

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

Background Information Document - 2

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water affairs

Department:
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PURPOSE OF THIS DOCUMENT

This background information document (BID) provides information on the development of a Reconciliation Strategy for the Luvuvhu and Letaba Water Supply System and provides a summary of the information that will be presented at the Preliminary Screening Workshop on 25 April 2012.

A Reconciliation Strategy identifies, prioritises and confirms the interventions required to reconcile the water requirements with the available water resources in a catchment or water system at current and future development levels.

You are invited to contact the public participation office or the technical team at the addresses provided below for more information about this study and to find out when the next meeting will be held.

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STUDY AREA

The Luvuvhu and Letaba Water Supply System is located in the north-east of the Limpopo Province with Zimbabwe to the north and Mozambique to its east. Towns in the study area include Thohoyandou, Giyani and Tzaneen. The Kruger National Park comprises about one third of the study area.

The water resources in this area can in general be described as fully utilised. The demand for water from the Letaba River already exceeds its yield capability. Regulation of water flow in the Letaba system is mainly provided by Middle Letaba, Ebenezer and Tzaneen Dams. The Luvuvhu River has the Nandoni, Albasini, Vondo and Damani dams which will soon be fully utilised. The major rivers in the area are the Luvuvhu, Letaba, and Shingwedzi rivers which all flow in an easterly direction through the Kruger National Park and into Mozambique.

SUMMARY OF WORK DONE IN STUDY

The study first compiled a summary report of information from previous studies with the aim of preparing for the first screening workshop as well as to assist in the refinement of the scope in the inception report.

The Luvuvhu Letaba Water Supply System has been the subject of many studies from different perspectives, and it is essential to collate and understand the approaches as well as the assumptions used in the previous studies. This is necessary to be in a position to undertake a synthesis of all available information and adding perspectives on whether the previously identified interventions are suitable for further consideration and assessment in this study.

The summary report also lists all relevant recommendations from available reports and current water resource management processes. This task was completed in the beginning of April 2012.

As part of the Literature Review Report, summary tables of potential future schemes were compiled from available information. This information forms the basis of the Preliminary Screening Workshop.

PURPOSE OF THE SCREENING WORKSHOP

The purpose of the Preliminary Screening Workshop is to provide an opportunity for stakeholders to evaluate the intervention options presented by the study team and to add additional options where appropriate.

Stakeholders have to share their views and also provide their agreement on the options to consider for further evaluation and the level of further investigations that is required.

After the workshop, a summary of the main topics of discussion will be distributed which will define the augmentation options to be investigated. This document in turn will feed into the Preliminary Strategy Report.

SUMMARY OF AUGMENTATION OPTIONS

Several potential augmentation options for the Luvuvhu and Letaba Water Supply System were identified from the summarised information in the Literature Review Report. These options are tabled below according to the different catchments in the study area:

Table 1.1: List of intervention options in Luvuvhu Main Catchment

No	Option	Comments
Lu1	Supply to Louis Trichardt from Albasini and smaller resources	Other sources include groundwater, Latonyanda Dam, reduction in irrigation scheme and upstream irrigation abstractions.
Lu2	Supply to Louis Trichardt from mainly Nandoni Dam	Reduce supply from Albasini, reduce irrigation system losses and improve supply to irrigation.
Lu3	Supply to Louis Trichardt from Nandoni and Albasini dams	Basically a combination of options 1 and 2.
Lu4	Groundwater utilisation Nandoni supply area	Reduce or eliminate supply from Nandoni to areas with surplus groundwater resources and increase supply to areas of over exploitation of groundwater.
Lu5	Raising of Vondo Dam	Will be able to supply a larger portion of the higher lying parts of Thohoyandou and reduce the load on Nandoni.
Lu6	Mid Dzindi Dam	Located in Duthuni River upstream of Nandoni. Mainly operational benefit.
Lu7	Latonyanda Dam	Move yield upstream. Operational benefits mainly. Forms part of options Lu1 & Lu3.
Lu8	Paswane Dam	Located on the lower end of the Mutshindudi River. Good future option to reduce load on Nandoni by supplying the lower Nandoni supply area as well as part of the ecological water requirements (EWR) for the Kruger National Park (KNP).
Lu9	Xikundu Dam	Located downstream of the confluence of the Mutshindudi and Luvuvhu rivers. Possibility of a larger storage dam in future. Similar advantage as option Lu8.

Table 1.2: List of intervention options in Mutale Catchment

No	Option	Comments
Mu1	Water conservation and demand management (WC/WDM)	WC/WDM in domestic and agricultural sector.
Mu2	Groundwater Development	The total net potential increase in the utilizable water from groundwater is about 2 million m ³ /a.
Mu3	A new dam on the Mutale River	The two most viable dam sites identified are Rambuda downstream and Tswera.
Mu4	Abstraction from the Limpopo River	Possibility for future coal mines in the north eastern part of the catchment.

Table 1.3: List of intervention options in Shingwedzi Catchment

No	Option	Comments
Sw1	Groundwater Development	Identification and development of additional groundwater to rural supply where shortages occur.
Sw2	Transfer of water from the Luvuvhu (Xikundu Weir & Nandoni Dam)	Part of the area is already supplied from the Luvuvhu River. This would mean a further extension of the supply network with focus on water from Xikundu Weir.

Table 1.4: List of intervention options in Groot Letaba Catchment

No	Option	Comments
GL1	Raising of Tzaneen Dam	Raising of spillway (labyrinth option). Yield increase 6 million m ³ /a (Already in planning).
GL2	Construction of Nwamitwa Dam	Embankment type dam of 30 m with a 143.8 million m ³ storage capacity (Already in planning).
GL3	Bulk Water Supply Infrastructure from Nwamitwa Dam	Potential supply area of the future Nwamitwa Dam and regional bulk water supply infrastructure to serve the rural settlements in the area.
GL4	Letsitele River Valley Dam (Hobson's Choice)	Dam of 33.5m with a storage capacity of 14.2 million m ³ /a.
GL5	Mulele Dam	Dam site on Molototsi River expected yield 8.6 million m ³ /a. Major drawbacks are high sediment and inundation of extensive areas under dry land crops. Possible to rather use for purposes of artificial groundwater recharge.
GL6	Groundwater development	Development of groundwater on a regional scale in conjunction with bulk water supply systems.

Table 1.5 List of intervention options in Middle and Klein Letaba Catchments

No	Option	Comments
MKL 1	Water Conservation and Water Demand Management	Implement WC/WDM measures to reduce water losses from the distribution infrastructure and to achieve more efficient water use.
MKL 2	Development of groundwater resources	To develop the under-utilised groundwater resource to augment the water resources in the area and reduce dependency on the overstressed surface water resource.
MKL 3	Replace Middle Letaba Dam to Nsami Dam canal with a pipeline	Losses need to be confirmed first.
MKL 4	Transfer Scheme from Nandoni Dam	Scheme is already in process.
MKL 5	Construction of new dam on Klein Letaba River	Located just upstream of confluence of Middle and Klein Letaba rivers. Two possible sites Majosi and Crystalfontein. Can be storage dams or diversion weirs to divert water into Middle Letaba Dam.
MKL 6	Remove/buy out all irrigation from Middle Letaba Scheme and reduce upstream irrigation	Yield from Middle Letaba Dam not sufficient to supply irrigation. Shortage on domestic demands is already experienced.

STAKEHOLDER ENGAGEMENT

Stakeholders

The identification of stakeholders in the study area will be an on-going process. Some of the stakeholders included in the database currently are the relevant government departments on national and provincial level such as the Department of Environmental Affairs and the Department of Agriculture, Forestry and Fisheries; municipalities; agriculture; conservation organisations; community representatives and civil society.

Stakeholders will continue to be informed of progress with the study through a newsletter and will be asked for their inputs on an on-going basis. The DWA website for this study (www.dwa.gov.za/Projects/Luvuvhu/default.aspx) can also be visited for additional information regarding this study.

Study Steering Committee

Stakeholders representing specific sectors of society (e.g. agriculture, conservation, civil society as well as departmental officials) have been identified and asked to serve on a Study Steering Committee (SSC) for the duration (36 months) of this project. The SSC members will oversee the study and provide strategic advice and guidance.

