

Incorporating WOCAT/LADA tools in the Ntabelanga dam land rehabilitation project in South Africa

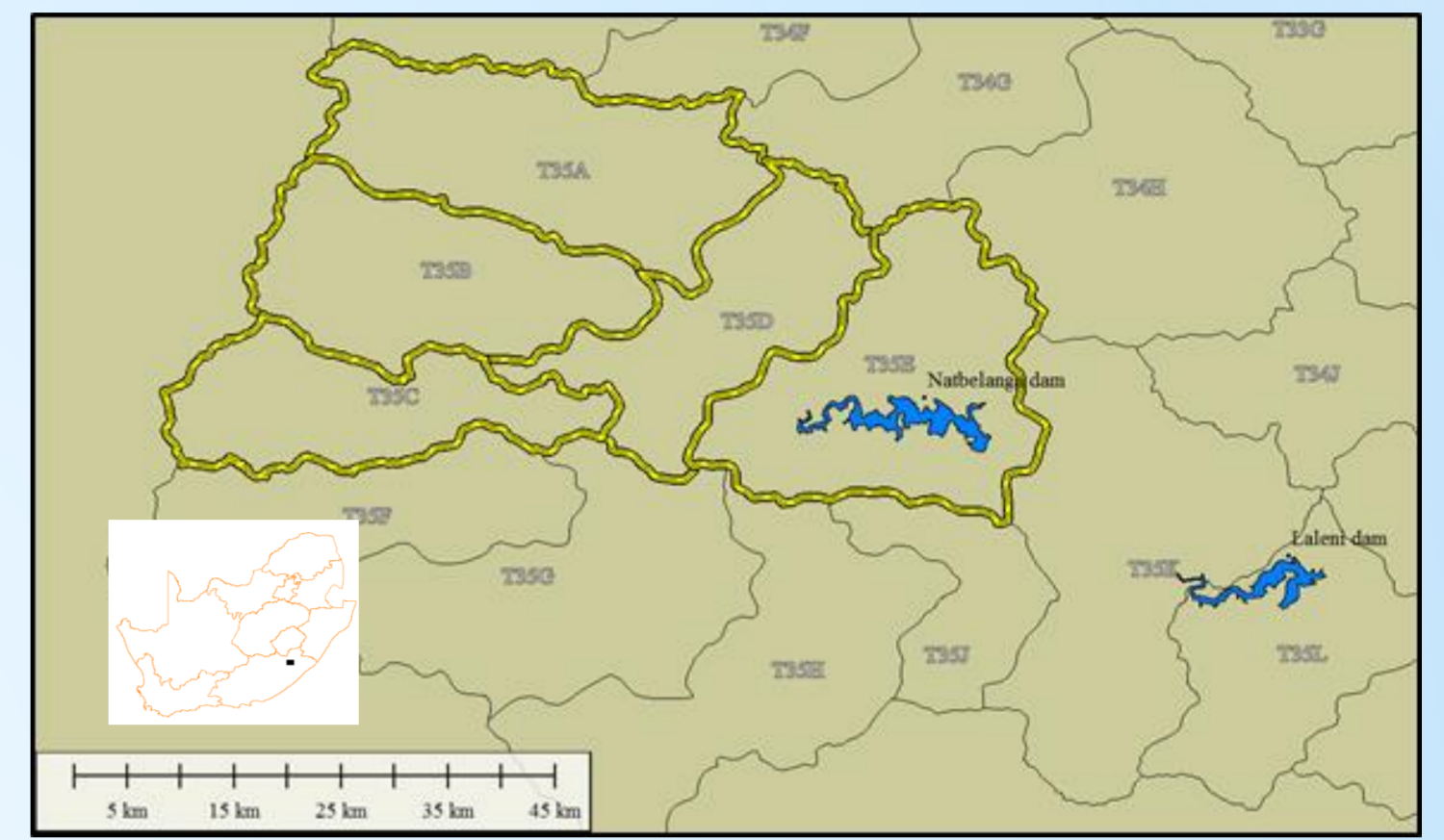


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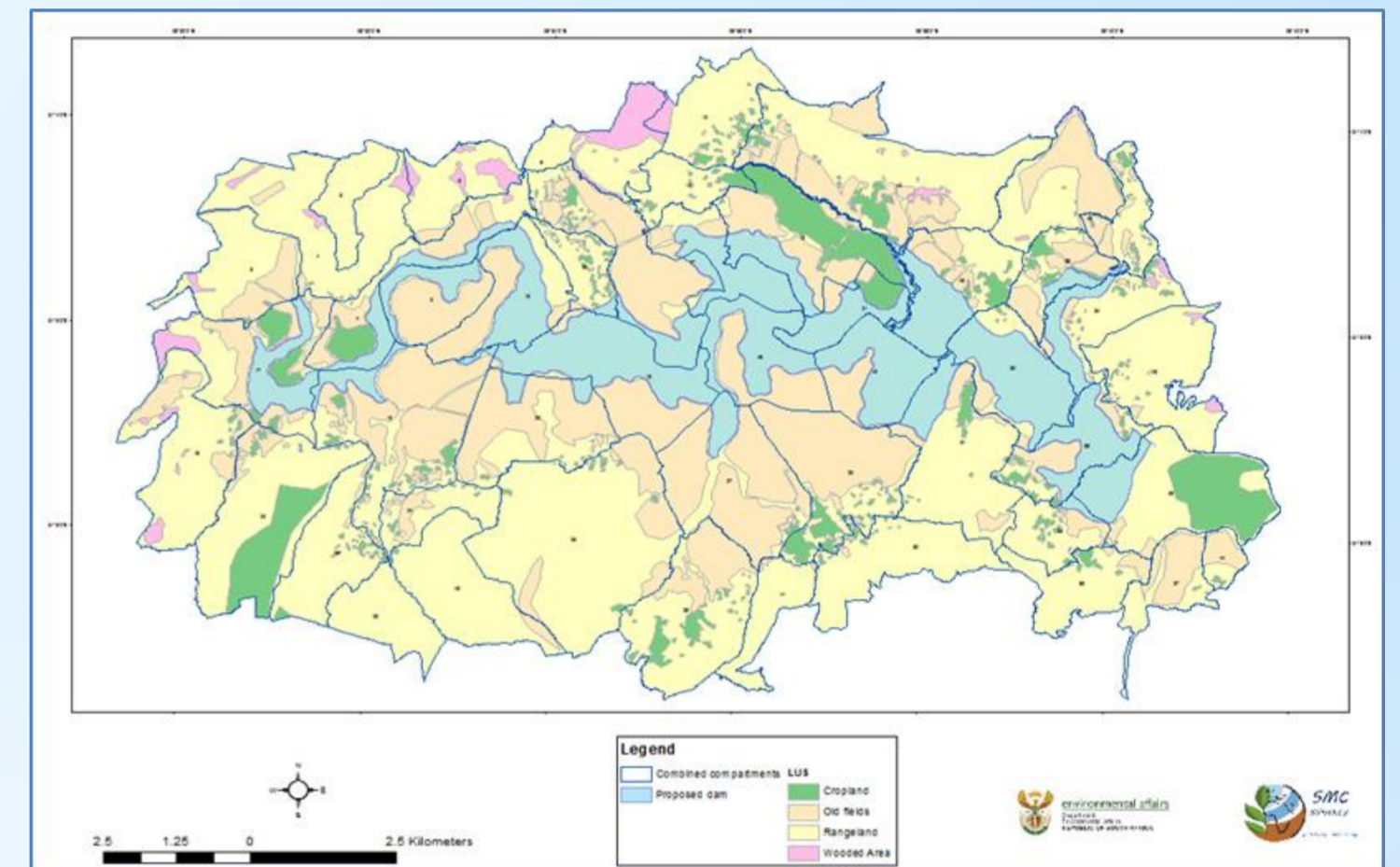
1. Introduction

The Mzimvubu catchment in the Eastern Cape of South Africa is within one of the poorest and least developed regions of the country. A catchment rehabilitation and management programme, aimed at restoring eroded land and thereby reducing the levels of sedimentation in the planned Ntabelanga dam, has been initiated by the Department of Environmental Affairs (DEA). This project's main aim was to demonstrate the use of WOCAT/LADA tools in mapping the state of land degradation in the catchment around the planned dam and to use the WOCAT knowledge base to identify options for rehabilitation.

The planned Ntabelanga dam in the Mzimvubu catchment



The stratification map for the WOCAT/LADA degradation assessment



2. Challenges

- ❑ The proposed dam are planned in one of the most degraded areas in South Africa
- ❑ Very little expertise on the degradation status of the catchment around the dam
- ❑ Demonstrating the value of the WOCAT/LADA tools
- ❑ Adapting the WOCAT/LADA methodology to address the objectives of the overall rehabilitation plan at a catchment level

3. Achievements since July 2015

Land degradation assessment of the Ntabelanga dam catchment

- Identified main degradation types
- Prepared a stratification map based on main land use/cover types and management units (compartments)
- Acquired all relevant spatial data that could assist with the assessment
- Developed an online data capturing system
- Completed the assessment with the aid of remote sensing data and field visits
- GIS analysis of the data

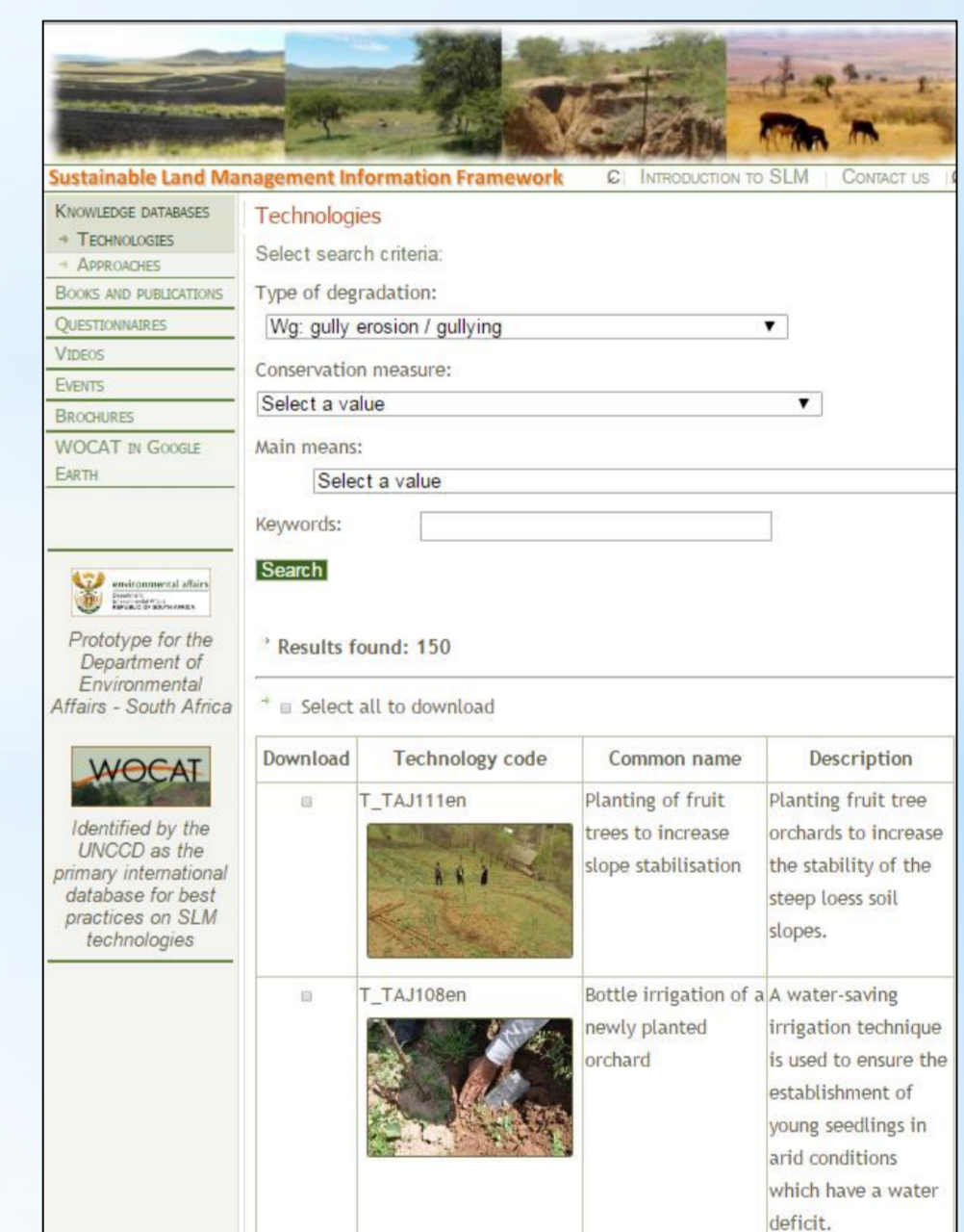
Extracted relevant case studies as options for rehabilitation

- Developed a web service to link with the WOCAT QT and QA database
- Developed a working “proof of concept” SLM information system for DEA
- Extracted relevant case studies
- Developed a decision support system to prioritise the extracted case studies
- Compiled a list of case studies for DEA to consider as options for rehabilitation

Developed a rehabilitation project monitoring and evaluation system

- Developed an online system to capture intervention projects (Intermon)
- Developed a Google Maps interface to view location of interventions
- Created Export function to export the information of all captured projects
- Created a spatial database – link to stand-alone GIS software

The SLMIF developed for DEA – link to WOCAT Web Service



Identified case studies as option for rehabilitation

ID	Code	Common name	Country	Overview	URL	Options to cross Map
124	T_02020a	Intensive agricultural system	Colombia	A precision and sustainable agriculture system comprising multi-purpose ditches with banks, live barriers of grass, and other measures to control erosion.	http://www.smc-synergy.co.za/intermon/intermon.php?code=T_02020a	Y
134	T_03020a	Orchard terrace with bank cover	China	Rehabilitation of gully erosion through the establishment of fruit trees on steep slopes covered with bank cover.	http://www.smc-synergy.co.za/intermon/intermon.php?code=T_03020a	Y
140	T_04020a	Gully control by plantation of bushes	Mexico	Rehabilitation of gully erosion through the plantation of bushes in gully banks.	http://www.smc-synergy.co.za/intermon/intermon.php?code=T_04020a	Y
141	T_04020a	Agroforestry	India	Development of agroforestry through the plantation of fruit trees in agricultural fields.	http://www.smc-synergy.co.za/intermon/intermon.php?code=T_04020a	Y
142	T_04020a	Orchard based agroforestry	Tajikistan	An agroforestry system where agroforestry trees are planted in orchards, giving simultaneous production and conservation benefits.	http://www.smc-synergy.co.za/intermon/intermon.php?code=T_04020a	Y
172	T_04020a	Planting of fruit trees to increase slope stability	Tajikistan	Planting fruit trees to increase the stability of the steep slopes.	http://www.smc-synergy.co.za/intermon/intermon.php?code=T_04020a	Y
184	T_04020a	Orchard terrace with vegetated gully and bank cover	Tajikistan	Increased productivity of the land by planting fruit trees and covering the nearby steep slopes with bank cover.	http://www.smc-synergy.co.za/intermon/intermon.php?code=T_04020a	Y
188	T_04020a	Gully rehabilitation with native trees	Tajikistan	Vegetation and erosion techniques for the rehabilitation of eroded gullies.	http://www.smc-synergy.co.za/intermon/intermon.php?code=T_04020a	Y
189	T_04020a	Orchard based agroforestry	Mexico	Control of erosion through the plantation of agroforestry trees.	http://www.smc-synergy.co.za/intermon/intermon.php?code=T_04020a	Y
189	T_04020a	Orchard based agroforestry	Tajikistan	Orchard based agroforestry system to control erosion on steep slopes.	http://www.smc-synergy.co.za/intermon/intermon.php?code=T_04020a	Y
191	T_04020a	Orchard based agroforestry	Niger	Agroforestry system for the rehabilitation of eroded gullies through the plantation of fruit trees.	http://www.smc-synergy.co.za/intermon/intermon.php?code=T_04020a	Y
192	T_04020a	Orchard based agroforestry	Tajikistan	Rehabilitation of eroded gullies through the plantation of fruit trees.	http://www.smc-synergy.co.za/intermon/intermon.php?code=T_04020a	Y

4. Outlook with respect to challenges

- Promote the use of the extracted case studies in the overall rehabilitation plan for the Ntabelanga dam catchment
- As an example demonstrate the use of the data to identify areas suitable to introduce Pay for Ecosystem Services (PES)
- Demonstrate the use of Intermon to identify new projects for which QT and QT can be completed

Links:

Web service to SLMIF: www.smc-synergy.co.za/wocat

Intermon: www.intermon.co.za

Identified case studies: www.smc-synergy.co.za/downloads/58ecb16d98d5e/SLM_options_Ntabelanga_analyse.pdf

Land degradation information incorporated into GIS

