the SSC. TN requested that DWA personnel partake in support groups as well as in the Study Management Team (SMT). The SMT will include people from CD:RDM, Water Quality, Water Regulation and Use, Water Services and Planning, Water Use Efficiency, Water Resource Planning Systems, Option Analysis, Water Allocation and various representatives from the Regional office in the study area. A list of names will be prepared and distributed to everyone for their input. HGM

The Study Steering Committee will consists of key stakeholders involved in the water business, such as senior managers from DWA, Water Boards, Bulk water users, etc.

It is a standard requirement for studies such as the Luvuvhu-Letaba Reconciliation Strategy Study, to inform the general public. This will be done through several newsletters as well as public meetings.

A website will be set up for the study to serve as a repository of information relating to the study. The website will be kept up to date during the course of the study to reflect the ongoing progress. The purpose of the website is to make information available to the wider public and all interested or affected by the study.

5. ROLES, RESPONSIBILITIES AND COMMUNICATION

5.1 CLIENT TEAM

It was reported that the study would be managed through two committees; a Project Management Committee and a Study Management Team Committee. The former will consists of core group of individuals including TN, WJ, PvR and HGM and it's function will be to discuss contractual, administration and financial matters as well as the work programme. The latter committee referred to as the Study Management Team (SMT) will be a wider group as per the invitees of this meeting.

It was requested that e-mail communication relating to the study management be copied to TN, WJ, PvR and HGM for coordination and integration purposes.

5.2 PSP

The PSP team was already introduced as part of Item 1 of the agenda and is listed in the attendance register.

5.3 OTHER PLANNING PROCESSES AND STUDIES

It was emphasised that the PSP need to be informed if there are any studies or processes that need to be integrated with the Luvuvhu Letaba Reconciliation Study. The PSP need to follow up on the progress of other current studies, to be able to obtain inputs from and to provide inputs to these studies, where required. — DWA officials, PSP Team

The PSP already started to build a database of previous and current studies applicable to the study area. PvR presented the following list of current active studies and requested further information on any studies that the committee is aware of, so that it can be added to the lists:

- Validation and Verification of Water use in Luvuvhu-Letaba WMA
- Water demand and water conservation Study for the Limpopo and Luvuvhu-Letaba WMAs
- Annual Operating Rules for the Letaba River
- Groot Letaba Development Project
- Socio-Economic and Ecological Impacts of Water Restrictions in the Letaba Catchment
- Operating Rules for Stand alone dams

TN reported that at the CCAW meeting the Limpopo Department of Agriculture informed DWA of the Resis programme for the revitalisation of irrigation schemes. TN will provide more information in this regard to the study team. — TN

It was further stated, that there is already a number of existing committees and forums in the region, which the study should utilize for communication, co-ordination and the sourcing of information purposes.

TN indicated that further plans to support the Middle Letaba sub-system from Nandoni Dam was handicapped as serious problems was encountered. There are large areas around Nandoni Dam itself, not yet receiving any water. Currently only approximately 5% of the target areas are supplied with water from Nandoni Dam (due to a lack of distribution infrastructure), although the available water from dam is already fully allocated to designated areas. The population is mostly rural, resulting in difficulties when trying to supply water to the scattered villages over large areas.

It was highlighted that there are several transfers in and out of this WMA, mainly on the southern side of the study area. It might be required to source water from the Olifants catchment to be able to supply some of the demands in the Luvuvhu-Letaba WMA. There are international obligations that need to be taken into account as well as the requirements for the KNP.

6. TASKS RESPONSIBILITIES LINKAGES AND PROGRAMME

PvR presented the various proposed tasks of the study, in according to the study Gantt chart (see **Appendix A**) and highlighted the following for each of the tasks:

6.1 INCEPTION PHASE

The project inception phase involves the compiling of the Study Plan for the execution of the study. Information from tasks 1 (summary of previous information) and task 2 (preliminary screening workshop) will form the basis for the finalising of the methodology, budget and schedule of the tasks. The inception phase is planned to be completed by the end January 2012. The inception report is the main product of this phase and all the task leaders will provide input to this report.

6.2 TASK 1: SUMMARY OF PREVIOUS AND CURRENT STUDIES

This task will be carried out in parallel to the Inception Phase as findings from this task need to feed into the inception report. AJ is the task leader and the final product will be a report summarizing the key findings and information from completed studies. The relevant information from this report will be used as input to the Luvuvhu Letaba Reconciliation Study. Various disciplines from the study team will provide input to the Summary Report, which forms the key deliverable from this task. This task is to be completed early in February 2011.

6.3 TASK 2: PRELIMINARY SCREENING WORKSHOP

The list of possible future options as obtained from Task 1 (Summary report) will be presented to the SSC at this screening workshop. This will provide the opportunity for the SSC members to take note and evaluate the possible future options and to add additional options. All the options will however go through a screening process to eliminate the non-viable or impractical options. The purpose of the screening workshop is to provide the list of schemes or intervention options that need to be investigated as part of this study. This task is scheduled for completion by March 2012. PvR is the task leader.

6.4 TASK 3: HYDROLOGICAL ANALYSIS

The TOR requested a full hydrological study. New updated natural flow sequences will be provided for each of the selected sub-catchments within the study area. This task is expected to be completed in July 2012 and results will therefore not be available for the preliminary strategy that needs to be completed within the first year. The existing hydrology will therefore be used for the preliminary strategy. The hydrology task has two deliverables, the Rainfall report and the Hydrology report. BH is the task leader for this task.

PvR stated that an important source of data for the study is the Validation and Verification Study. Results from this study are required to provide vital input to the hydrology, demands and returns flows as well as for the system analysis task. IN indicated that the validation component of this study is completed, but the verification still need to be done. He further reported that Schoeman and Venote is the PSP that carried out the work and relevant information can be obtained from them through Ms Doris Maumela of Instructional Establishment in DWA Limpopo Regional office. BH & DM

6.5 TASK 4: WATER REQUIREMENTS AND RETURN FLOWS

This task will focus on collecting and processing of the water requirement and related data for the different water use categories. The task will feed into the preliminary strategy but also has an activity in the second phase of the project in support of the final strategy. The deliverables for this task will be a Water Requirement and Return Flow report as well as a related database. The task leader is DM and the bulk of this task is expected to be completed by May 2012 with some final refinements by September 2013.

TN indicated that the results from the All Towns Reconciliation Study are not yet in a usable format as more input is still required. The population data however, is good and can already be used.

6.6 TASK 5: WATER CONSERVATION AND DEMAND MANAGEMENT

This task will review the contents of water conservation and water demand management strategies as developed by key Water Services Authorities in the study area. A realistic estimate will then be made of the potential savings, cost implications and programme of implementation. The main deliverables will be demand management scenarios with alternative water use projections and a report describing the assumptions and results. This task is slightly lagged, as it requires input from Task 4 and is expected to be completed by middle of May 2012. WW is the task leader. The inputs on irrigation will be given by JR.

6.7 TASK 6: WATER RE-USE

This is a relative small task and follows on Tasks 4 & 5. The purpose is to identify and conceptualise re-use options within the study area. The task should be completed by the end of May 2012. TC is the task Leader.

6.8 TASK 7: INVASIVE ALIEN PLANTS

Significant areas of invasive alien plants do occur in the study area. These areas and the effect on the runoff from these areas were not fully captured and modelled in the latest studies executed on the Luvuvhu and Letaba catchments. This task requires input from Task 3, mainly rainfall data. The purpose is to determine the extent of Alien Invasive Plants (AIP) and the effect of AIP on the runoff and water availability from the catchment. This will be documented in a chapter of the hydrology report (Task 3). This task is estimated to be completed by the end of April 2012. BH is the task leader.

6.9 TASK 8: WATER QUALITY

The water quality task will be focused on options, interventions and hotspots in the study area. Observed water quality data will therefore be used to determine the water quality profile, pollution sources, the contribution from the sources, mitigation measures and water quality related issues. The main deliverable from this task is a Water Quality Assessment Report, which need to be delivered by June 2013. TC is the task leader.

6.10 TASK 9: RESERVE REQUIREMENT SCENARIO ANALYSIS

No primary work will be carried out by the PSP. Available Ecological Water Requirement (EWR) data will be sourced from the D:RDM. The impact of the EWR on the available yield will be determined and results documented in the Yield analysis report (see Task 12) and can therefore only be completed in January 2013. The Task leader is PvR.

6.11 TASK 10: GROUNDWATER UTILIZATION SCENARIOS

Groundwater is already utilized in the area and the implication thereof on the surface water availability will be considered as part of the hydrology task. This task also has an activity in the second phase of the project in support of the final strategy. The Groundwater Assessment and Utilisation Scenarios Report (main deliverable) will be delivered later in the study by approximately July 2013. The Task leader is KS.

6.12 TASK 11: HONOURING INTERNATIONAL OBLIGATIONS

It is important to take into account international obligations as both the Luvuvhu and Letaba Rivers flow through the KNP into Mozambique and then into Massingir Dam. This task will be completed before the preliminary strategy around June 2012. The deliverables will be a detailed appraisal of the international water-related aspects of the WMA with related input into the Main Strategy Report. The task leader is DM.

6.13 TASK 12: YIELD ANALYSIS (WRYM)

The Water Resources Yield Model (WRYM) will be configured for high resolution modelling which means that the hydrology also needs to be at the same level of detail. The hydrology will not be available in time for the preliminary strategy and therefore existing WRYM setups will be used to provide results as input to the preliminary strategy. Updated yield results will be determined for all major dams. Historic, long-term stochastic and short-term stochastic yield will be determined. Water balances for different scenarios will be prepared. The main deliverables will be the Yield Analysis Report, yield reliability curves and WRYM data sets. The WRYM task is scheduled for completion by end of Jan 2013. The Task leader is HGM.

6.14 TASK 13: WATER QUALITY MODELLING

The calibration of the WQT model was excluded from the scope of work on request of DWA. Various water quality related assessments will however be carried out as part of this task. The deliverable will be a chapter on the methodology and findings from this task in the Water Quality Assessment Report. This task is to be completed shortly after Task 12, in February 2013. The task leader is TC.

6.15 TASK 14: PLANNING ANALYSIS (WRPM)

The planning analysis will provide projections of drought restrictions as the demand increases over time into the future (risk analysis). This task requires input from Task 12 and will provide vital input to tasks 15, 17 & 18 as well as to the final strategy. The deliverables include the Planning Analysis Report as well as the electronic data defining the Water Resource Planning Model (WRPM) system configuration. The WRPM analysis is expected to be completed in August 2013. The Task leader is HGM.

6.16 TASK 15: REVIEW SCHEMES AND UPDATE COST ESTIMATES

Dolf Smook (task leader) and his team will evaluate the physical engineering solutions and combination of schemes. There are two periods of activity on this task, the first to provide input to the preliminary strategy and the second during the last 6 months in 2013, feeding into the final strategy. The deliverable from this task is the Water Supply Schemes Report and the relevant input to the Reconciliation Strategy Report. This task is scheduled for completion by December 2013.

6.17 TASK 16: REVIEW OR ASSESS SOCIAL AND ENVIRONMENTAL IMPACTS

This task relates to the options and schemes evaluated in Task 15. The task will assess the socio-economic impact of these schemes as well as the impact on the environment. The deliverable from this task will be a chapter in the Water Supply Schemes Report from Task 15. The task is scheduled for completion by December 2013. FH is the task leader.

6.18 TASK 17: ASSEMBLY OF INFORMATION AND FORMULATION OF SCENARIOS

This is the task were all inputs come together. The final screening workshop and Task 17 will provide the main input to the final strategy document. There are two periods of activity on this task, the first to provide input to the preliminary strategy and the second to provide the final strategy. This task will be completed towards the end of the study, around June 2014. The main deliverables are the Preliminary Reconciliation Strategy Report and the final Reconciliation Strategy Report, each with its own Executive summary. PvR is the task leader.

6.19 TASK 18: FINAL SCREENING WORKSHOP

Inputs from Task 17 will be used to prepare a starter document for this workshop. The workshop will provide the opportunity for stakeholders to share their views and to provide their agreement on the most favourable future reconciliation options. Deliverables from this task include the workshop starter and proceedings documents and a list of options and schemes to include in the strategy. This should be ready by June 2014. PvR is the task leader.

6.20 TASK 19: STAKEHOLDER ENGAGEMENT AND PUBLIC PARTICIPATION

One Public meeting, eight Strategy Steering Committee meetings and approximately thirty Study Management Meetings (6 weekly) are planned. Where possible the Strategy Steering Committee meetings will be coordinated with the workshops. The Public meeting is planned towards the end of the study. Communication to the public will take place through newsletters during the study period.

TN agreed that some of the meetings and workshops could be linked. It might also be viable to link up meetings with those of current studies or projects in the study area. He further commented that the program looks acceptable. During the course of the study, other requirements might come up from local government that needs some adjustments to the program or tasks. The overall budget will however remain the same.

PvR suggested that all stakeholders be invited to the first stakeholder meeting (between a 100 to 150 people). The aim is to form the Strategy Steering Committee (SSC) at this meeting. The responsibilities of the Steering Committee will be explained at this meeting and stakeholders will be given the opportunity to nominate persons for the Steering Committee. AJb will prepare a list of organisations and people to be invited for consideration by TN. This task will only be completed by the end of the study. AJb

7. STUDY MANAGEMENT (TASK 20)

7.1 ADMINISTRATION

- The contract was signed by PvR and was delivered to DWA for signature.

- All hourly rates listed in the proposal were approved without any changes. There might be additional team members that need to be approved. Requests and information on such persons must be sent through to HGM. PSP

- TN expressed the need for training of DWA personnel on Water Resources and related modelling as part of the study. Opportunities of savings in costs from other tasks (i.e. reduced number of meetings) should be considered to make funds available for training.

7.2 PROGRESS MEETINGS AND DATES

It was proposed that the PM and SMT meetings be held in Pretoria as the general arrangement, however, certain of the meetings can be held in Polokwane.

Possible dates for the next SMT meeting are 1, 2, 7 14 & 15 November 2011.

The first Strategy Steering Committee / Stakeholder meeting is planned for 23 November or 1 December 2011. AJb and TN will liaise to finalise the selection of the date. AJb / TN

7.3 PROGRESS REPORTS

- Each invoice need to be accompanied by a brief progress report, indicating the work carried out that relates to the invoice. HGM
- An overall progress report to be provided at each SMT meeting. HGM
- A website will be available to populate with information, newsletters and reports as the study progresses AJb

8. GENERAL

PvR requested if DWA could assist with the evaluation of flow gauging stations in the study area, as is generally the case before the execution of hydrology studies. It was suggested that the PSP contact Jakkie Venter from the regional office in this regard. BH

TN informed the PSP that the standard DWA presentation template must be used for any presentations related to the study. It was also indicated that PSP logos are not allowed on the reports or presentations as per the latest DWA policies. The title page in the report can be used to include reference to the PSPs

TN stressed the importance of the study as a high profile planning initiative in the study area and highlighted that the PSP will have to assist in preparation of communication material from time to time.

9. NEXT MEETING

Date to be finalized based on dates given under item 7.2 HGM

10. CLOSURE

TN thanked everyone attending the meeting and closed the meeting.

Minutes certified as correct and final

PSP Study Leader	Date	DWA Study Leader	Date

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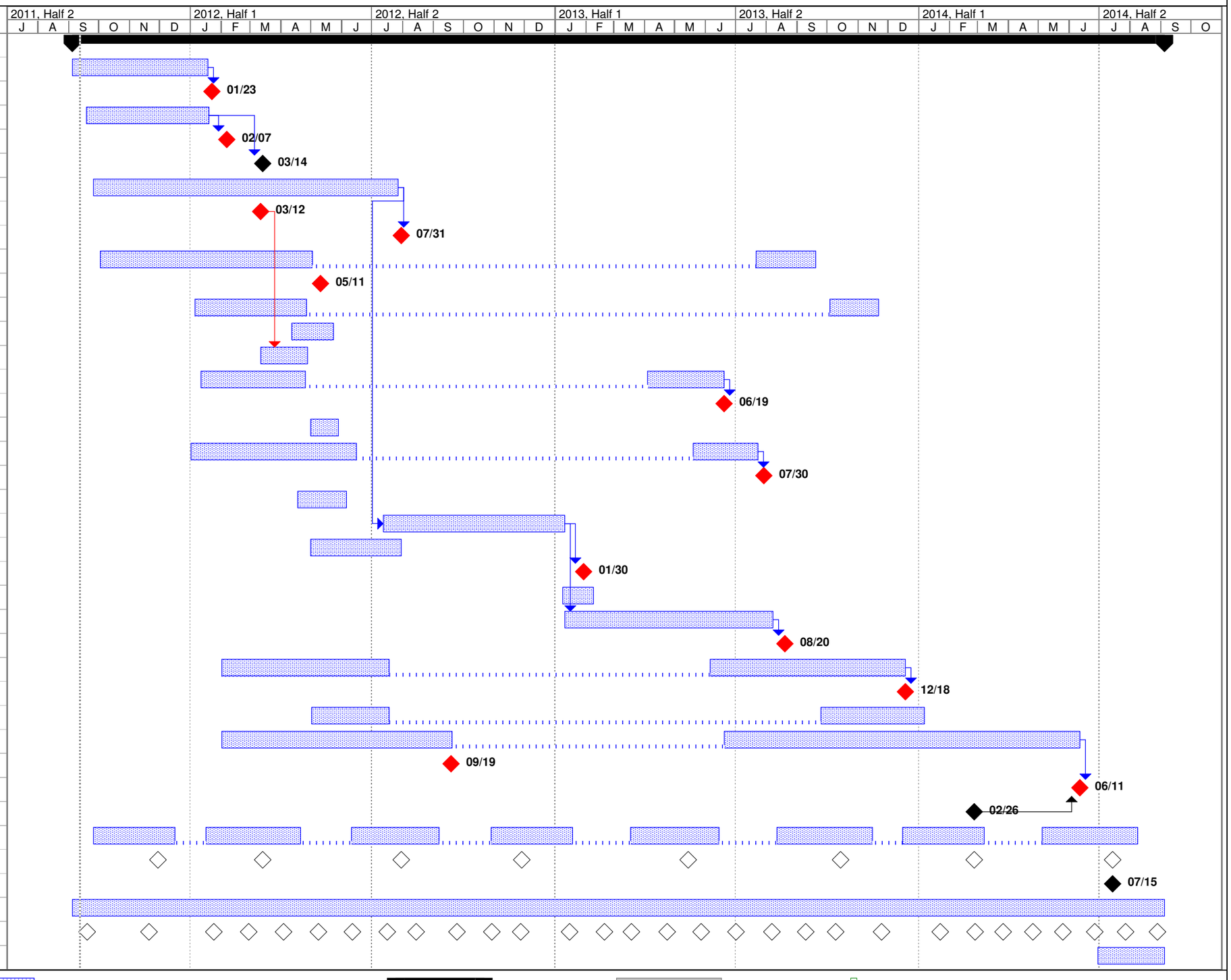
MINUTED BY: HG Maré (with input from Project team Members)

Appendix A

Study Programme

Development of a Reconciliation Strategy for the Luvuvhu and Letaba Water Supply System (WP 10395)

ID	Task Name
1	**Reconciliation Study for the Luvuvhu / Lethaba system**
2	Study planning and process initiation
3	Inception Report (1)
4	Task 1: Summary of previous and current studies
5	Summary of Previous and Current Studies (2)
6	Task 2: Preliminary screening workshop
7	Task 3: Hydrological analysis
8	Rainfall analysis report (4a)
9	Hydrology report (4b)
10	Task 4: Water requirements and return flows
11	Water requirements and Return Flow Report (3 and 5)
12	Task 5: Water conservation and demand management
13	Task 6: Water re-use
14	Task 7: Invasive alien plants
15	Task 8: Water quality
16	Water Quality Assessment Report (6)
17	Task 9: Reserve requirement scenarios analysis
18	Task 10: Groundwater utilization scenarios
19	Groundwater Assessment Report (7)
20	Task 11: Honouring international obligation
21	Task 12: Yield analysis (WRYM)
22	Yield analysis using old model setup
23	Yield analysis Report (8)
24	Task 13: Water quality modelling (WQT)
25	Task 14: Planning analysis (WRPM)
26	Planning Analysis Report (10)
27	Task 15: Review schemes and update cost estimates
28	Water Supply Schemes Report (11)
29	Task 16: Review or assess social and environmental impacts
30	Task 17: Assembly of information and formulation of scenarios
31	Preliminary Reconciliation Strategy Report (12a)
32	Final Reconciliation Strategy Report (12c)
33	Task 18: Final screening workshop
34	Task 19: Stakeholder engagement and public participation
35	**Stratecy Steering Committee Meetings - (eight)**
44	Public Meeting
45	Task 20: Study management
46	**Study Management Meetings - (thirty)**
77	Study termination



Project: Programme_v5
Date: Mon 11/09/12

Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

Appendix B

Presentation by TN

LIMPOPO PROVINVE WATER FOR DEVELOPMENT CONFERENCE 2011

Overview of the Current Status of Water in Limpopo

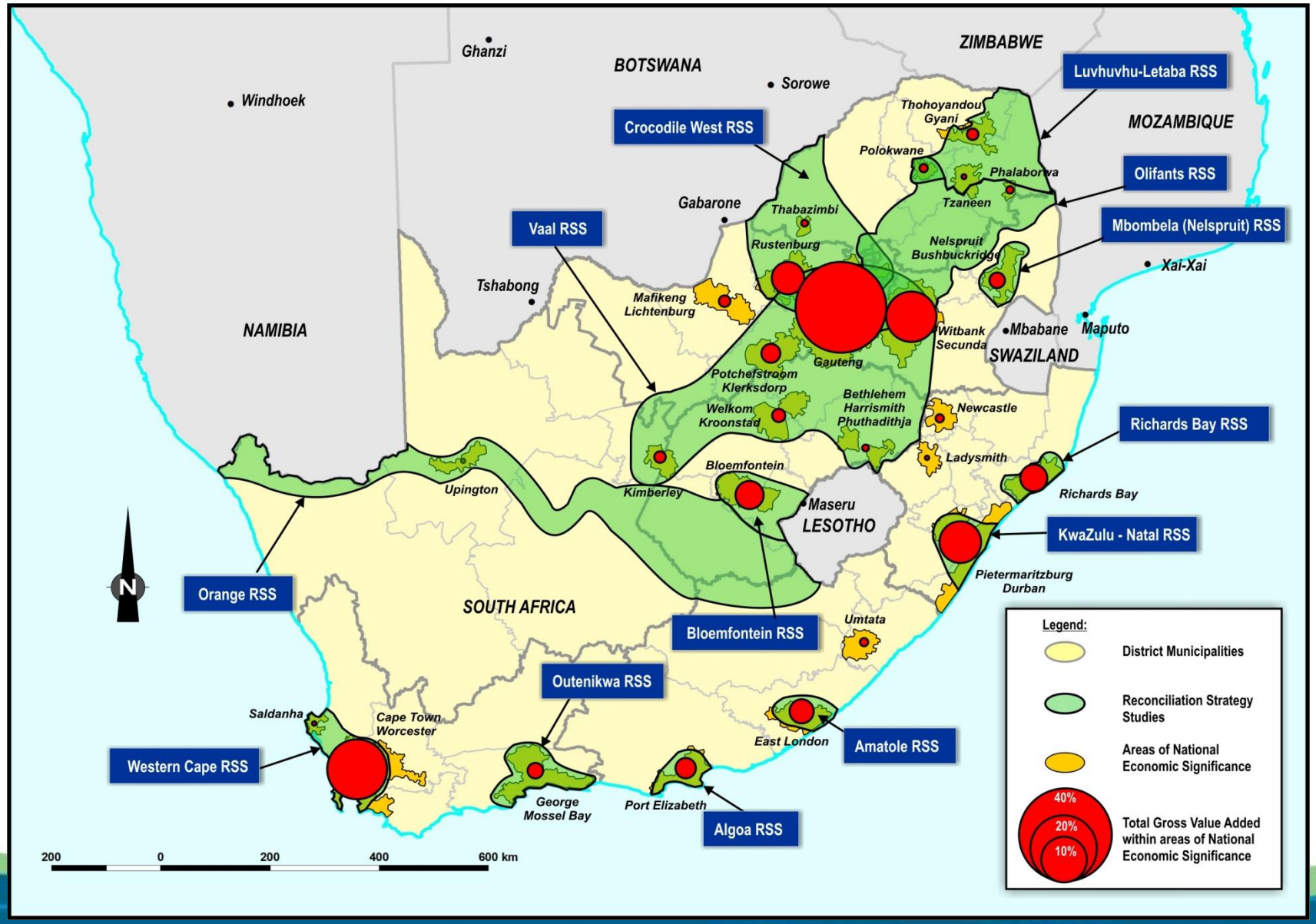
19 August 2011
Bela Bela

DWA Director General Acting: Mr. T. Balzar

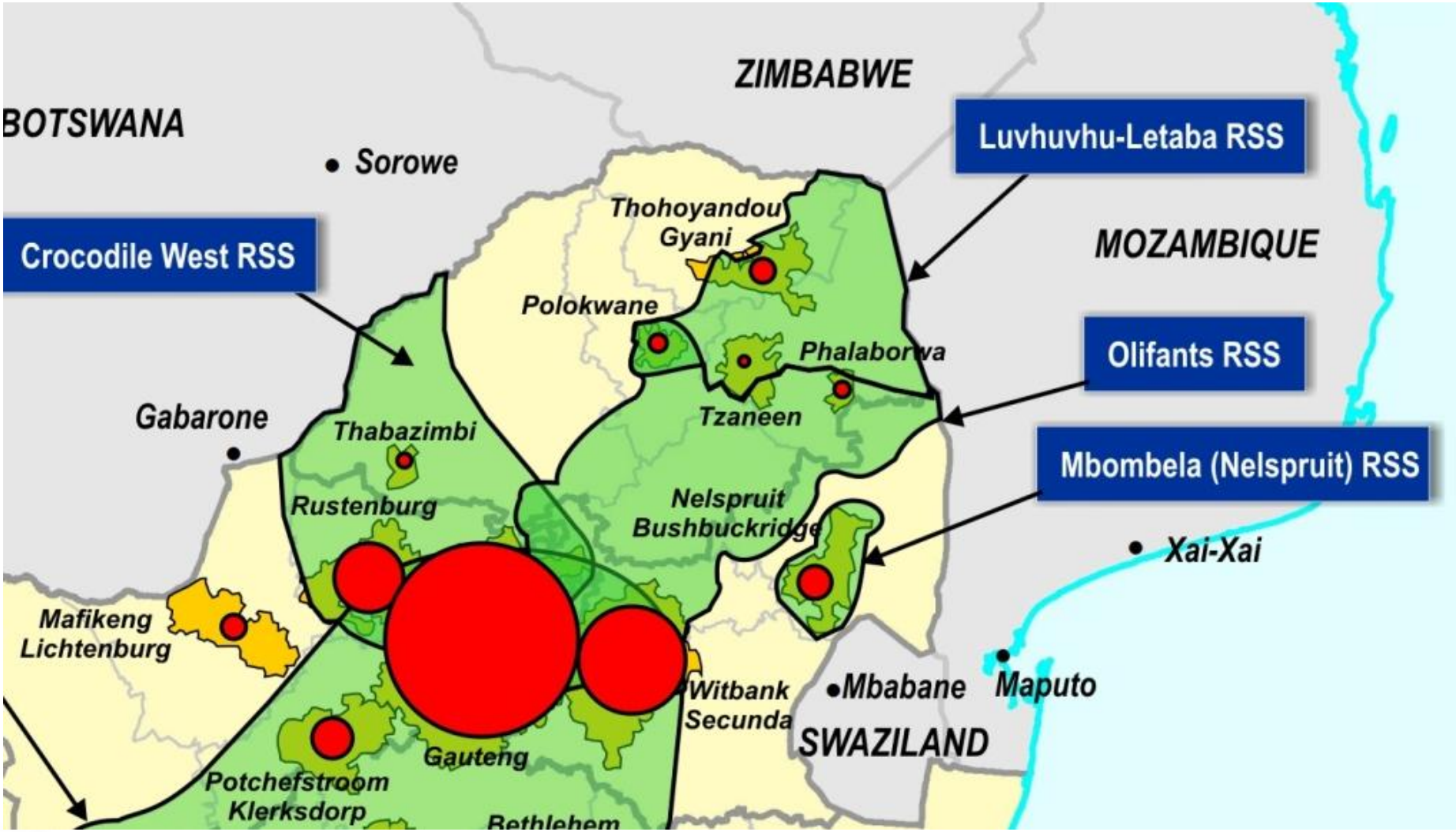
Reconciliation Strategy Studies

- Develop future water requirement scenarios in consultation with users
- Investigate all possible water resources and other interventions
- Investigate all possible methods for reconciling the requirements with the available resources
- Make recommendations for development and implementation of interventions

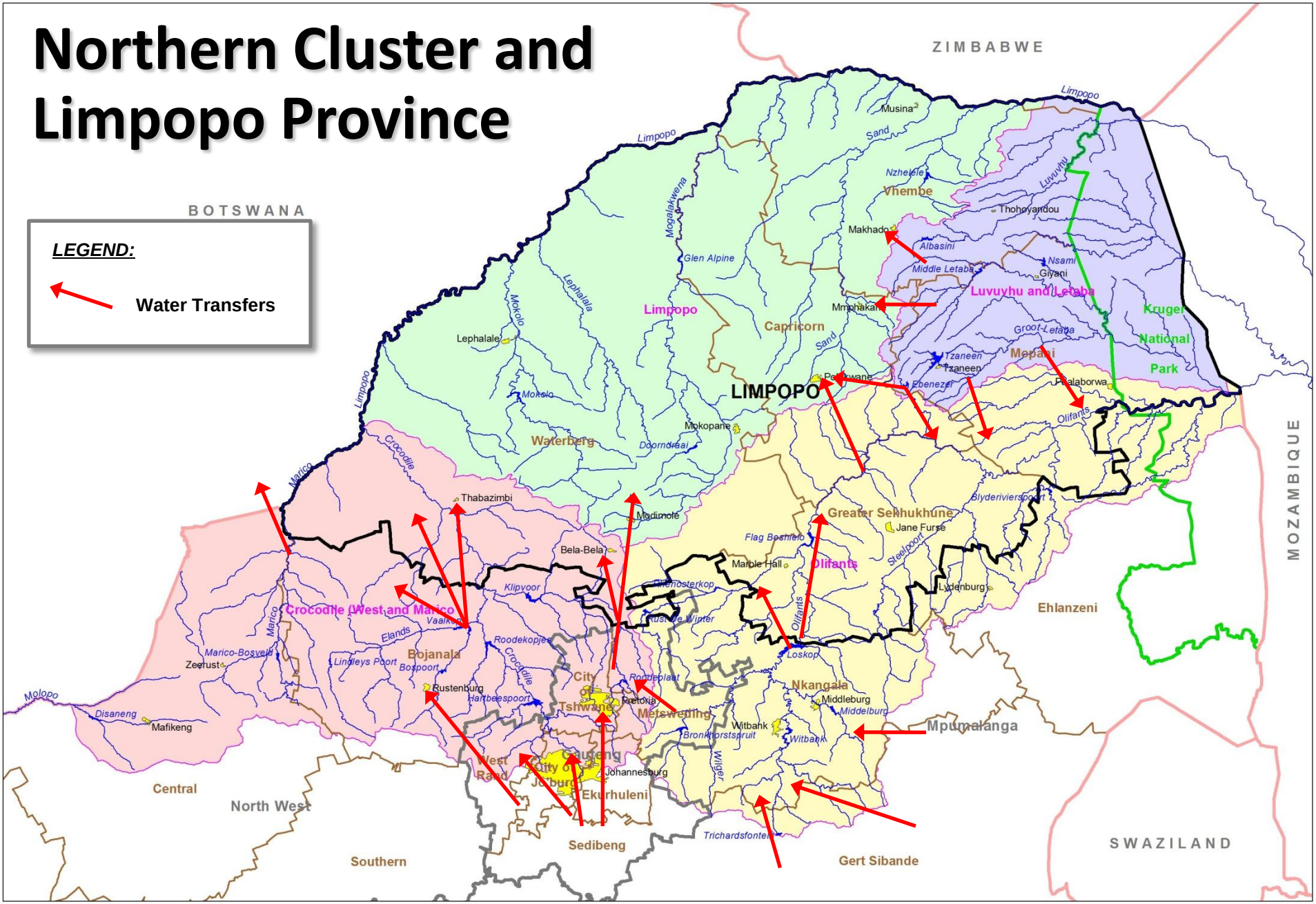
Water Reconciliation for major growth areas



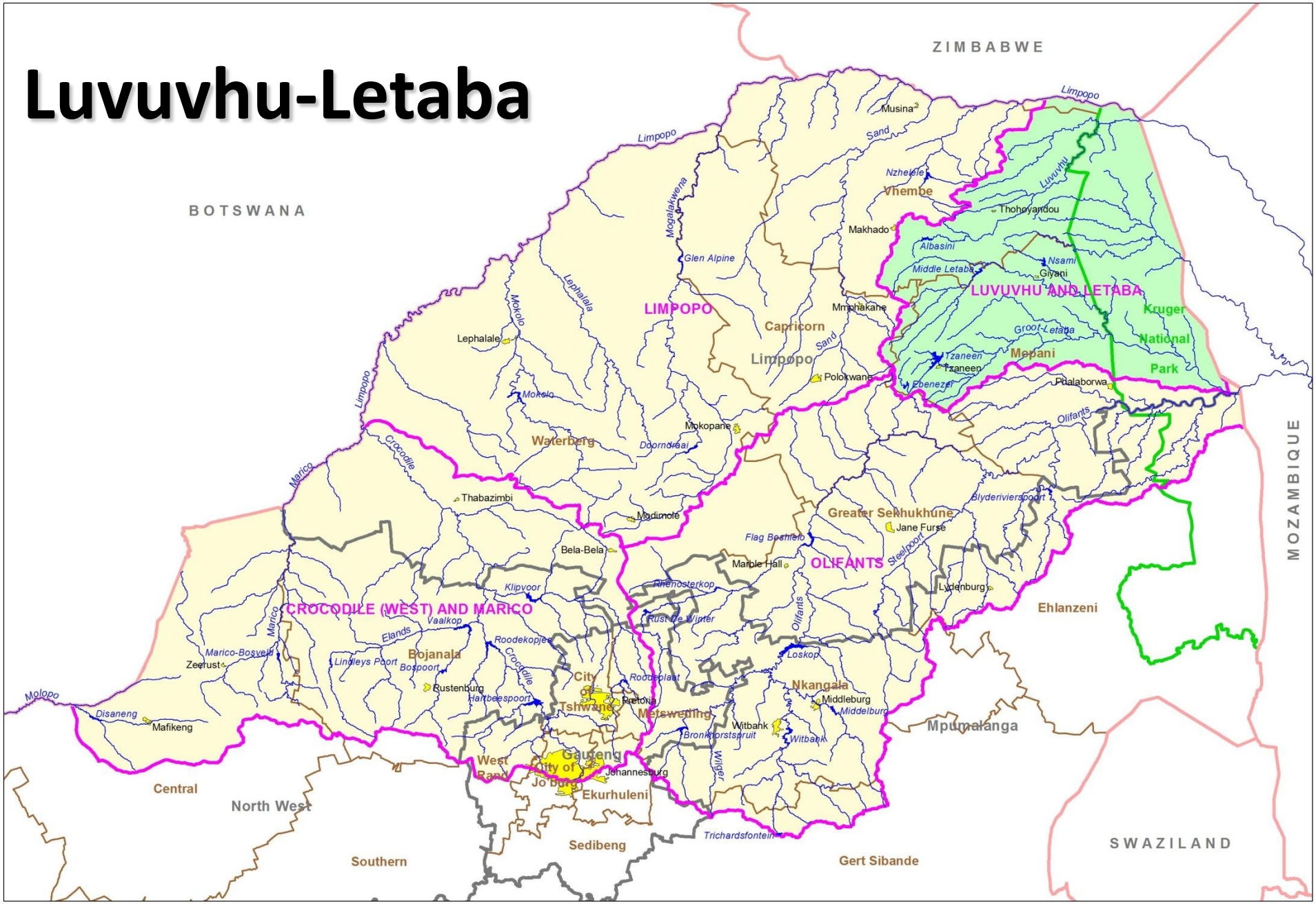
Water Reconciliation for major growth areas



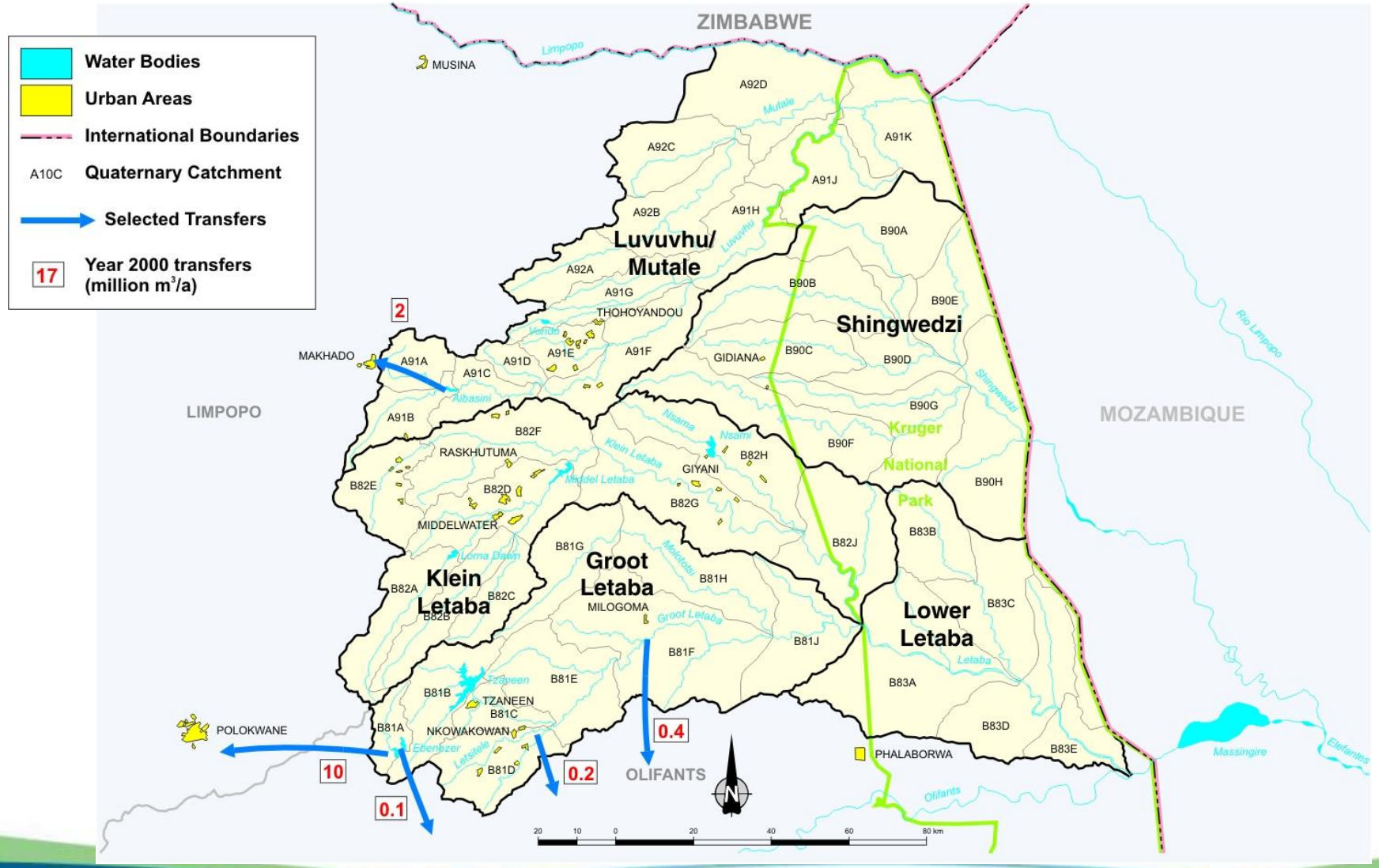
Northern Cluster and Limpopo Province



Luvuvhu-Letaba



Luvuvhu/Letaba WMA



Key Characteristics of the Luvuvhu and Letaba Water Supply System (1 of 2)

- Houses about 1.8 million people
- Thohoyandou, Tzaneen and Giyani the largest urban centres
- Approximately 80-90% population can be described as rural
- The Kruger National Park (KNP) occupies approximately 35% of the Water Management Area (WMA)
- Main economic activities: Livestock farming, irrigation and growing mining operations
- Further economic growth at urban centres (Thohoyandou, Makhado, Tzaneen, Giyani)
- Rural population scattered in numerous villages – little/medium growth foreseen

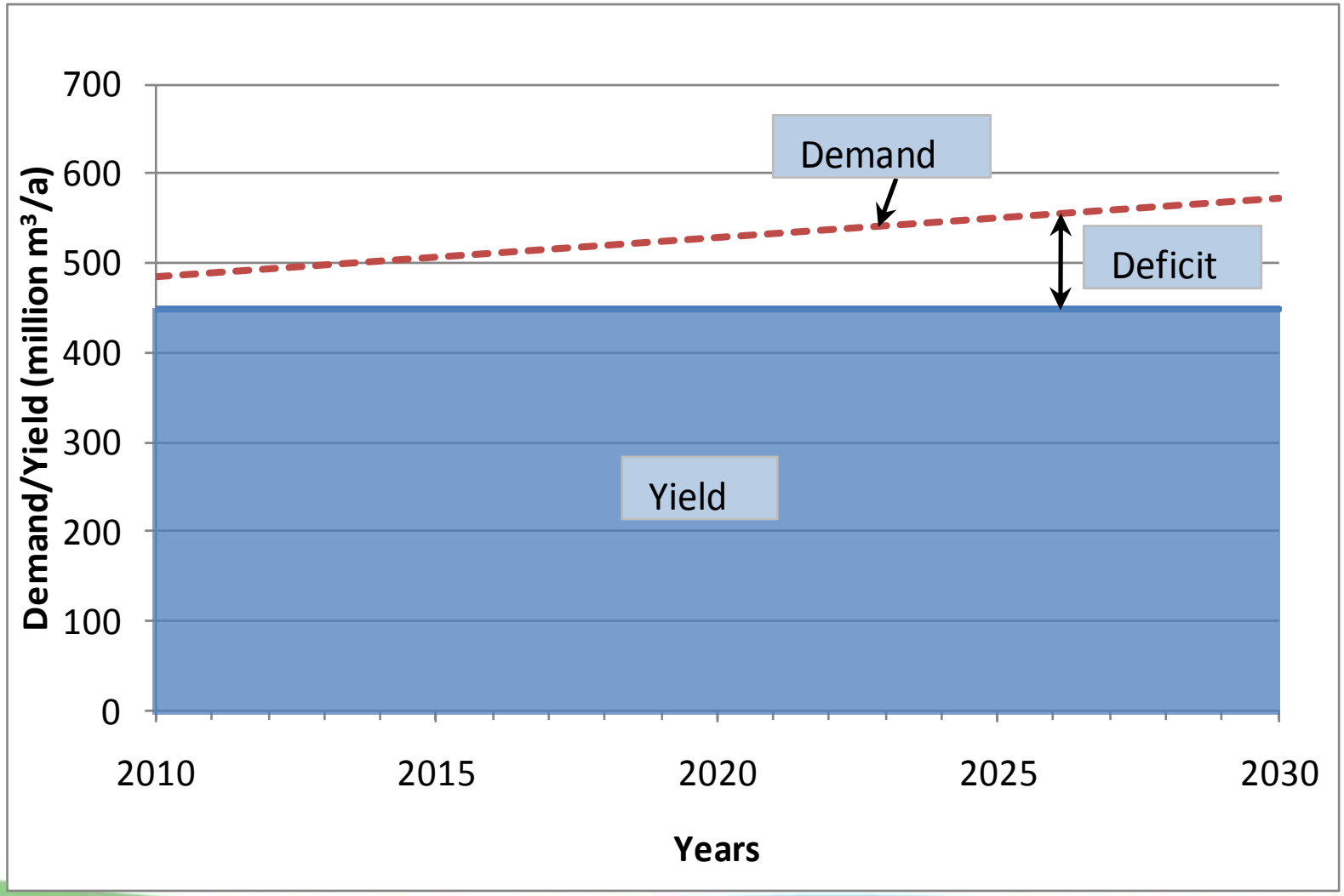
Key Characteristics of the Luvuvhu and Letaba Water Supply System (2 of 2)

- Capricorn DM and Vhembe DM get water from this WMA
- Regulation is provided by the Middle Letaba, Ebenezer, Tzaneen, Nandoni, Albasini, Vondo and Damani Dams
- There are various competing water users for a limited resource
- One of the driest regions in the country, Fully developed system and serious water supply problems exacerbated by a series of droughts

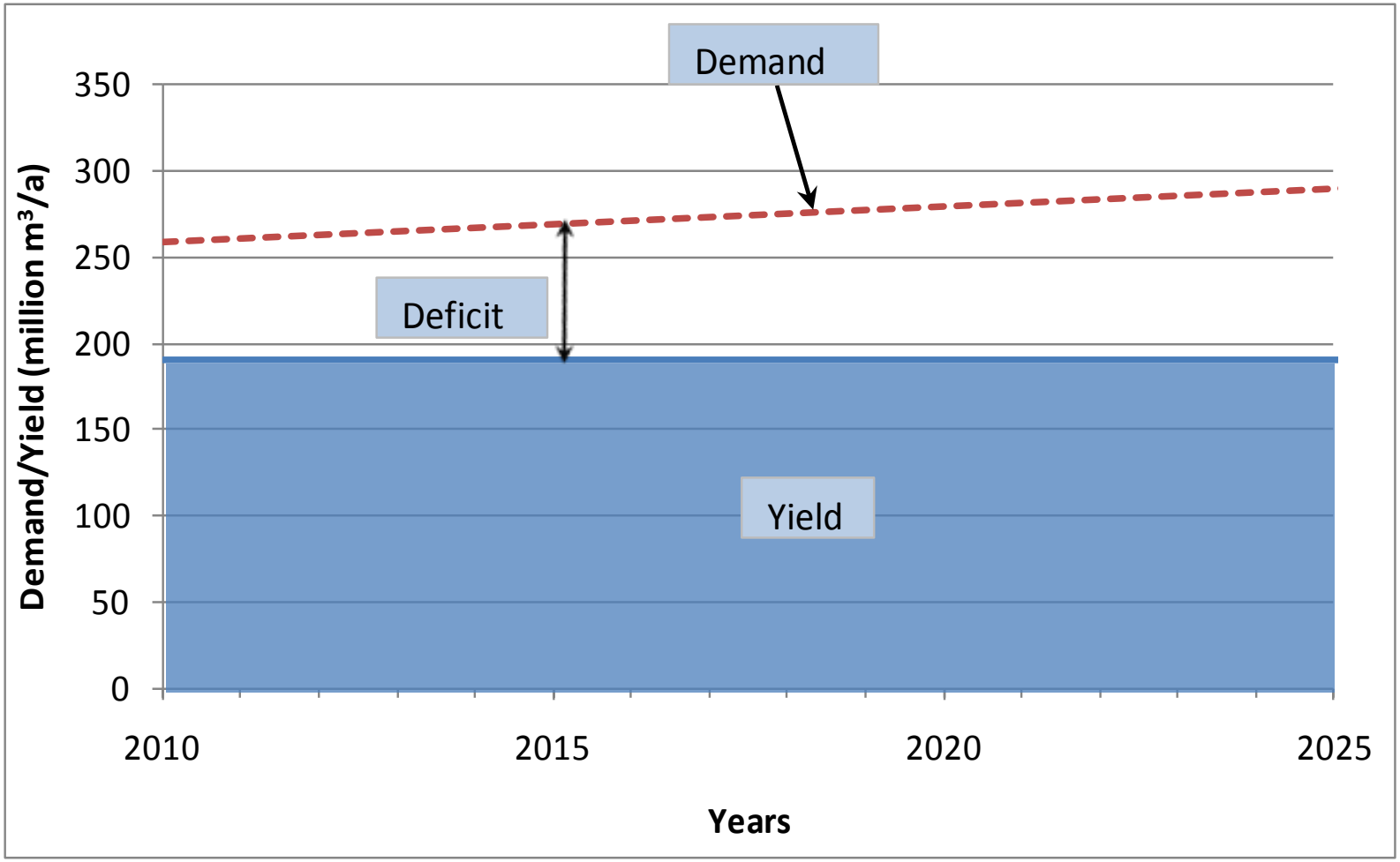
Luvuvhu and Letaba Water Resource Perspective

- Inter-catchment transfers
- Invasive alien vegetation
- Water allocation reform
- Rivers flows into the Limpopo River basin - international implications
- Recently completed Nandoni Dam provides more water for domestic supply, for additional irrigation and for Ecological Reserve
- Groundwater offers further potential to augment surface water resources for rural domestic supply and small scale irrigation

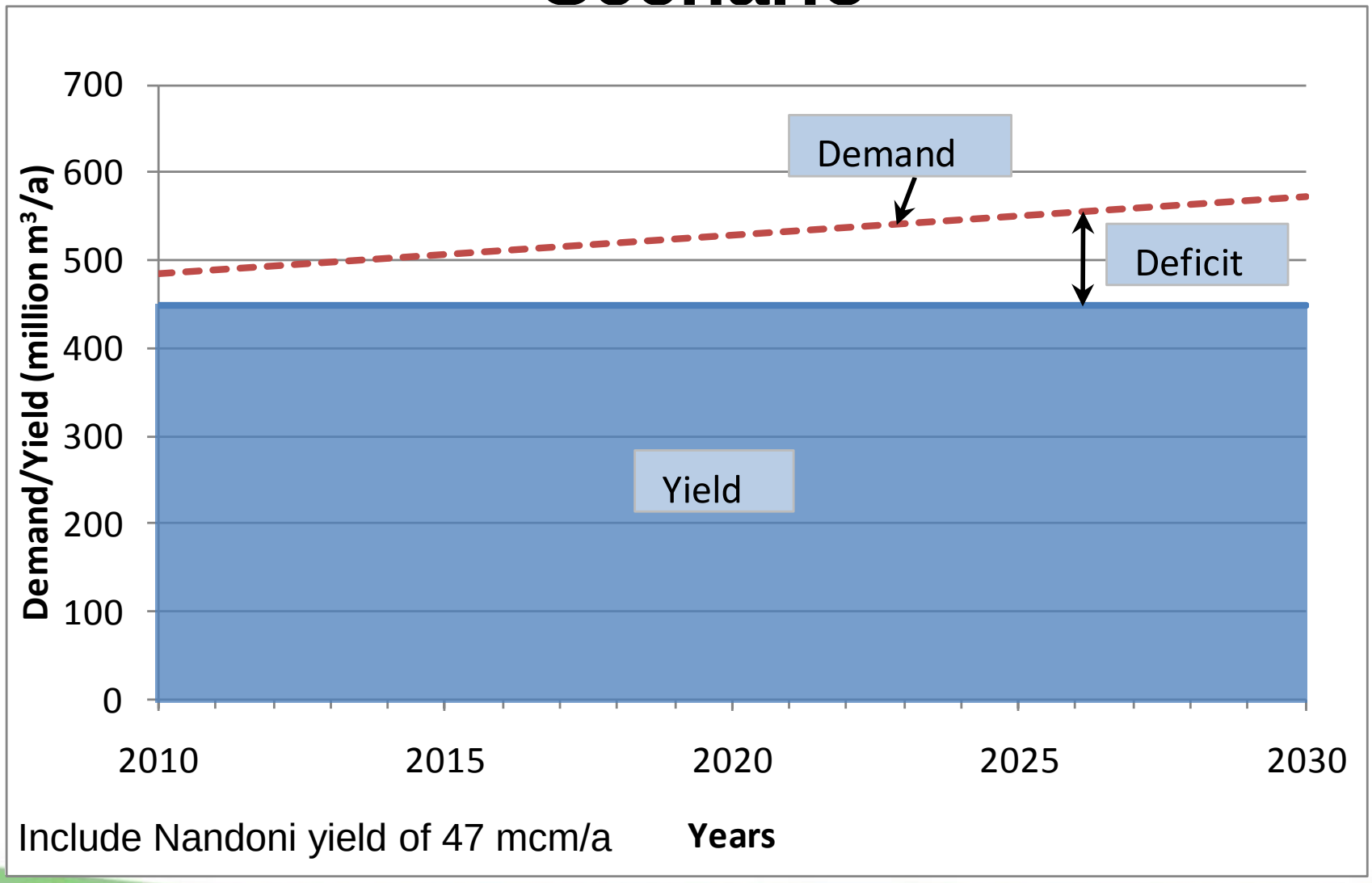
Luvuvhu Letaba Base/Current Situation Scenario



Letaba Base/Current Situation Scenario

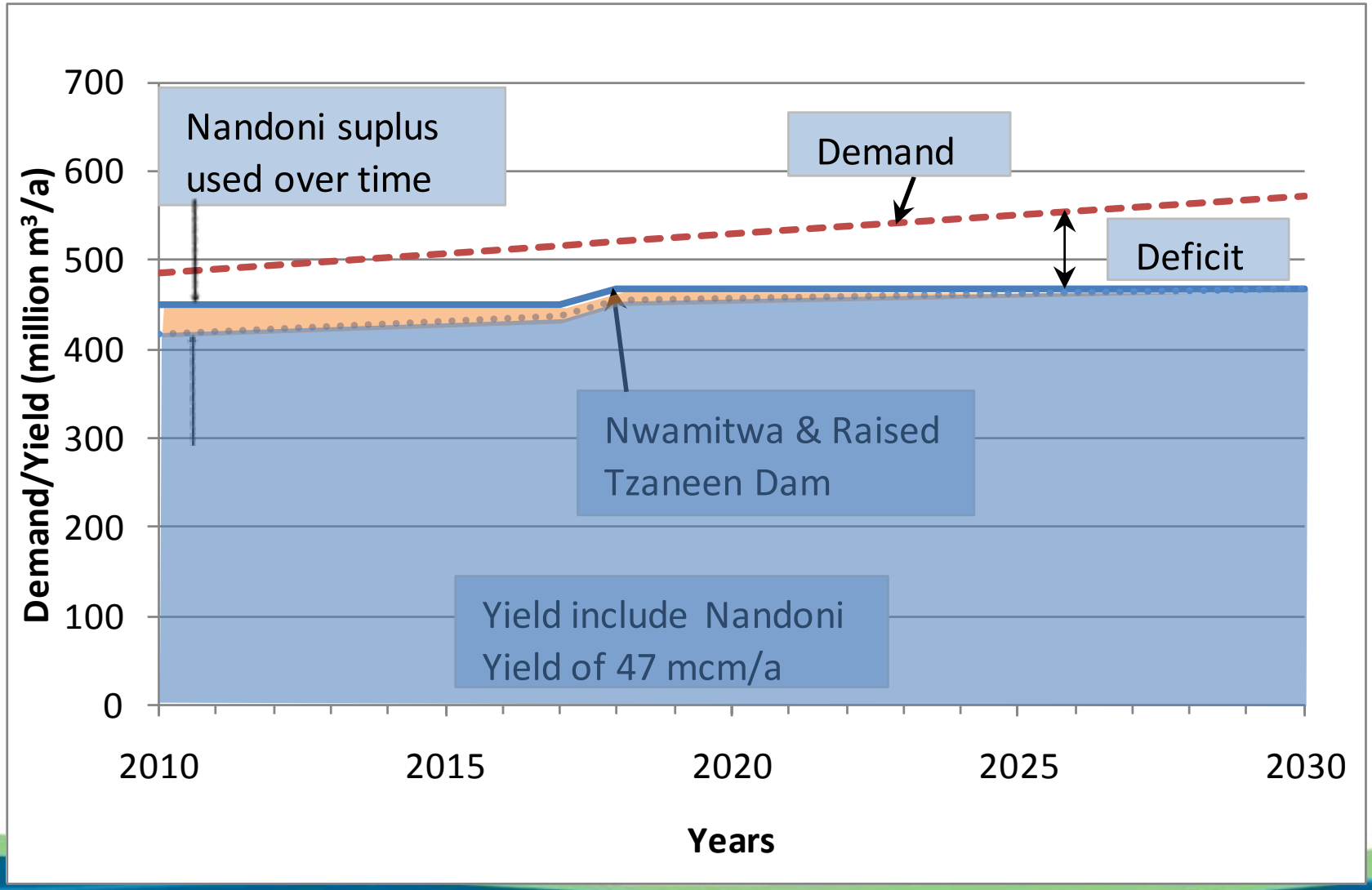


Luvuvhu Letaba Base/Current Situation Scenario



Include Nandoni yield of 47 mcm/a

Luvuvhu Letaba Base/With raised Tzaneen & Nwamitwa dams



Luvuvhu Letaba WMA Water Balance

Description (all units in million m^3/a)		Year 2010	Year 2030
Yield	Local yield	450	450
Available Water	Transfer in	0	0
	Total	**450**	**450**
Water requirements	Local requirements	473	551
	Transfers out	13	23
Balance		**-36**	**-124**

Luvuvhu Letaba WMA Water Balance

Description (all units in million m^3/a)		Year 2010	Year 2018	Year 2030
Yield	Local yield	450	468	468
Available Water	Transfer in	0	0	0
	Total	**450**	**468**	**468**
Water requirements	Local requirements	473	504	551
	Transfers out	13	17	23
	Total	**486**	**521**	**574**
Balance		**-36**	**-53**	**-106**

Nwamita Dam and raised Tzaneen Dam included from 2018

Possible Known Solutions Luvuvhu-Letaba

- The augmentation by Nandoni Dam can provide sufficient water to Thohoyandou area and part of Giyani until 2018
- Above includes an allocation of 10 million m^3/a to users in the stressed Middle Letaba River System
- The proposed Nwamitwa Dam and Raising of Tzaneen Dam.
- Comprehensive Strategy Solutions from This Reconciliation Study

Thank you