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



Contact person: Dirk Pretorius – SMC Synergy (www.smc-synergy.co.za)

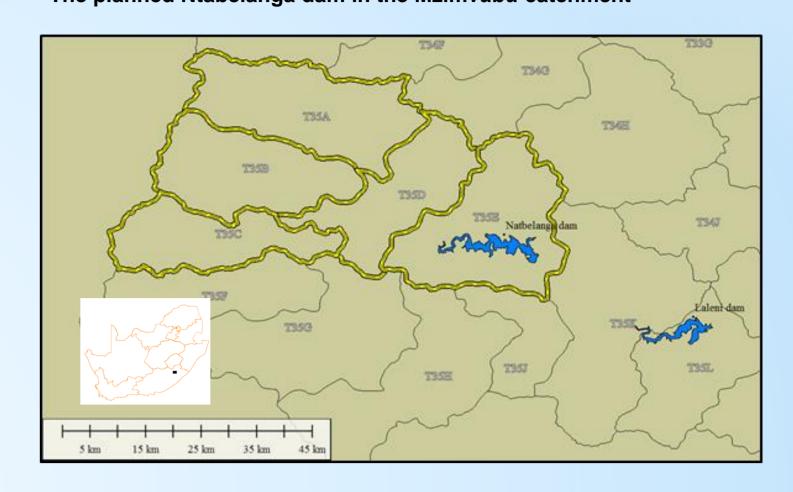
1. Introduction

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.

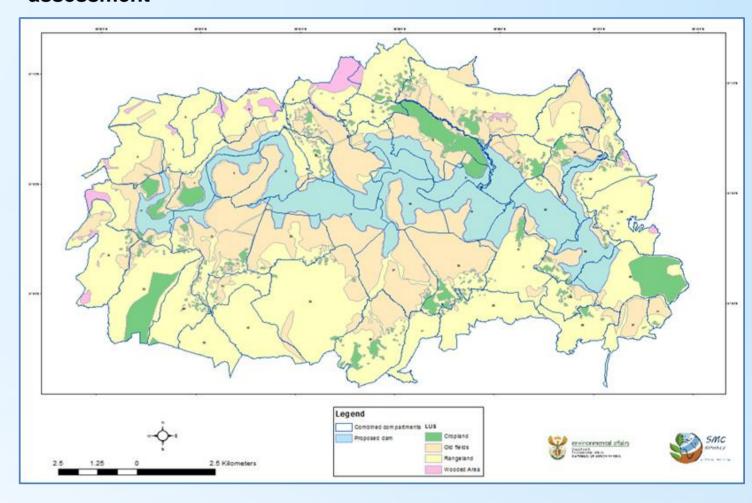
2. Challenges

- 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

The planned Ntabelanga dam in the Mzimvubu catchment



The stratification map for the WOCAT/LADA degradation assessment



The SLMIF developed for DEA – link to WOCAT Web Service

3. Achievements since July 2015

Land degradation assessment of the Ntabelanga dam catchment

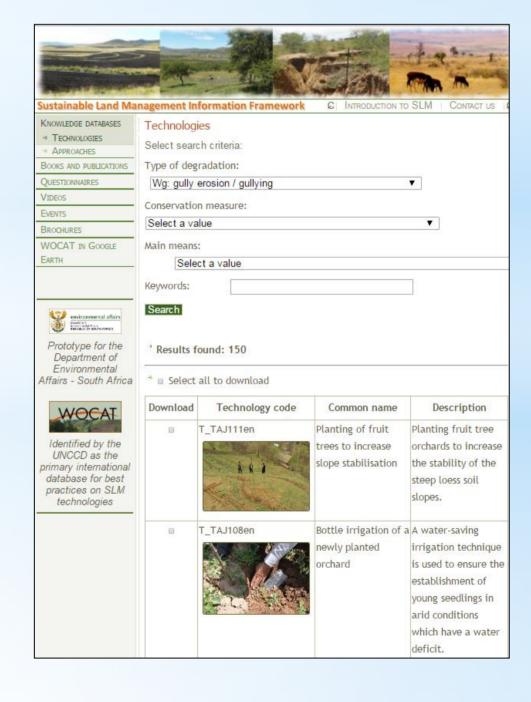
- Identified main degradation types
- Prepared a stratification map based on main land use/cover types and management units (compartments)
- Acquired all relevant spatial data that could assist with the assessment
- Developed an online data capturing system
- Completed the assessment with the aid of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

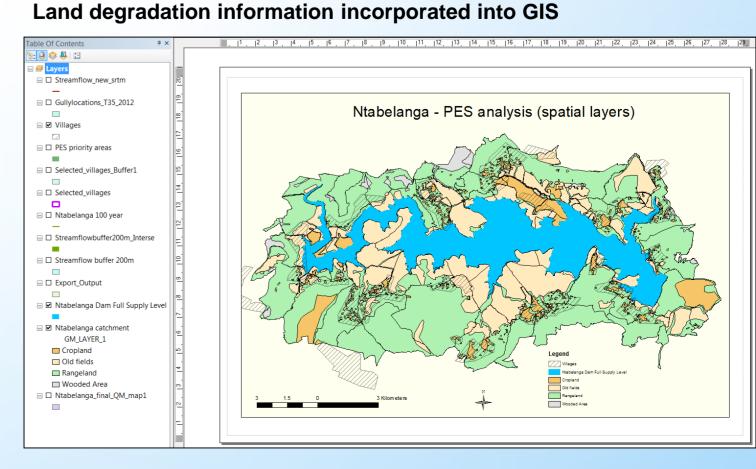
Developed a rehabilitation project monitoring and evaluation system

- 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



Identified case studies as option for rehabilitation

		environmental affairs Department Environmental Affairs Republic of South Africa	WO(CAT UNCCD Primary recommended database	SMC Synergy Spatial Management Consulting	
d	Code	Common name	Country	Overview	URL	Options to conside
	Agro fo rest ry					y = recommended; ? = peruse
284	T_COLO02en	Intensive a grofore stry system	Colombia	A protective and productive high-input agrofore stry system comprising multi-purpose ditches with bunds, live barriers of grass, contour ridging.	https://qt.wocat.net/qt_summary1.php?lang=english8.qt_id=284	У
129	T_CHN 021en	Orchard terraces with bahia grass cover	China	Rehabilitation of degraded hillsides through the establishment of fruit trees on slope-se parated orchard terraces, with bahia grass planted as protective groundcover.	https://qt.wocat.net/qt_summary1.php?lang=english&qt_id=129	?
595	T_MO R015en	Gully control by plantation of Atriplex	Morocco	Reha bilitation of a guilled slope and gully control, by plantation of Atriplex halimus fodder shrubs.	https://gt.worat.net/gt_summary1.php?lang=english>_id=595	?
451	T_IND005en	Agro-forestry	India	Development of degraded lands through plantation of productive tree species for long term benefit (conservation and economic) and cultivation of intercrop for short term benefit.	https://gt.wocat.net/gt_summary1.php?lang=english&qt_id=451	У
166	T_TAJ003en	Orchard-based a groforestry	Tajikistan	An agroforestry system where legumes and cereals are planted in fruit orchards, giving simultaneous production and conservation benefits.	https://dt.wocat.net/qt/summary1.php?lang=english&dt/id=166	?
271	T_TAJ111en	Planting of fruit trees to increase slope stabilisation	Tajikistan	Planting fruit tree orchards to increase the stability of the steep loess soil slopes.	https://gt.wocat.net/gt_summary1.php?lang=english8.gt_id=271	?
694	T_TAJ044en	Silvo-pastora lism: Or chard with integrated grazing and fodder production	Tajikistan	Increased productivity of the land by planting fruit trees and conserving the land by restricting the access of livestock resulting in improved runoff retention	https://qt.wocat.net/qt_summary1.php?lang=english&qt_id=694	?
686	T_TAJ115en	Gully rehabilitation with native trees	Tajikistan	Vegetative and structural technology for the rehabilitation of an expanded gully	https://gt.wocet.net/qt_summery1.php?leng=english&qt_id=686	Y
603	T_MO R014en	Olive tree plantations with intercropping	Morocco	Contour planting of olive trees with crops, legumes and vegetables intercropping	https://qt.wocat.net/qt_summary1.php?lang=english&qt_id=508	Y
685	T_TAJ043en	Mixed fruit tree orchard with intercropping of Esparcet and annual crops in Muminabad District	Tajikistan	Orchard based agroforestry established on the hill slopes of Mumina bad	https://gt.worst.nst/qt_summary1.php?lang=english&qt_id=685	?
	T_NIG080en	Assisted natural regeneration	Niger	Assisted natural regeneration (ANR) is a nagrofore stry technique, which consists in protecting and preserving tree see dlings growing naturally on cropland or forest/rangeland.	https://qt.wocat.ret/qt_summary1.php?langeenglish&qt_id=1213	?
260	T_TAJ008en	Orchard-based agroforestry (establishment of orchard)	Tajikistan	Establishment of an orchard intercropping system on severely degraded cropland.	https://gt.wocat.net/qt_summary1.php?lang=english>_id=260	?



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)