



Photo: Luisa Vega



Photo: ICIMOD

WOCAT

World Overview of Conservation Approaches and Technologies

The Global Network on Sustainable Land Management

Knowledge management and learning in the GEF:
learning from agency experience with integrated programming

4 May 2023

nicole.harari@unibe.ch

WOCAT

supports innovation and decision-making in SLM by:



The World Overview of Conservation Approaches and Technologies (WOCAT) is a **global Network established in 1992.**

WOCAT supports the compilation, documentation, evaluation, sharing, dissemination, and application of **sustainable land management (SLM) knowledge.**

WOCAT & UNCCD

2014: WOCAT **officially recognized by the UNCCD as the primary recommended Global SLM Database for SLM best practices and adaptation measures.**

2019: **UNCCD Decision 19/COP.14:** acknowledging continuing efforts by WOCA Tin promoting analysis, dissemination and accessibility of SLM practices.

2020: **UNCCD-WOCAT Partnership extended** to boost the uptake of SLM practices around the world through a strengthened global partnership.

2022: Five COP Decisions:

Decision 9/COP.15 - Collaboration with the Global Environment Facility

Decision 11/COP.15 - Improving the procedures for communication of information as well as the quality and formats of reports...

Decision 19/COP.15 - Interfacing science and policy: The Science Policy Interface, the dissemination and accessibility of best practices...

Decision 20/COP.15 - Policy-oriented recommendations resulting from the cooperation with other intergovernmental scientific panels and bodies

Decision 24/COP.15 - Follow-up on policy frameworks and thematic issues: Gender



WOCAT & UNCCD

UNCCD Decision 9/COP.15 - Collaboration with the GEF



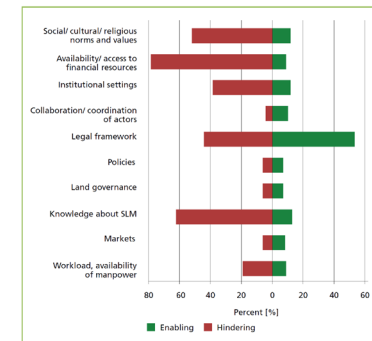
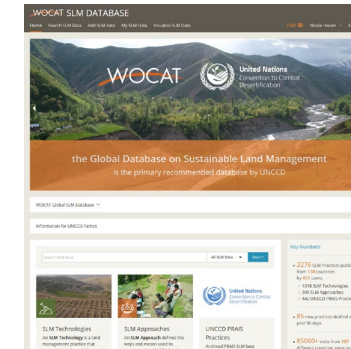
The Conference of the Parties [...] recommends the Global Environment Facility to promote, as appropriate, the use of the United Nations Convention to Combat Desertification-designated World Overview of Conservation Approaches and Technologies database into the Global Environment Facility projects and programmes to support knowledge-sharing and the dissemination of sustainable land management best practices...



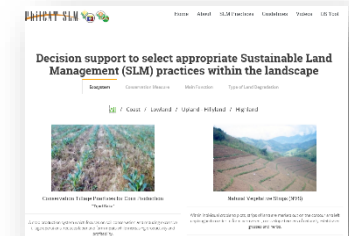
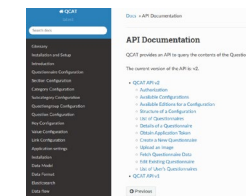
WOCAT's principles for knowledge management

To enhance the **robustness and durability of knowledge management processes and products**, WOCAT focuses on the following principles:

1. Tools and methods applied to generate data and evidence are **harmonized**
2. Data are **standardized** to allow exchange, comparison and analysis
3. Data and knowledge are **open access**, and **easy to access and use**
4. Data and knowledge are **integrated into platforms** that last beyond the duration of a programme/project
5. Knowledge is **co-developed** and **co-produced** with multiple actors and social groups
6. Data and knowledge are produced in such a way that they can be integrated into knowledge products for **different audiences**
7. Knowledge/evidence is **embedded at local, national, regional and global levels**




Enabling (green) and hindering (red) conditions for the implementation of SLM technologies. Sustainable Rangeland Management in Sub-Saharan Africa. Liniger et. al 2019.




WOCAT Global SLM Database




Search SLM Data All SLM Data




SLM Technologies
An SLM Technology is a land management practice that controls land degradation and enhances productivity and/or other ecosystem services.




SLM Approaches
An SLM Approach defines the ways and means used to implement an SLM Technology, including the stakeholders involved and their roles.




UNCCD PRAIS Practices
Archived PRAIS SLM best practices, as previously shared through the UNCCD PRAIS system in the UNCCD reporting process.




Carbon Benefits Project (CBP)
Tools for assessing the carbon benefits and greenhouse gas emissions of an SLM Technology.




Gender
Tool for assessing gender-responsiveness of SLM Technologies and Approaches.




Economics
Analysing the Costs and Benefits of Sustainable Land Management Technologies.



Sand and Dust Storm
Sand and Dust Storm (SDS) relevant SLM Technologies



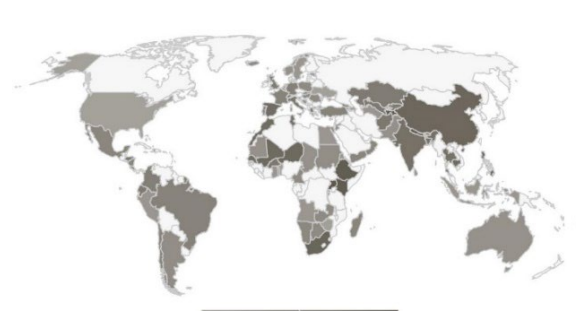
Drought
Drought relevant SLM Technologies



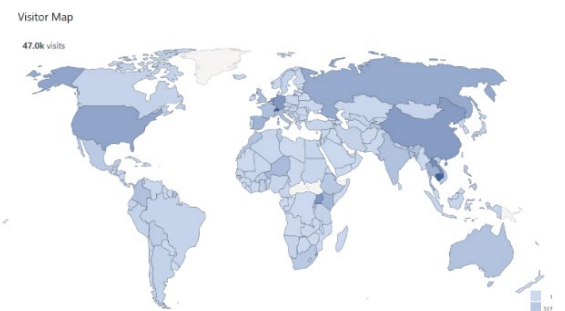
LDN
Tools and methods for monitoring, validating and implementing land degradation neutrality

Main features

- ✓ **free upload and worldwide sharing** of countries' good SLM practices in **multiple languages** (English, Spanish, French, Portuguese, Russian, Chinese and others)
- ✓ **quality assurance and review process**, guaranteeing quality information and facilitating learning process
- ✓ **free access** to 2000+ proven, field-tested SLM practices from over 130 countries
- ✓ **database filter** to find relevant SLM practices for specific landscapes, land uses etc.
- ✓ **possibility to integrate in/link to** national/project/global platforms through API



SLM good practices in Database



Database Visitors

Key Numbers

- **2277** SLM Practices published from **134** countries by **451** users.
 - 1318 SLM Technologies
 - 510 SLM Approaches
 - 442 UNCCD PRAIS Practices
- **85** new practices drafted in the past 90 days.

Example: GEF/FAO DS-SLM

WOCAT SLM DATABASE

Home Search SLM Data Add SLM data My SLM Data Visualize SLM Data

Search

Country: Select or type a country name

Project: Decision Support for Main...

Institution: Select or type

Classification of the SLM Technology

- Land use type
- Degradation type
- SLM measures
- SLM group
- Main purpose of the Technology
- Goal of the Technology with regard to land degradation

Natural and human environment

- Agro-climatic zone
- Annual rainfall
- Slopes on average
- Altitudinal zone
- Market orientation of production system
- Land use rights

Pitcher irrigation for the management of moderately saline ... [Bangladesh]

The technology is called pitcher irrigation technology because irrigation water is provided from an earthen pitcher which has several small holes on its bottom. The earthen pitcher is placed on a raised bed which is filled with fresh irrigation water. Several small pores on its bottom. Then jute fibres are ...

Compiler: Md Babul Hossain 10/11/2018 8:22 p.m.

Assisted Natural Regeneration [Bangladesh]

Assisted natural regeneration (ANR) is a simple, low-cost forest restoration method that can effectively convert deforested lands to more productive forests.

Compiler: Fazlay Arafat 02/18/2019 12:03 p.m.

WOCAT

1791
Total SLM Practices

1288 / 71.92 %
Technologies

503 / 28.08 %
Approaches

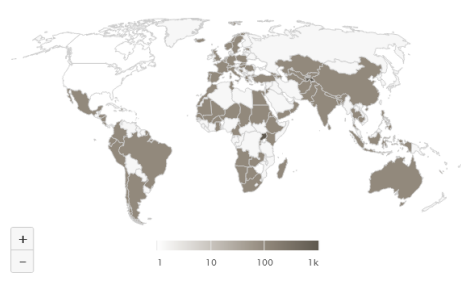

1092
Institutions

1300
SLM specialists

100
Countries

Nr. of case studies per country


Location of documented SLM

Main purpose(s) of the Technology (land user's perspective)

43.05%	reduce, prevent, restore land degradation	771
34.95%	improve production	626
23.84%	create beneficial economic impact	427
14.24%	conserve ecosystem	255
13.74%	adapt to climate change/ extremes and its impacts	246
10.94%	preserve/ improve biodiversity	196
10.22%	reduce risk of disasters	188
8.54%	create beneficial social impact	153
6.25%	protect a watershed/ downstream areas - in combination with other Technologies	112

Land use types



Addressing shallow landslides by using wooden pole structures. [Bosnia and Herzegovina]

Possibility

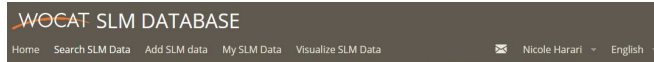
Sistema Silvopastoril [Colombia]

Sistema silvopastoril conformado por una matriz de pasto (Brachiaria sp.) con árboles fijadores de nitrógeno (Leucaena leucocephala) delimitado por cerca viva de piñon (xxxx). Contribuye a incrementar la productividad ganadera y reducir la degradación del suelo.

Compiler: Luisa F. Vega 07/06/2018 4:09 a.m.

SLM Technology / Approach Summary

- ✓ automatically generated
- ✓ in all (available) languages
- ✓ used for good practices compilations; learning materials for e.g. extension services; knowledge products, etc.



Highly Diversified Cropping in Live Trellis System [Philippines]
 Creation: 03/11/2017 7:16 a.m. Update: 09/05/2019 3:48 p.m.
 Compiler: [Philippine Overview of Conservation Approaches and Technologies](#) Editor: [Alexandra Gavilano, Ursula Gasmpert](#)
 Reviewers: [Alexandra Gavilano, Ursula Gasmpert](#)
 Kakawate as live trellis "baling"
 technologies_1930 - Philippines

EN

Print summary See history

Full summary as PDF
 Full summary as PDF for print
 Full summary in the browser
 Full summary (unformatted)

Highly Diversified Cropping in Live Trellis System
 Kakawate as live trellis "baling"

DESCRIPTION
 Gliricidia septium locally known as kakawate is a leguminous tree species used as a live trellis for vegetable and fruit crops. It is a small to medium-sized tree with a dense canopy and is suitable for growing in the tropics. The technology involves planting Kakawate trees in rows, with vegetable and fruit crops growing on a trellis system supported by the Kakawate trees. This system helps improve soil fertility, reduce erosion, and increase crop yields. The technology is suitable for small-scale farmers and is easy to adopt and maintain.

TECHNICAL DRAWING
 Technical specifications
 Kakawate cuttings are planted with around 3 meters high for every 3-6 chayote, bean, cucumber, lettuce or other vegetables.

ESTABLISHMENT AND MAINTENANCE
 Calculation of inputs and costs
 • Costs are calculated per hectare
 • Currency used for cost calculation: US Dollar (USD)
 • Exchange rate (to USD): 1 USD = 67.00 PHP
 • Average wage cost of hired labor: 100.00 PHP/day

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

CLIMATE CHANGE
 Adoption and adaptation
 Percentage of land users in the area who have adopted the Technology
 single cases/ experimental
 1-10%
 10-50%
 more than 50%

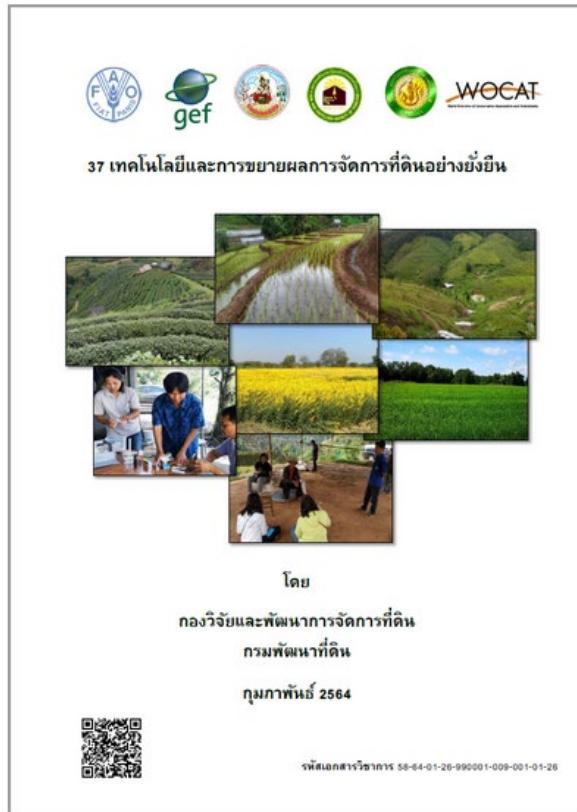
CONCLUSIONS AND LESSONS LEARNED
 Strengths/ land user's view
 (1) Increase farm income
 (2) Diverse farm produce
 (3) Easy to establish, no need for technical knowledge to establish
 (4) Inexpensive
 (5) Organic farming

Weaknesses/ disadvantages/ risks: land user's view
 (1) Pest infestation (1) Pesticide application

Weaknesses/ disadvantages/ risks: compiler's or other key resource person's view
 (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. (1) 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. This would highlight initiatives of the local farmers situated in remote areas in terms of managing the land productively and sustainably.

Example: GEF/FAO DS-SLM

national level

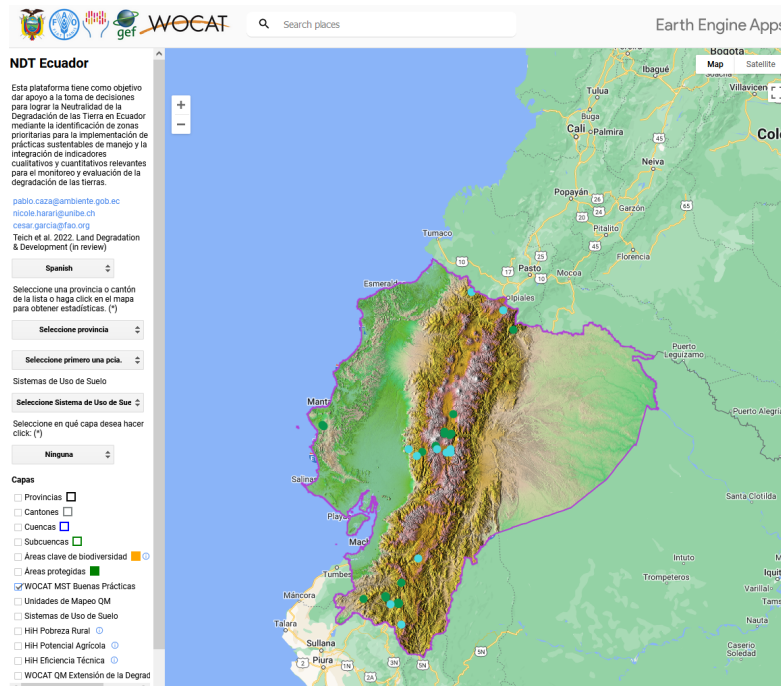


37 เทคโนโลยีและการขยายผลการจัดการที่ดินอย่างยั่งยืน

โดย
กองวิจัยและพัฒนาการจัดการที่ดิน
กรมพัฒนาที่ดิน
 กุมภาพันธ์ 2564

รหัสเอกสารวิชาการ 58-64-01-26-990001-009-001-01-26

national level



NDT Ecuador

Esta plataforma tiene como objetivo dar apoyo a la toma de decisiones para lograr la Neutralidad de la Degradación de la Tierra en Ecuador mediante la identificación de zonas prioritarias para la implementación de prácticas sustentables de manejo y la integración de indicadores cualitativos y cuantitativos relevantes para el monitoreo y evaluación de la degradación de las tierras.

Spanish

Seleccione una provincia o cantón de la lista o haga click en el mapa para obtener estadísticas (*)

Seleccione provincia

Seleccione primero una pcd.

Sistemas de Uso de Suelo

Seleccione Sistema de Uso de Suelo

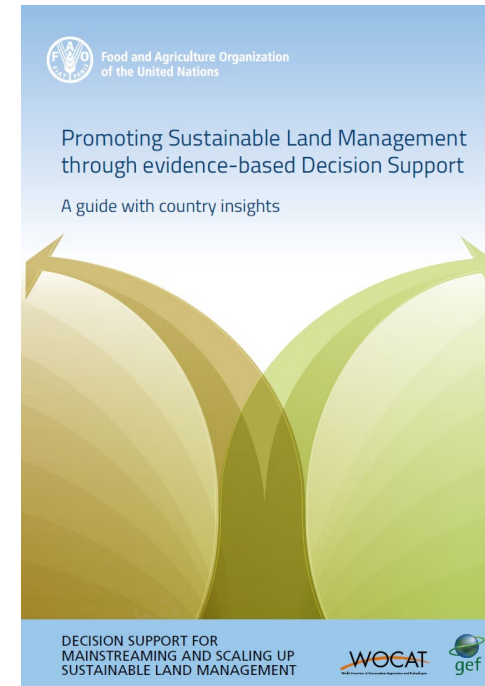
Seleccione en qué capa desea hacer click (*)

Ninguna

Capas

- Provincias
- Cantones
- Cuencas
- Subcuencas
- Áreas clave de biodiversidad
- Áreas protegidas
- WOCAT MST Buenas Prácticas
- Unidades de Mapeo QM
- Sistemas de Uso de Suelo
- HH Puntaje Rural
- HH Potencial Agrícola
- HH Eficiencia Técnica
- WOCAT QM Extensión de la Degradación

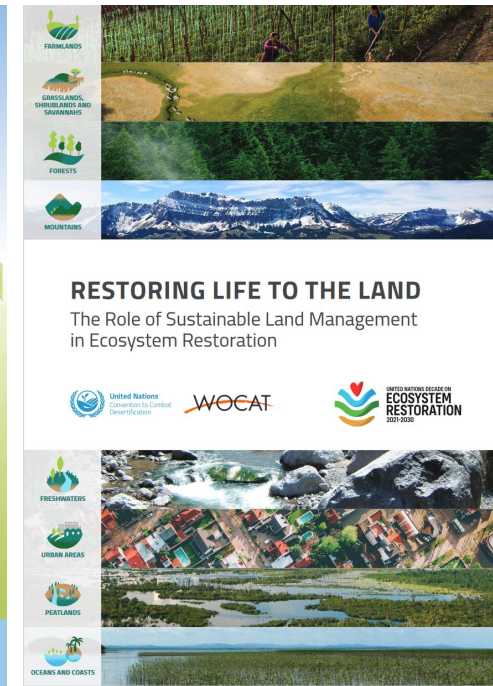
global level



Promoting Sustainable Land Management through evidence-based Decision Support

A guide with country insights

DECISION SUPPORT FOR MAINSTREAMING AND SCALING UP SUSTAINABLE LAND MANAGEMENT



RESTORING LIFE TO THE LAND

The Role of Sustainable Land Management in Ecosystem Restoration

United Nations Convention to Combat Desertification

WOCAT

UNITED NATIONS PROGRAM ON ECOSYSTEM RESTORATION 2021-2030

- ✓ harmonized, standardized, open access
- ✓ co-produced, co-designed
- ✓ different audiences and levels

Good practices shared through WOCAT included in other platforms

Framework for Ecosystem Restoration Monitoring (FERM)



The screenshot displays the WOCAT platform interface. On the left, a sidebar contains navigation options: 'Search for locations', 'Explore Data', and 'Map'. The 'Map' section is active, showing a world map with numerous red dots representing good practices. The search panel on the right includes a search bar, filters for 'Ecosystem', 'Region', 'Country', and 'Language', and a 'SEARCH' button. Below the search panel, a list of results is shown, with the first entry highlighted:

PICTURE	Title	Source/Logo
	Agroforestry Farming Model Location: Nigeria Project: Shea Agroforestry Farming Model Description: (30-40 words) Organization: Global Shea Alliance Compiler: Marie Published: 16/11/2022 Updated: 16/11/2022	

Good practices shared through WOCAT included in other platforms

UNCCD Drought Toolbox and upcoming UNCCD Sand and Dust Storm Toolbox



Overview Drought Initiative News & stories **Toolbox** Resources

Monitoring and early warning

Vulnerability and risk assessment

Risk mitigation measures

About the toolbox

Drought planning

About the Drought Toolbox

The Drought Toolbox provides tools, case studies, and other resources in order to support the design of the National Drought Policy Plan with the aim of boosting the resilience of people and ecosystems to drought.

The drought toolbox collates a large number of tools organized into three modules:

PILLAR 1

Monitoring and early warning

EXPLORE TOOLS AND DATA

PILLAR 2

Vulnerability and risk assessment

EXPLORE TOOLS AND DATA

PILLAR 3

Risk mitigation measures

EXPLORE TOOLS AND DATA



Overview Coalition News & stories **Toolbox** Resources

Mapping and monitoring SDS sources

Observation, monitoring, forecasting & early warning

Risk and vulnerability assessment

Source control and management

Impact mitigation

About the toolbox

Sand and Dust Storms Toolbox

The SDS Toolbox provides tools, guidance and information which can be used to identify the sources of sand and dust storms, develop and implement management policy, plans and strategies, assess risks and vulnerabilities to SDS, understand how to observe, monitor, forecast and provide warnings of SDS and develop and implement ways to mitigate the impacts of sand and dust storms.

INTRODUCTION

Getting started

EXPLORE THE TOOLBOX

MODULE 1

Mapping and monitoring SDS sources

EXPLORE TOOLS AND GUIDANCE

MODULE 2

Observation, monitoring, forecasting & early warning

EXPLORE TOOLS AND GUIDANCE

MODULE 3

Risk and vulnerability assessment and mapping

EXPLORE TOOLS AND GUIDANCE

MODULE 4

Source control and management

EXPLORE TOOLS AND GUIDANCE

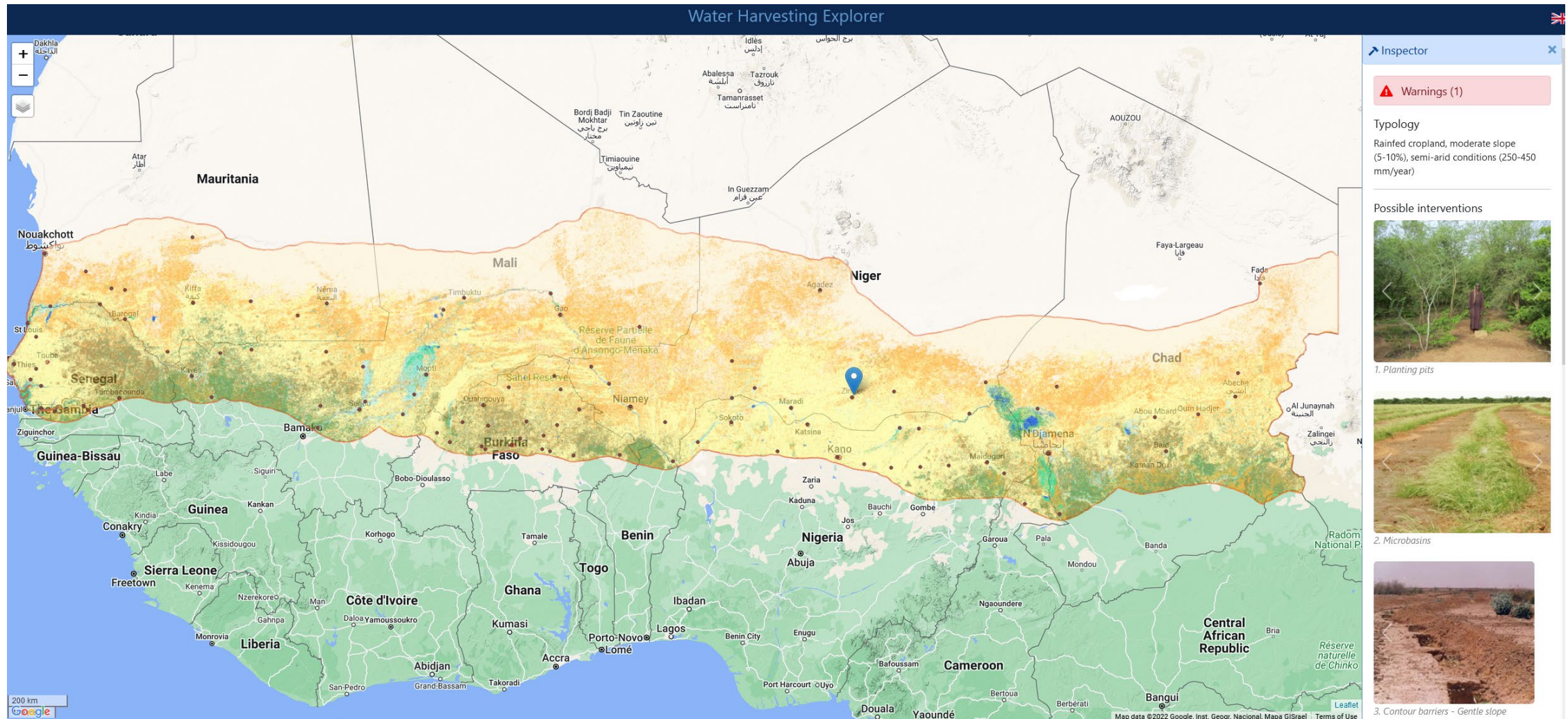
MODULE 5

Impact mitigation

EXPLORE TOOLS AND GUIDANCE

Good practices shared through WOCAT included in other platforms

Water Harvesting Explorer



Global WOCAT SLM Database good practices integration into LDN Decision Support apps - GEF/FAO DSL IP

Earth Engine Apps

Drylands IP

[Click here for more information about this project.](#)

For questions and feedback please contact:

nicole.haran@unibe.ch
Ingrid.Teich@fao.org
marcelo.rezende@fao.org

Close info panel

English

Choose a country from the list below or click on the map to get statistics. (*)

Select country

Select country first

Select subregion

Select which layer you want to click on: (*)

Countries

Layers

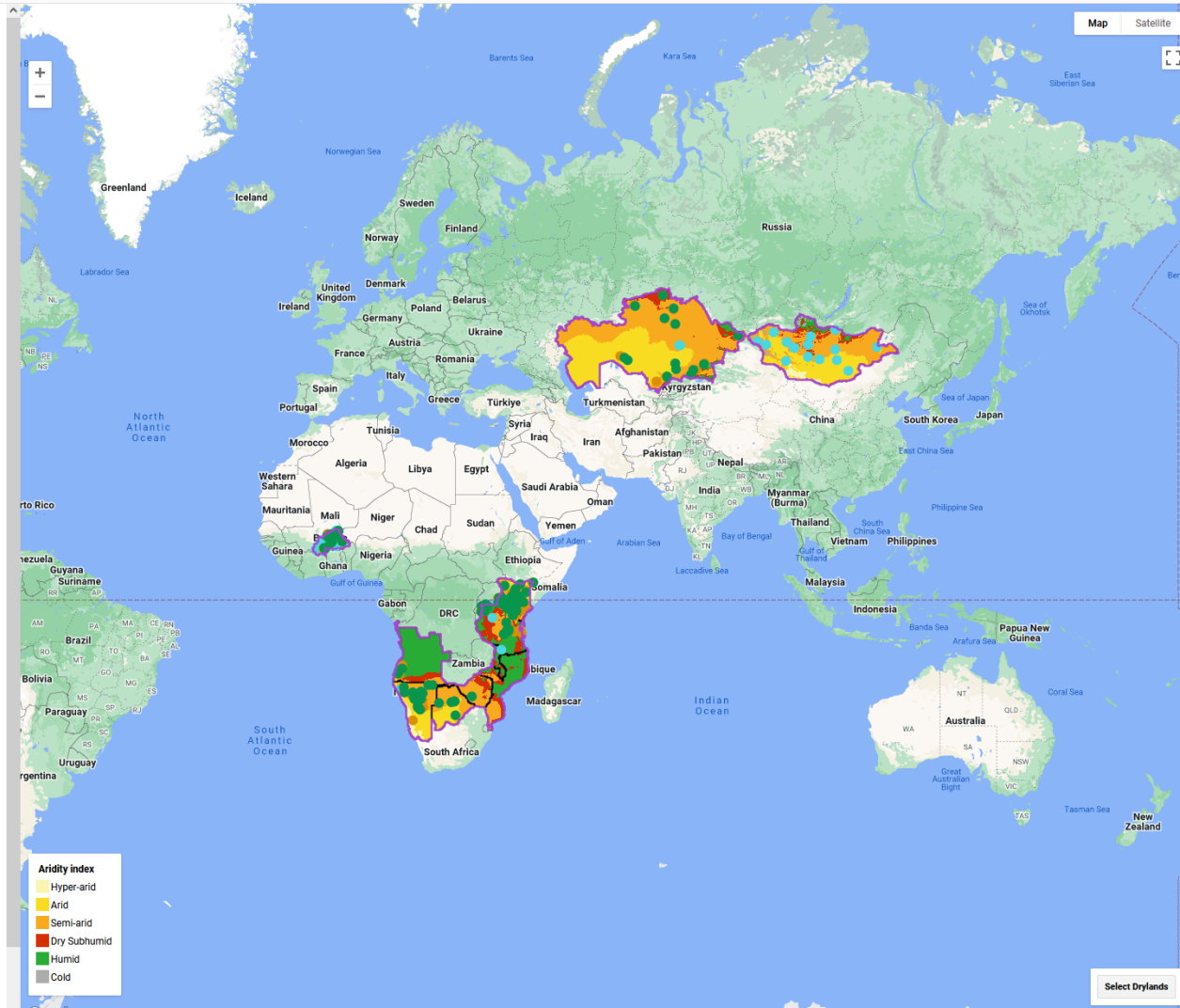
- Countries
- Provinces
- Project Sites
- DSL-IP Subregions
- WOCAT SLM best practices
- Key Biodiversity Areas
- Protected Areas
- Ecoregion Protection Status
- Biomes
- Ecoregions
- Topography
- Land Cover (ESA) 2021
- Land Productivity Dynamics 2001-2022
- Soil Organic Carbon
- Precipitation Trend 2011-2021
- Mountains
- Net Primary Productivity 2022
- Areas of Importance for Conservation
- Forest Consensus Map
- Population density
- Ecosystem Functional Types
- Aridity Index
- SRTM Landform
- Forest Landscape Integrity Index
- Terrestrial Biodiversity Intactness
- Fire Index (Recurrence 2001-2021)

SDG 15.3.1

Multi-Criteria Analysis

Land Cover transition analysis

Front layer opacity: 1



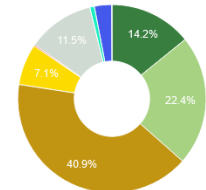
Selected area of interest

Name: Drylands
Area: 1,015,407,576.26 ha.
Vegetated area: 984,577,228.46 ha.
Declining productivity: 284,065,128.37 ha. (28.85%)
Increasing productivity: 143,697,488.33 ha. (14.59%)
SOC Mean: 392.17 t/ha
SOC Stock: 38,853,215,425.96 t
Land Protected Area: 191,010,670.23 ha. (18.81%)
Land Key Biodiversity Area: 101,982,262.21 ha. (10.04%)
Mountain Coverage: 231,176,312.64 ha. (22.77%)
NPP 2022 (total): 4,356,742,425.53 tC

General Charts

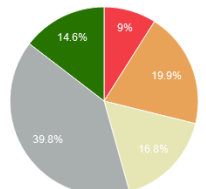
Land Cover (ESA) 2021

Tree covered Shrubland Grassland



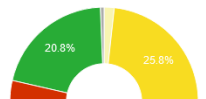
Land Productivity Dynamics 2001-2022

Declining Early sign of decline



Aridity index

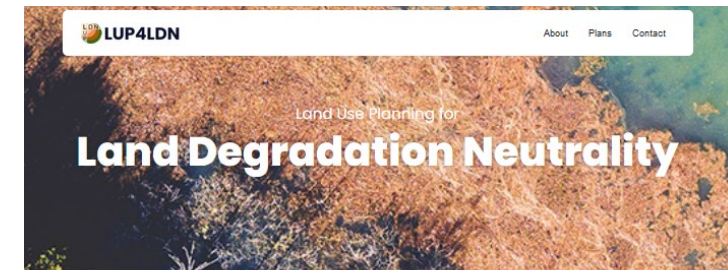
Hyper-arid Arid Semi-arid



Select Drylands

WOCAT Global SLM Database: Other linked tools, applications and databases

Carbon Benefits Project



Improving land condition through outreach, restoration, and research

To provide improved methods and tools for assessing land degradation and understanding the socio-economic conditions of vulnerable communities in affected areas through the integration of free and open platforms to support country level implementation and reporting to the United Nation Convention to Combat Desertification.

Mejorar la condición de la tierra a través de la divulgación, la restauración y la investigación

Proporcionar métodos y herramientas mejorados para evaluar la degradación de la tierra y comprender las condiciones socioeconómicas de las comunidades vulnerables en las áreas afectadas mediante la integración de plataformas abiertas y gratuitas para apoyar la implementación a nivel de país y la presentación de informes a la Convención de las Naciones Unidas de Lucha contra la Desertificación.



WHAT IS LUP4LDN!

A monitoring tool for Land Degradation LDN into a participatory land use plan interface that allows users to evaluate transition scenarios.

- Where** **V**
Is most crucial to focus land restoration efforts?
S
O
- Data** **A**
Global gridded maps for land use, soil organic carbon and socio-ecological indices
V
R
G










GET THE TOOL



WOCAT Global SLM Database: figures and challenges



Search SLM Data All SLM Data

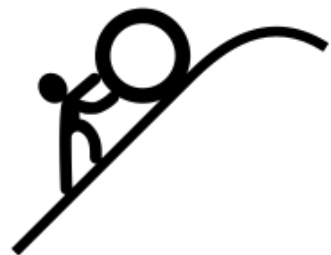
 <p>SLM Technologies An SLM Technology is a land management practice that controls land degradation and enhances productivity and/or other ecosystem services.</p> <p>View Add</p>	 <p>SLM Approaches An SLM Approach defines the ways and means used to implement an SLM Technology, including the stakeholders involved and their roles.</p> <p>View Add</p>	 <p>UNCCD PRAIS Practices Archived PRAIS SLM best practices, as previously shared through the UNCCD PRAIS system in the UNCCD reporting process.</p> <p>View</p>
 <p>Carbon Benefits Project (CBP) Tools for assessing the carbon benefits and greenhouse gas emissions of an SLM Technology.</p> <p>View Add</p>	 <p>Gender Tool for assessing gender-responsiveness of SLM Technologies and Approaches.</p> <p>View</p>	 <p>Economics Analysing the Costs and Benefits of Sustainable Land Management Technologies.</p> <p>View</p>
 <p>Sand and Dust Storm Sand and Dust Storm (SDS) relevant SLM Technologies</p> <p>View</p>	 <p>Drought Drought relevant SLM Technologies</p> <p>View</p>	 <p>LDN Tools and methods for monitoring, validating and implementing land degradation neutrality</p> <p>View</p>

- ✓ **Establishment** costs: approx. USD 1 million
- ✓ Average annual **maintenance** costs: approx. USD 100,000*
- ✓ Average annual **improvement** costs: approx. USD 100,000*



**Note: there are significant variations in costs from year to year*

- ✓ **Dependence on external companies** for programming and emergencies
- ✓ **Complexity of the database** (e.g. review system)
- ✓ Prioritization and bundling of **improvement requests/ tasks**
- ✓ **Ensuring standardization** when updating questionnaires or linking to other platforms
- ✓ Difficulty to make **changes to the API** due to various already linked platforms/tools



Key lessons and outlook

1. **Ensure standardization!** Work together to follow same standards, use same definitions
2. **Use, enhance and link** existing platforms to ease search for and facilitate exchange of knowledge
3. **Co-develop and create ownership** for knowledge, platforms and products to ensure durability

In relation to Decision 9/COP.15:

1. Ensure that all future database entries from GEF projects and programmes are clearly designated as such
2. Allow for analysis of database entries from GEF projects and programmes
3. Create awareness amongst GEF projects and programmes and enhance use of database
4. Monitor GEF-related entries and support assessments based on various parameters such as country, region, agro-climatic zone, land use type, degradation type, technology type, to create evidence and as basis for different knowledge products

Thank you!



Photo: RUA Cambodia

