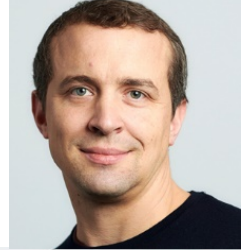


WOCAT

World Overview of Conservation Approaches and Technologies



Introducing WOCAT- *A global network on SLM*

Monitoring, Evaluation and Learning (MEL), Data Management and Geo-informatics Option by Context (GEOC) Learning Week

5th November 2019

Tatenda Lemann

WOCAT Secretariat, Centre for Development and Environment, University of Bern, Switzerland

Photo:
ODESPANO

WOCAT is...



...a **global network** of specialists working in the field of **SLM**

...a framework for **Knowledge Management** and **Decision Support** for SLM



WOCAT's mission



... is to support *innovation and decision-making in SLM*

maintain global, open
SLM network



harmonize and
further develop
tools and methods
with partners

WOCAT



provide open access
**global SLM data
repository**



**build capacities at
local, regional and
national level**

with the **underlying principles** of:

- ❖ neutrality
- ❖ inclusiveness
- ❖ linking local land user to national/ global policy level

Main target groups

- **SLM specialists at the field level**, incl. technical staff, extension workers, agricultural advisors, project implementers
- **SLM specialists at the (sub-)national level**, incl. planners, project designers, decision makers, and researchers
- **SLM specialists at the regional and global level**, incl. international programme planners, and donors

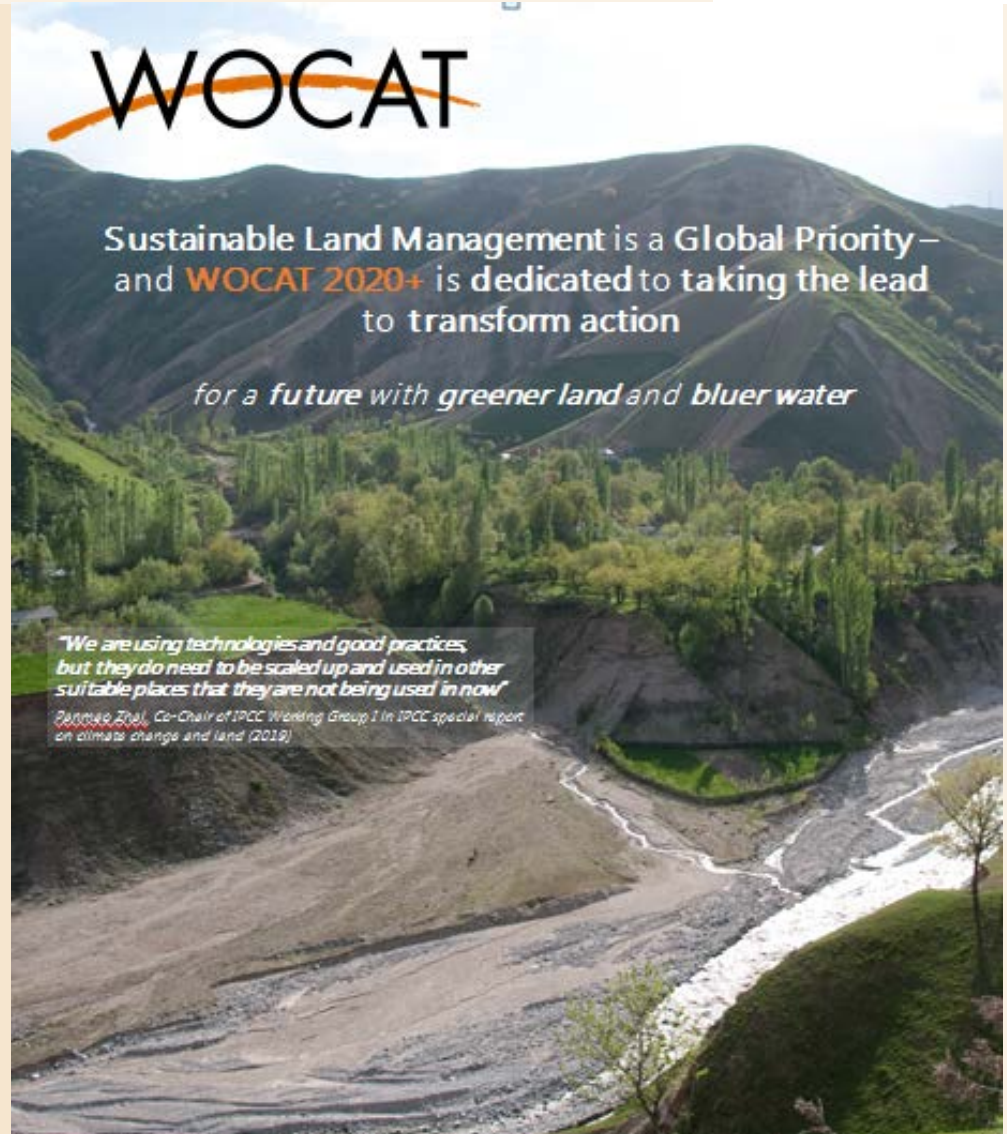
Ultimate target group & beneficiaries:
land users and **public** benefitting from more secure ecosystem services



WOCAT Network



- Established in 1992
- New set-up in 2014 with 8 consortium partners
- New WOCAT 2020+ initiative in preparation



UNCCD recognition *primary recommended database*



April 2016:

‘Primary recommended database for the SLM best practices reporting’

Supporting the 196 members in the reporting of good SLM practices

WOCAT SLM DATABASE

Home Search SLM Data Add SLM data My SLM Data

Login English Spanish French

WOCAT UNCCD United Nations Convention to Combat Desertification

the Global Database on Sustainable Land Management
is the primary recommended database by UNCCD

Search SLM data Add SLM data

Search SLM Data All SLM Data Search

SLM Technologies
An SLM Technology is a land management practice that controls land degradation and enhances productivity and/ or other ecosystem services.
[View all](#)

SLM Approaches
An SLM Approach defines the ways and means used to implement an SLM Technology, including the stakeholders involved and their roles.
[View all](#)

SLM Maps
An SLM Map analyses and depicts the spatial distribution of SLM and land degradation processes, causes, and impacts.
[View all](#)

United Nations Convention to Combat Desertification Knowledge Hub

Home Knowledge Products and Pillars The Science-Policy Interface Topics

Knowledge Products and Pillars Best practices in sustainable land management UNCCD- WOCAT partnership on SLM

Knowledge Products and Pillars

- Global Land Outlook
- Guide to the scientific conceptual framework for LDN
- The UNCCD Capacity Building Marketplace
- Best practices in sustainable land management
 - SLM in different land use contexts
 - Identifying SLM technologies
 - Examples of SLM best practices
 - Why SLM matters
 - Adopting SLM at the national level
 - What you can do now
 - The Science-Policy Interface

About the UNCCD- WOCAT partnership

To disseminate sustainable land management (SLM) best practices, the UNCCD Secretariat is working alongside the World Overview of Conservation Approaches and Technologies (WOCAT) to provide a database where specialists can share their best practice technologies.

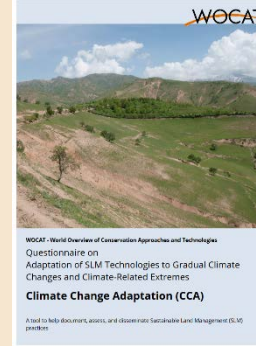
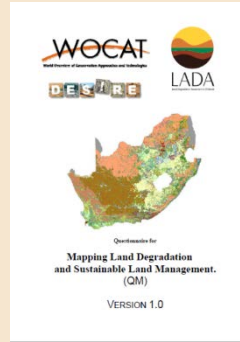
What is WOCAT?

WOCAT was established in 1992 as a global network of SLM specialists and has more than 2000 registered users, over 60 participating institutions, and around 30 national and regional initiatives. It connects SLM specialists with experts that provide tools and methods for identifying fields of action and enables users to share knowledge of land-resource management.

An agreement between UNCCD and WOCAT was signed on 15 April 2014. UNCCD identified WOCAT as a primary recommended database for best practices on SLM technologies.

The official recognition of UNCCD gives WOCAT a mandate to support the 194 signatory countries in recording their SLM best practices and using the SLM knowledge of stakeholders worldwide – from land users to decision-makers – to improve local land management.

WOCAT tools and methods



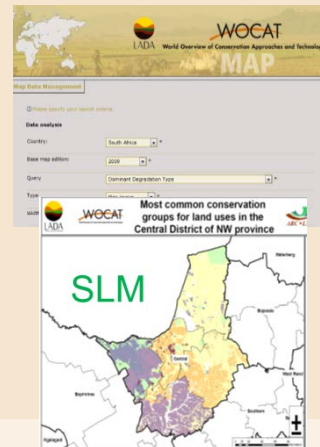
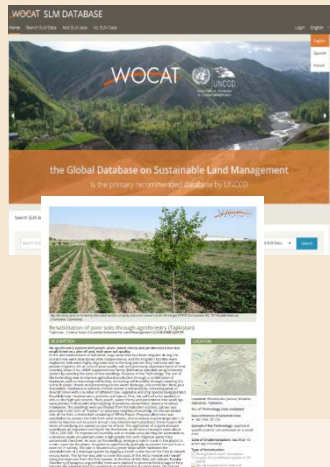
documentation,
evaluation and
dissemination of
good practices

spatial
assessment

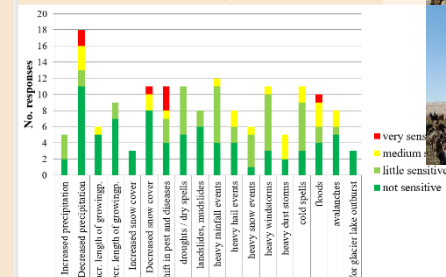
global issues
(climate change)

decision support

scaling up
and
adoption
of SLM

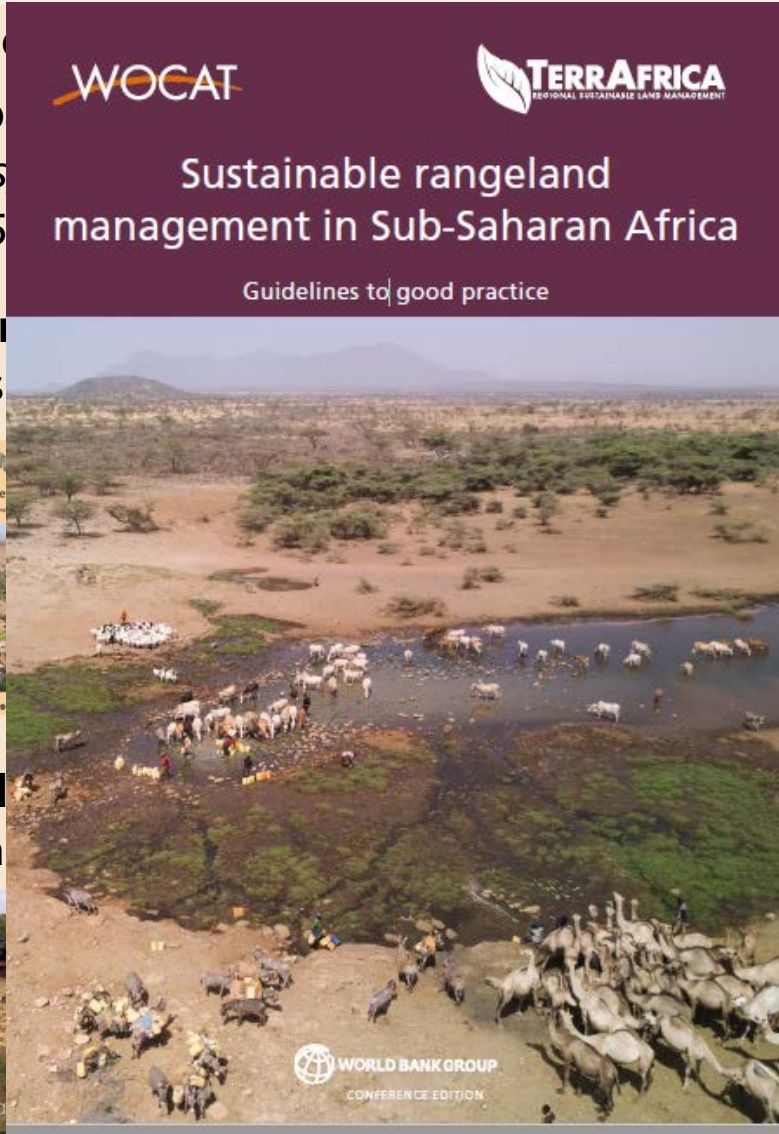


Sensitivity of SLM technologies



Solid & easily accessible WOCAT knowledge products

WOCAT and
... a global
Approaches
from over 5
... global, r
inventories

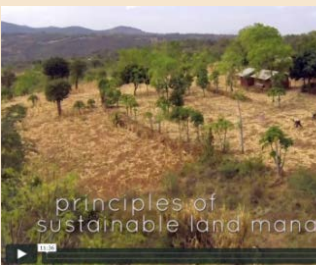


... *es on SLM Technologies, SLM*
... an 1000 case studies and maps

and brochures: overview books,
... ers in different formats



... SLM vid
... Tablet a



... *ing SLM in their fields.*



Questionnaires and Database for documentation and evaluation of SLM practices



Questionnaires on SLM Technologies, Approaches & Mapping

Documenting information from and with land users

WOCAT Technologies QT 16 Specification

2.4.3.2 Establishment and maintenance methods for vegetation

Initial establishment

activity (in sequence)	source of energy*
1 Digging holes	M
2 Cutting/digging out of planting material	M
3 Transporting	M
4 Transplanting	M
5	

Entering data in questionnaire



Entering data in database



Data available online

Standardized tools & harmonized products key for Knowledge Management and Decision Support



SLM Technology / Approach Summary

- Automatically generated
- In all languages
- Used for best practices compilations; learning materials for extension services etc.



Gliricidia septium locally known as Sa Kakawate as live trellis "basing"

DESCRIPTION

Gliricidia septium locally known as vegetables and erosion control for farmers and increased income. The Highly Diversified Cropping in Bukid, (Nagpartian, Laguna situated) 1000-2000 mm. Each of the farmer accessible to infrastructures such as Kakawate, a small to medium-sized various annual crops such as tomato diversified since crop rotation is be scabious sloping lands and reduce firmly. They are planted in a row of kakawate is being trimmed and mulch and moisture in the soil, in addition mattu soil, in addition mattu soil, in addition mattu soil. In establish up and planted, they are important crop can utilize the soil. The technology has been a practice each year and improvements to be grown, making their market mo. Over the years, its effectiveness as

CLASSIFICATION OF THE TECHNOLOGY

Main purpose
 improve production
 reduce, prevent, restores land degradation
 conserve ecosystem
 protect a watershed/ downstream
 preserve/improve biodiversity
 reduce risk of disasters
 adapt to climate change/ extreme
 mitigate climate change and to
 create beneficial economic impa
 create beneficial social impact

NATURAL ENVIRONMENT
Average annual rainfall
 < 250 mm
 251-500 mm
 501-750 mm
 751-1,000 mm
 1,001-1,500 mm
 1,501-2,000 mm
 2,001-3,000 mm
 3,001-4,000 mm
 > 4,000 mm

Slope
 flat (0-2%)
 2-5%
 5-10%
 10-15%
 15-20%
 20-25%
 25-30%
 30-35%
 35-40%
 40-45%
 45-50%
 > 50%

SLM group
 agroforestry
 improved ground/vegetation co
 integrated soil fertility manager

TECHNICAL DRAWING

Technical specifications
 kakawate cuttings are planted with around 3 meters high for every 3.6 chayote, beans, cucumber, lettuce a

Groundwater table
 on surface
 < 5 m
 5-50 m
 > 50 m

Species diversity
 high
 medium
 low

CHARACTERISTICS OF LAND USERS AND MARKET ORIENTATION

subsistence (self-supply)
 mixed (subsistence/ commercial)
 commercial/ market

ESTABLISHMENT AND MAINTENANCE

Calculation of inputs and costs
 Costs are calculated: per unit
 Currency used for cost calculation
 Exchange rate (to USD) 1 = 60
 Average wage cost of hired labor

Establishment activities
 1. Clearing of the area (Timber/ fire)
 2. Planting of kakawate cuttings
 3. Installation of metal wire and pl
 4. Planting of annual crop: tomato
 5. Planting of annual crop: cucumber
 6. Planting of annual crop: chayote

Establishment inputs and costs (p

Specify input

Labour
 Manual labour: Weeding
 Manual labour: Planting
 Manual labour: Fertilizer Application
 Manual labour: Harvesting and Ho

Plant material
 Kakawate cuttings (cuttings are abo
 Cucumber @ 100grams per can
 Chayote (seeds are abundant in the
 Fertilizers and biofocdes

Inorganic fertilizer: Urea
Organic fertilizer: chicken dung
Pesticide

Generation material
 Metal wire (can be used for a long
 Straw

Total costs for establishment of in

Maintenance activities
 1. Weeding (Timing/ frequency: As
 2. Trimming of kakawate (Timing/
 3. Application of organic fertilizer
 4. Application of inorganic fertilizer
 5. Spraying of pesticide (Timing/ fr

Access to services and infrastructure
 health
 education
 technical assistance
 employment (e.g. off-farm)
 markets
 energy
 roads and transport
 drinking water and sanitation
 financial services

IMPACTS
Socio-economic impacts
 Crop production
 crop quality
 fodder production
 fodder quality
 wood production
 product diversity
 production area (now land under cultivation/ use)
 land management
 expenses on agricultural inputs
 farm income
 diversity of income sources

Socio-cultural impacts
 food security/ self-sufficiency
 SLM/ land degradation knowledge

Land use
 Cropland- Annual cropping
 Mixed cropland (with food/ non-food crops)
 Pasture
 Pasture- Intensive
 Pasture- Semi-intensive
 Pasture- Extensive
 Pasture- Overgrazed
 Pasture- Degraded
 Pasture- Abandoned
 Pasture- Uncultivated
 Pasture- Uncultivated- Degraded
 Pasture- Uncultivated- Abandoned
 Pasture- Uncultivated- Uncultivated

Agro-climatic zone
 humid
 sub-humid
 semi-arid
 arid

Specifications on climate
 Average annual rainfall in mm: 1500.0
 Rainfall is evenly distributed throughout the year

Ecological impacts
soil moisture
 decreased
 increased
soil cover
 reduced
 improved
soil loss
 increased
 decreased
soil compaction
 increased
 reduced
soil organic matter/ below ground C
 decreased
 increased

vegetation cover
 decreased
 increased
pest/disease control
 decreased
 increased
landslides/ debris flow
 increased
 decreased
emission of carbon and greenhouse gases
 increased
 decreased

Off-site impacts
downstream flooding (undesired)
 increased
 reduced

COST-BENEFIT ANALYSIS
Benefits compared with establishment costs
 Short-term returns
 Long-term returns
 very negative
 negative
 neutral
 positive
 very positive

Benefits compared with maintenance costs
 Short-term returns
 Long-term returns
 very negative
 negative
 neutral
 positive
 very positive

CLIMATE CHANGE
 increased
 decreased
 no change

ADOPTION AND ADAPTATION
Percentage of land users in the area who have adopted the Technology
 single digit experimental
 1-10%
 10-50%
 more than 50%

Number of households and/ or area covered
 Almost all of local farmers practice the technology

Has the Technology been modified recently to adapt to changing conditions?
 Yes
 No
To which changing conditions?
 climate change/ extremes
 changing markets
 labour availability (e.g. due to migration)

CONCLUSIONS AND LESSONS LEARN
Strengths: land user's view
 (1) Increase farm income
 (2) Diverse farm produce
 (3) Easiness to establish, no need for technical knowledge to establish
 (4) Inexpensive
 (5) Organic farming

Weaknesses/ disadvantages/ risks: land user's view
 (1) Low production cost
 (2) Easiness to maintain
 (3) Effective erosion control measure
 (4) Increase farm yield and income
 (5) Diverse farm produce
 (6) Easiness to transfer

Weaknesses/ disadvantages/ risks: compiler's or other key resource person's view
 (1) Pest infestation
 (2) Pesticide application
 Weaknesses/ disadvantages/ risks: compiler's or other key resource person's view
 how to overcome
 (1) The technology is very good in terms of erosion control and improving lives of farmers in the community, but then the technology is not well-known for the whole country.
 (2) The WOCAT database as an excellent information tool for medium in the dissemination of this kind of technology, not only within Philippines but all over the world. These would highlight realities of the local farmers situated in remote areas in terms of managing the land productively and sustainably.

REFERENCES
 Compiler
 Philippine Overview of Conservation Approaches and Technologies (philcatsecretariat@gmail.com)
 Date of documentation: March 11, 2017

Resource persons
 Gerlie Urtilla - land user
 Calvin Delfino - SLM specialist
 Baldwin Pine (baldwinp@gmail.com) - Soil Specialist / GIS Specialist
 Jonar Raquil - Engineer
 Maricar Torres - Engineer
 Arnes Tayao - Engineer

Full description in the WOCAT database
<https://cat.wocat.net/en/wocat/technologies/view/technologies/1930/>

Linked SLM data
 n/a.

Documentation was facilitated by
 Institution
 Bureau of Soils and Water Management (Bureau of Soils and Water Management) - Philippines
 Project

Where?

What?

How?

Technical specifications Costs?

Impacts? Benefits?

WOCAT SLM DATABASE

la base de datos Mundial de Manejo Sostenible de Tierras es la principal base de datos recomendada por CLD

Enfoques MST
 Una tecnología MST es una práctica de manejo de tierras que integra la degradación de las tierras y fomenta la productividad y el uso sostenible de los recursos.

Enfoques MST
 Un enfoque MST define las medidas y medidas que se implementan para mejorar la productividad y el uso sostenible de las tierras, los recursos y el medio ambiente.

Mapas MST
 Un mapa MST analiza y representa la información espacial de un proceso MST y su aplicación de las tierras, los recursos y el medio ambiente.

Mapping LD & SLM

WOCAT SLM DATABASE

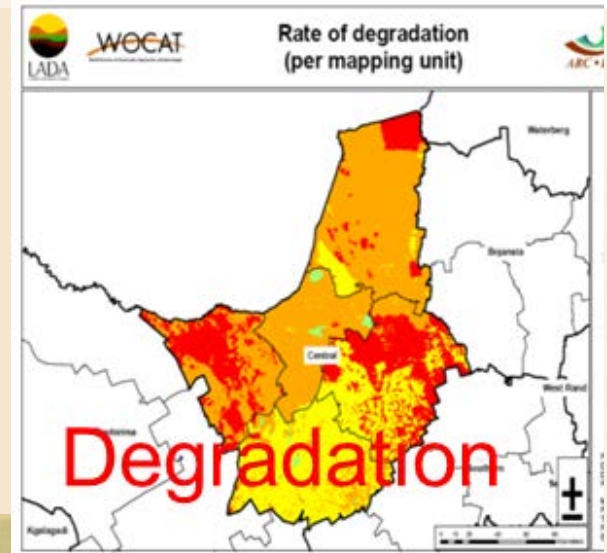
Home Search SLM Data Add SLM data My SLM Data Login English Spanish French

WOCAT UNCCD United Nations Convention to Combat Desertification

the Global Database on Sustainable Land Management
is the primary recommended database by UNCCD

Questionnaire for
Mapping Land Degradation
and Sustainable Land Management.
(QM)

VERSION 1.0



Search SLM data Add SLM data

Search SLM Data All SLM Data Search

SLM Technologies
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MAP

Map Data Management

Please specify your search criteria.

Data analysis

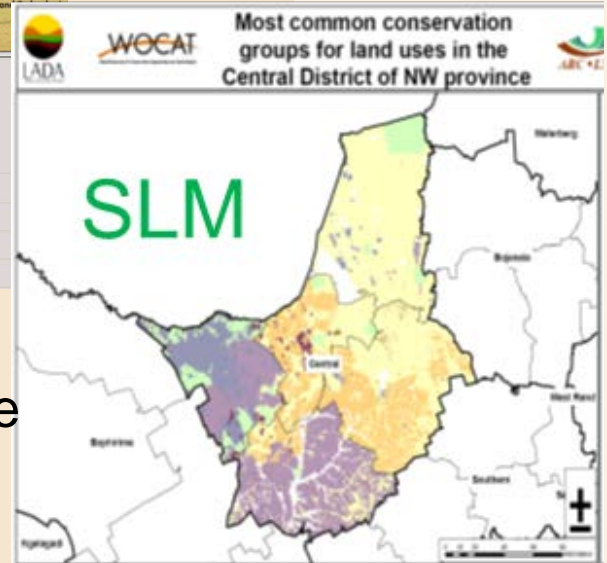
Country: South Africa

Base map edition: 2009

Query: Dominant Degradation Type

Type: Map image

Width (pixels):



Monitoring SDG:

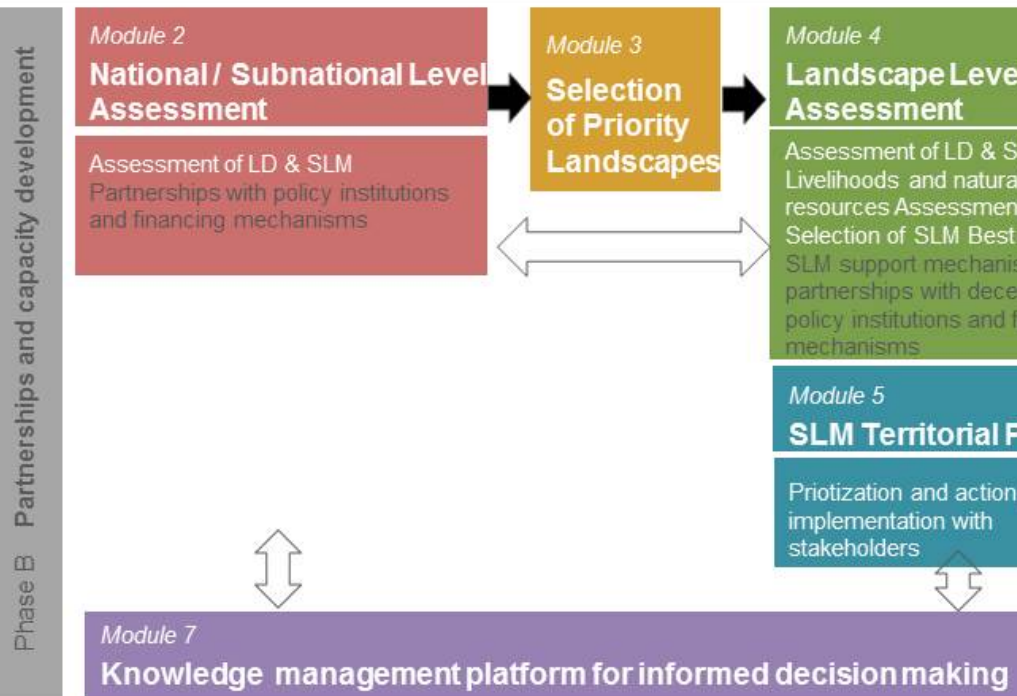
Target 2.4 (area under productive and sustainable agriculture) &

Target 15.3 (land degradation neutrality)

Integrating knowledge in a Decision Support process

Decision Support Framework for SLM mainstreaming and scaling

Module 1
Operational Strategy and Action Plan for mainstreaming and scaling
 Phase A Review and initial strategy and action plan



Food and Agriculture Organization of the United Nations

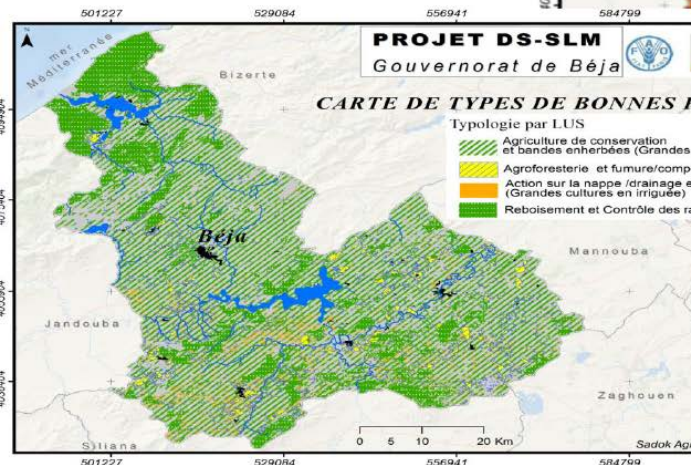
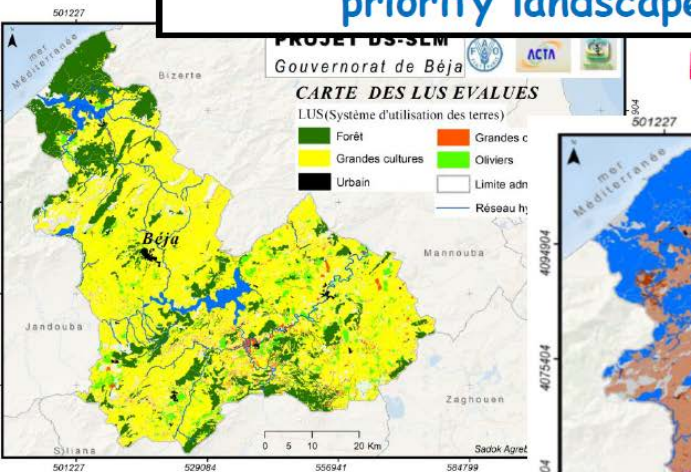
The Sustainable Land Management Mainstreaming Tool



DECISION SUPPORT FOR MAINSTREAMING AND SCALING UP SUSTAINABLE LAND MANAGEMENT

DS-SLM in Tunisia

Module 3 : WOCAT maps priority landscape



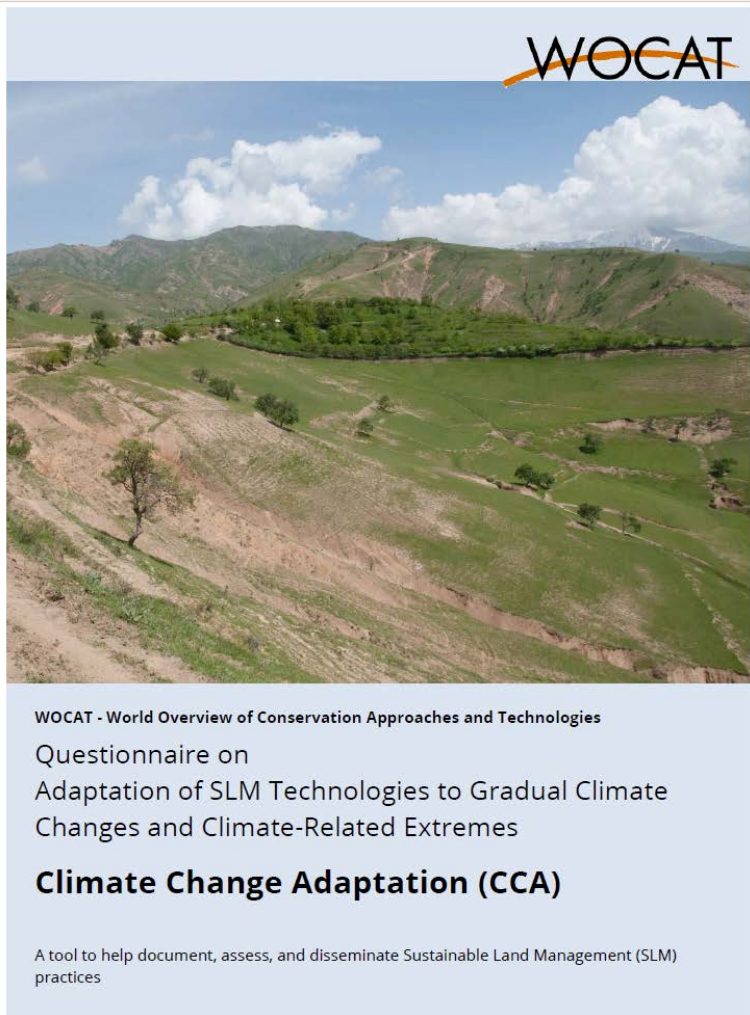
Organisation des Nations Unies
pour l'alimentation et l'agriculture

Vers une Gestion Durable des Terres (GDT) -
Une collection des bonnes
pratiques en Tunisie

AIDE À LA DÉCISION POUR
L'INTÉGRATION ET L'EXTENSION
DE LA GESTION DURABLE DES TERRES



Associated modules



WOCAT

WOCAT - World Overview of Conservation Approaches and Technologies

Questionnaire on
Adaptation of SLM Technologies to Gradual Climate
Changes and Climate-Related Extremes

Climate Change Adaptation (CCA)

A tool to help document, assess, and disseminate Sustainable Land Management (SLM)
practices

assess whether SLM Technologies are or can be further adapted to gradual climate changes and climate-related extremes.



WOCAT

WOCAT - World Overview of Conservation Approaches and Technologies

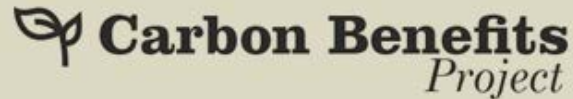
Questionnaire on
Watershed Management

A tool to document and assess land management practices and surface runoff

Version: 2016

assess land management / LM practices interrelations and their sum of impacts on ESS (mainly runoff)

Link between WOCAT and the Carbon Benefit Project (CBP) Tools



- ✓ A new version of **WOCAT** Questionnaire on SLM Technologies is online → with more drop down answers (adapted from IPCC) which can be linked with the CBP tools (www.carbonbenefitsproject.org)
- ✓ The **API** of the WOCAT database will be linked with the CBP simple- and detailed assessment → **Until the end of 2019**
- ✓ **Approx. 60%** of the questions in the CBP Tool (Simple Assessment) can be answered automatically with the import of SLM Technology data from the WOCAT database.
- ✓ It allows WOCAT users to import a WOCAT SLM Technology entry into the CBP system to carry out a **GHG assessment** of their Technology.
- ✓ This makes a very **powerful tool kit** reducing the burden on users and will ultimately provide a database of GHG friendly land management technologies available globally.

Link between WOCAT and CBP

Why the Carbon Benefit Project (CBP) Tools?

- ✓ The CBP is the only GHG calculator that includes a **spatial component** (e.g. a map). This allows users to analyse multiple areas of land with different types of land use and management at the same time. It makes the tool ideal for landscape scale analysis and scenario planning.
- ✓ The tool set includes both a **simple assessment** (Tier 1) and a more **detailed assessment** (Tier 2) option where users can put in their own project, country or region specific emission factors.
- ✓ The CBP tools include **socioeconomic tools** that allow users to consider the economic social and cultural practicalities of implementing carbon friendly land management practices.
- ✓ The CBP tools are online making them available to anyone with an internet connection. **No software is required.**

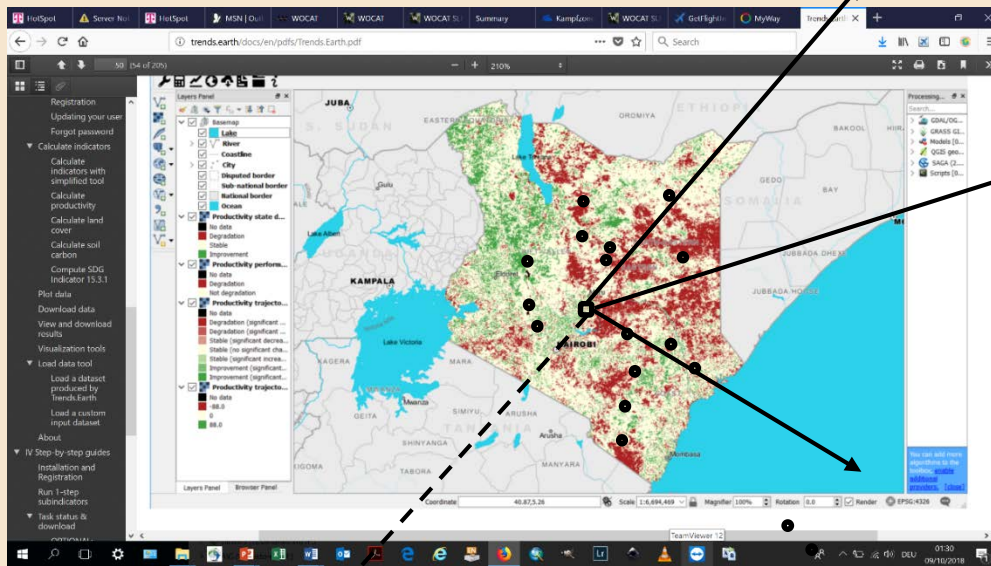
www.carbonbenefitsproject.org

New Project Tools4LDN

Monitoring LDN – linking local / national / global



(1) Trends.Earth (EO) (national)



(3) Add. Data e.g. Collect Earth (FAO)
→ (local-landscape)

(2) WOCAT-UNCCD SLM BP reporting (local)

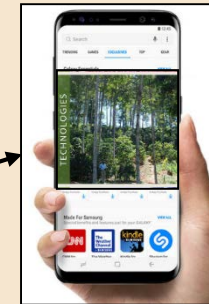
TECHNOLOGIES

Coffee Agroforestry [Kenya]

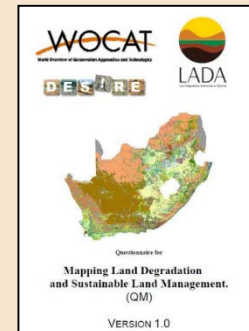
land use management system in which coffee is grown with forestry technologies to create more diverse, productive and resilient landscapes

Compiler: Paul Kahiga 02/19/2015 10:32 a.m.

Carbon Benefits Project:
Modelling, Measurement and Monitoring



(3) Mobile App
LandPKS – WOCAT
light – Trends.Earth
(GEF prop 2019)
→ Crowd sourcing
(local)



(4) LADA-WOCAT
mapping combined
with data from (1),
(2), (3), ...
→ National –
landscape) (exist.)

find  **on:**

World Overview of Conservation Approaches and Technologies

www.wocat.net

qcat.wocat.net

www.facebook.com/wocatnet

thank you!

tatenda.lemann@cde.unibe.ch