



Food and Agriculture  
Organization of the  
United Nations

# Introduction to WOCAT

*Rima Mekdaschi Studer, CDE,  
University of Bern  
17.10.2023*

Asian knowledge hub on sustainable soil and land management



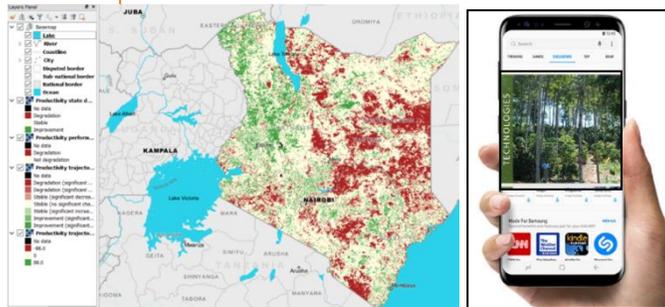
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# About WOCAT

## WOCAT a framework for knowledge management and decision support for SLM:



maintain global, open  
SLM network



harmonize and  
further develop  
**tools and methods**  
with partners



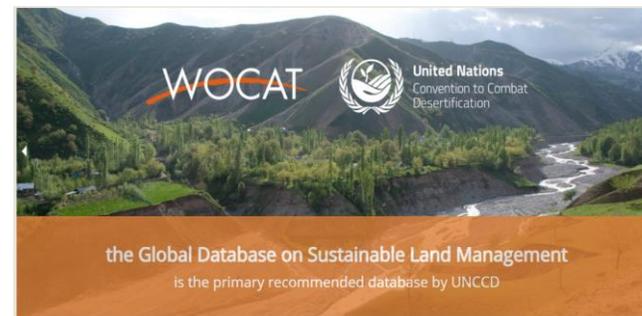
**WOCAT**



provide open access  
**global SLM data  
repository**



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



<https://www.wocat.net/en/about>

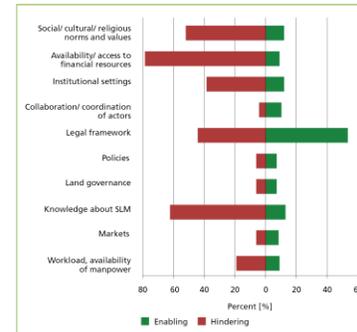
management  
Share, Learn, Inspire 3



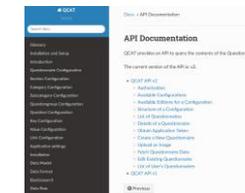
# Principles for knowledge management

WOCAT focuses on the following principles:

1. Tools and methods applied 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 for **different audiences**
7. Knowledge 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.

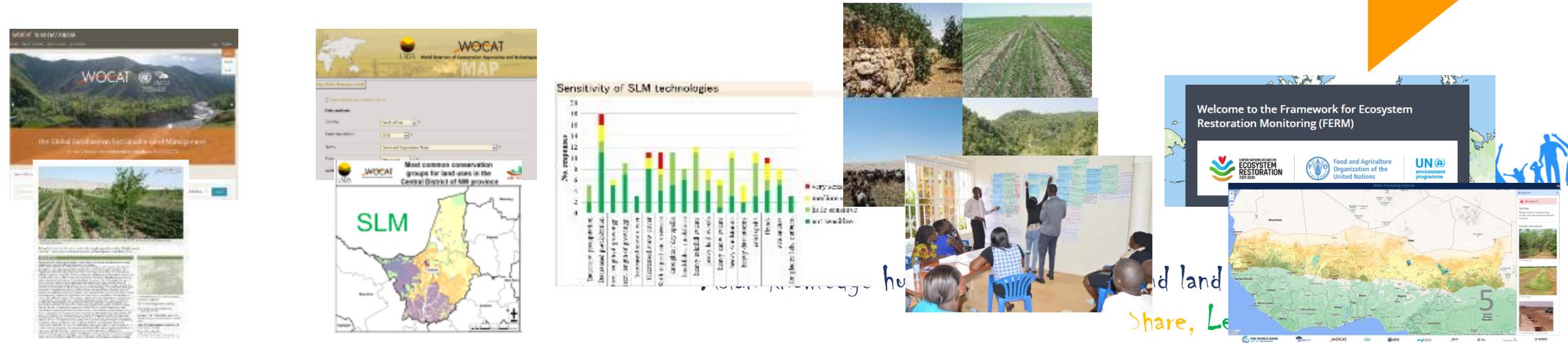
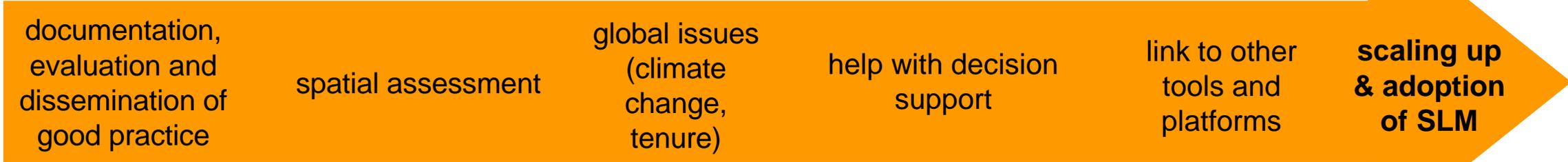
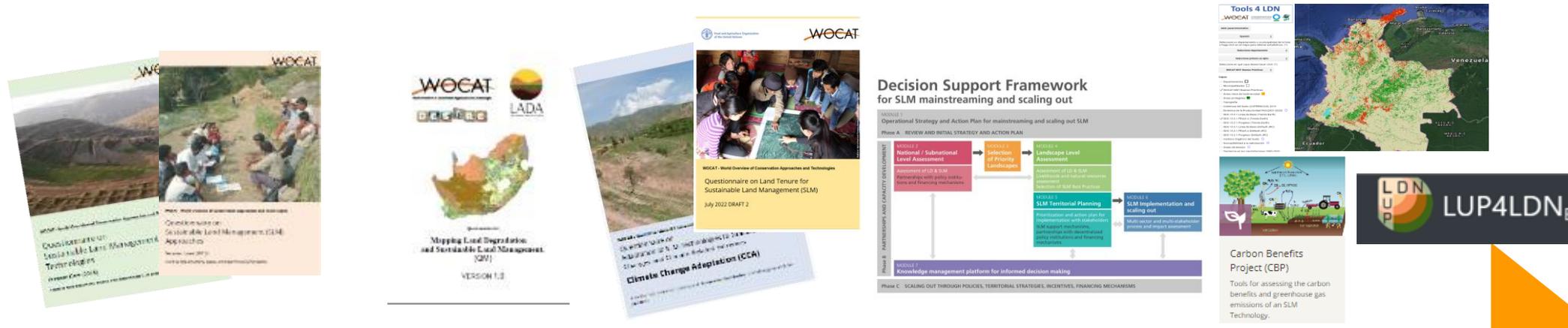


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# Tools and methods



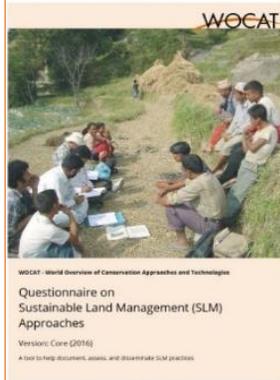
# WOCAT SLM Technologies and Approaches



Example: Keyhole Garden (Bangladesh)



An **SLM Technology** is a physical practice on the land that controls land degradation, enhances productivity, and/ or other ecosystem services. A Technology consists of one or more measures, namely agronomic, vegetative, structural, and management measures (WOCAT 2017).

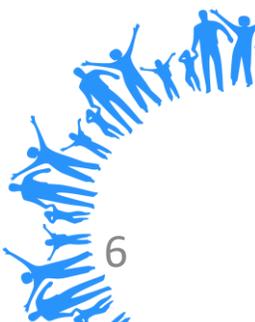


Example: Peer to peer pass-on approach with women (Bangladesh)



An **SLM Approach** defines the ways and means used to implement one or more SLM Technologies. It includes technical and material support, involvement and roles of different stakeholders, etc. An Approach can refer to a project/ programme or to activities initiated by land users themselves (WOCAT 2017).

SLM practice



# SLM Technologies in Southeast Asia: 115 Technologies



TECHNOLOGIES

**Use of Organic Fertilizers for Organic Crop Production on Infertile Soil**  
The organic farming was initiated by a group of Yasothon farmers since 1989 to produce organic rice used are the compost made from farm products and animal dungs, bio-fermented liquid from kitchen waste.  
**SLM specialists:** Yuthasong,Ratana,Putchane, SomsriNamsai,Suthakum,Kaoya,Arunin  
**Institution:** Land Development Department  
**Compilation Date:** 2018-10-10 | **Country:** Thailand



TECHNOLOGIES

**Wild cardamom plantation for sustainable forest management**  
Cardamom planting is a non timber forest product. Wild cardamom planting take place in traditional agriculture. The objectives of this technologies are to reach sustainable forest use and to generate income for local people.  
**SLM specialists:** Bouathong,ບົວທອງ,Souvanchieng,ສຸວັນຈິງ  
**Institution:** ເປົ້ນປະຊາຊົນ  
**Compilation Date:** 2017-12-05 | **Country:** Lao People's Democratic Republic



TECHNOLOGIES

**Use of solar water pumping to adapt to climate change**  
A solar water pump is a technology that uses solar panels to convert the solar power to electricity to pump water from an underground source of water. The use of solar water pump is to reduce the operation and maintenance cost, and contributing to climate change mitigation.  
**SLM specialists:** Phol Prom,Cheng Kuychoan,SOEM DA,Sarath,Phearak,ChhlathMao,Thun,Prasanna  
**Institution:** Farmer,Commune extension worker,District Office of Agriculture, Forestry and Fisheries  
**Compilation Date:** 2017-06-05 | **Country:** Cambodia



TECHNOLOGIES

**Highly Diversified Cropping in Live Trellis System**  
Gliricidia sepium locally known as "kakawate" served as live trellis / or anchorage for annual crops and as a natural erosion control measure. The technology is well-adopted in the community providing immediate income due to diversified farming.  
**SLM specialists:** Girlie,Calixto,Baldwin,Jemar,Mharicar,AriesUrriza,Dela Pena,Pine,Raquid,Torino  
**Institution:** Local Government of Nagcarlan, Laguna,Bureau of Soils and Water Management  
**Compilation Date:** 2017-03-03 | **Country:** Philippines



TECHNOLOGIES

**Agroforestry: Intercropping of vegetables between orange trees**  
Intercropping of chilies (or other short-term crops) between young orange trees is a type of agroforestry that makes ultimate use of land resources, saves time for maintenance and irrigation, and improves soil fertility by using manure as fertilizer, thereby reducing the use of chemicals.  
**SLM specialists:** Chantha Chhem,Rom,Mout,SivRerb,Larm,Dara Phusar  
**Institution:** Farmer,District Office of Agriculture, Forestry and Fisheries, Bavel,District Office of Agriculture  
**Compilation Date:** 2017-02-07 | **Country:** Cambodia



TECHNOLOGIES

**Mangroves as Buffer against Natural Hazards**  
Mangroves "bakauan" are planted in the island coast to form barriers and as first line of defense during storm surges.  
**SLM specialists:** Djolly Ma.,Wilfredo,Ace Wilfred,RufinoDinamling,Gultiano,Abarro II,Lofranco  
**Institution:** Bureau of Soils and Water Management,DENR-Community Environment and Natural Resources Talibon  
**Compilation Date:** 2016-10-08 | **Country:** Philippines



TECHNOLOGIES

**Water saving through reuse of return flow in paddy fields**  
Return flow from paddy fields is strategically collected before being lost to rivers and is reused as an effective source of agricultural water.  
**SLM specialists:** Van Tran Thi Ha  
**Compilation Date:** 2015-03-08 | **Country:** Viet Nam



TECHNOLOGIES

**Crop diversification with the application of rotation techniques**  
Crop diversification is the practice of simultaneously cultivating two or multiple varieties of crops in a given area whilst at the same time applying crop rotation and/or intercropping. In this case study the land user has been practicing crop diversification with eleven different crop varieties.  
**SLM specialists:** Sombo Khim,Se Keo,Thon,BunleangPhrum,Chhim  
**Institution:** Land User,Agricultural Office of Rolea B'ier.  
**Country:** Cambodia



TECHNOLOGIES

**Conversion of rocky area to grazing area for livestock management**  
Forage and Livestock Management  
**SLM specialists:** Khamthy,AmphoneKeosymonkong,Chaluensunk  
**Institution:** District of Agriculture and Forest Office  
**Country:** Lao People's Democratic Republic



TECHNOLOGIES

**Planting a Halophyte (Sporobolus virginicus, "Dixie grass") to rehabilitate severely saline soil**  
Planting a halophyte - Dixie grass (Sporobolus virginicus) - aims to increase the area of land usable by farmers and to prevent expansion of severely saline soils. Dixie grass can be utilised as cattle feed. The Land Development Department has been involved in developing and disseminating this technology.  
**SLM specialists:** Pirach Pongwichian,Kamontip Sasithorn,Jutharat Rattanapunya,winaï chombut,somsri arunin,CharongMunkam  
**Institution:** 6 Bann Donpae Moo 8 Kut Chok Sub-district Bua Yai District Nakhon Ratchasima Province.  
**Country:** Thailand



# SLM Technologies in Southern Asia: 143 Technologies



**Minimizing soil erosion through Natural Vegetative Strip (NVS) practice in slope cultivation**  
Natural Vegetative Strips (NVS) are narrow strips of naturally growing grasses and herbs intentionally left to reduce soil erosion during heavy rains.  
**SLM specialists:** Md. Mahbulul, Md. Shahinul Islam  
**Institution:** Soil Conservation and Watershed Management Center  
**Compilation Date:** 2019-02-09 | **Country:** Bangladesh



**Crop-livestock integration to enhance soil productivity**  
Crop-livestock integration improves nutrient circularity and soil productivity: solid and liquid organic fertilizers from crop residues, manure, and compost are used for vegetables and tea.  
**SLM specialists:** Shantha, Nimal, Chand, Nilanthika, Kallora, Gunasena, Rajapaksha, Beddegama  
**Compilation Date:** 2022-06-02 | **Country:** Sri Lanka



**Recycling rice husks in Sri Lanka as a biochar-based slow-release urea fertilizer**  
Rice husks, a waste product generated in rice mills, can release its carbon as a greenhouse gas (GHG) to intercalating (filled) with urea can produce a slow-release nitrogen (N) fertilizer that improves N-use efficiency.  
**SLM specialists:** Tharindu Kulasinghe, Lakmini, Renuka, Lekam Ralalage, Vimalawathi, Saman Disnayake  
**Institution:** Coconut Research Institute, University of Peradeniya  
**Compilation Date:** 2021-08-05 | **Country:** Sri Lanka



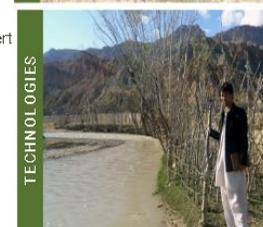
**Floating Garden**  
Floating Garden is a traditional technology, practiced in the southern parts of Bangladesh locally called 'shad'. It involves growing seedlings in areas where farming land is scarce and where the land is flooded or water logged for more than 100 days a year.  
**SLM specialists:** Md. Zahid Hasan  
**Institution:** HELVETAS Swiss Intercooperation  
**Compilation Date:** 2016-05-10 | **Country:** Bangladesh



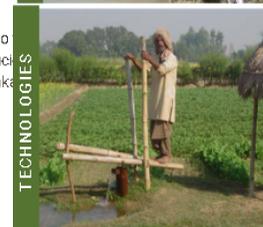
**Recharge Ponds and Recharge Trenches**  
Recharge ponds (Chals or khals) and recharge trenches (khanti) are common methods to catch the surface runoff and recharge the natural spring recharge in the middle mountain regions.  
**SLM specialists:** Jagdamba Prashad, Joshi  
**Institution:** Naikina Forest Head Council (Gram Panchayat)  
**Compilation Date:** 2019-04-07 | **Country:** India



**Staggered Contour Trench**  
Carbon trenches with soil bonds built along contours in staggered design.  
**SLM specialists:** Aqila Haidery, Sanjeev Bhuchar, Nabi Azimi, Abbas Khoshal, Reza Ahmadi, Aliaver, Jallil Sirat, Altaf  
**Institution:** AKF  
**Compilation Date:** 2015-01-10 | **Country:** Afghanistan



**Riverbank stabilization**  
A low cost and an easy activity for protecting agricultural lands, gardens and public infrastructure from the damages of flash flood.  
**SLM specialists:** Shabir Shahem, Aqila Haidery, Abdul Ghafar Saimankhil  
**Institution:** HELVETAS Swiss Intercooperation, Afghanistan  
**Compilation Date:** 2015-12-10 | **Country:** Afghanistan



**Treadle Pump**  
A treadle pump is a foot operated water lifting device that can be used by smallholder farmers to irrigate their land in places where electricity is not available.  
**SLM specialists:** Shreedip Sigdel, KOMAL PRADHAN, Purusottam Gupta  
**Institution:** IDE-Nepal  
**Compilation Date:** 2013-01-03 | **Country:** Nepal



**Vermicomposting**  
Vermicomposting or worm composting is a simple technology for converting biodegradable waste into organic manure with the help of earthworms.  
**SLM specialists:** Shreedip Sigdel, Samden Lama Sherpa  
**Institution:** ICIMOD  
**Compilation Date:** 2013-01-03 | **Country:** Nepal



**Napier hedgerow establishment on steep dryland slopes [Bhutan]**  
Establishment of vegetative grass hedges with Napier grass on steep to very steep dryland slopes.  
Compiler: karma dorji | 02/24/2014 2:39 p.m.

# SLM Approaches in Southeast Asia: 41; Southern Asia: 67



APPROACHES

Returning Life to Mae Chaem Watershed by Integrated Land and Water Management  
**SLM specialists:** Somjit Lertdisayawan, Sasim Chanomkiew, Tanomkwan Tipvong  
**Compilation Date:** 2018-12-09 | **Country:** Thailand



APPROACHES

Women practices SLM through Vanilla cultivation  
**SLM specialists:** Bandara Rotawewa  
**Compilation Date:** 2019-03-01 | **Country:** Sri Lanka



APPROACHES

Volunteer Soil Doctor Network: A Driving Force for Sustainable Land Development  
**SLM specialists:**  
**Compilation Date:** 2018-10-10 | **Country:** Thailand



APPROACHES

Early Warning Message Dissemination  
**SLM specialists:**  
**Institution:** Bangladesh Red Crescent Society  
**Compilation Date:** 2016-04-10 | **Country:** Bangladesh



APPROACHES

Sustainable Forest Management Project (Extension Phase)  
**SLM specialists:**  
**Institution:** Forestry Section, National Agriculture, Forestry and Rural Development  
**Country:** Lao People's Democratic Republic



APPROACHES

Learning about no-till methods through farmer-to-farmer dissemination  
**SLM specialists:** Shreedip Sigdel, Sabita Aryal  
**Institution:** Local Initiatives for Biodiversity, Research and Development (LI-BIRD)  
**Compilation Date:** 2013-01-03 | **Country:** Nepal



APPROACHES

LANDCARE - Claveria Landcare Association (CLCA)  
**SLM specialists:** Romeo Villamin Labios  
**Institution:** ICRAF-Southeast Asian Regional Program, Bogor, Indonesia, ICRAF-Philippines, Claveria Research Site  
**Country:** Philippines



APPROACHES

Participatory SLM Action Planning  
**SLM specialists:** Karma Dorji  
**Institution:** NSSC, DoA, MoAF, RGoB  
**Country:** Bhutan



APPROACHES

Community Safety Nets - Establishment of rice seed banks at village level  
**SLM specialists:**  
**Institution:** SOFDEC/LAREC, Society for Community Development in Cambodia  
**Country:** Cambodia



APPROACHES

E-Prakriti - An Approach Towards GIS Based Planning For Natural Farming  
**SLM specialists:** Santosh Gupta  
**Country:** India

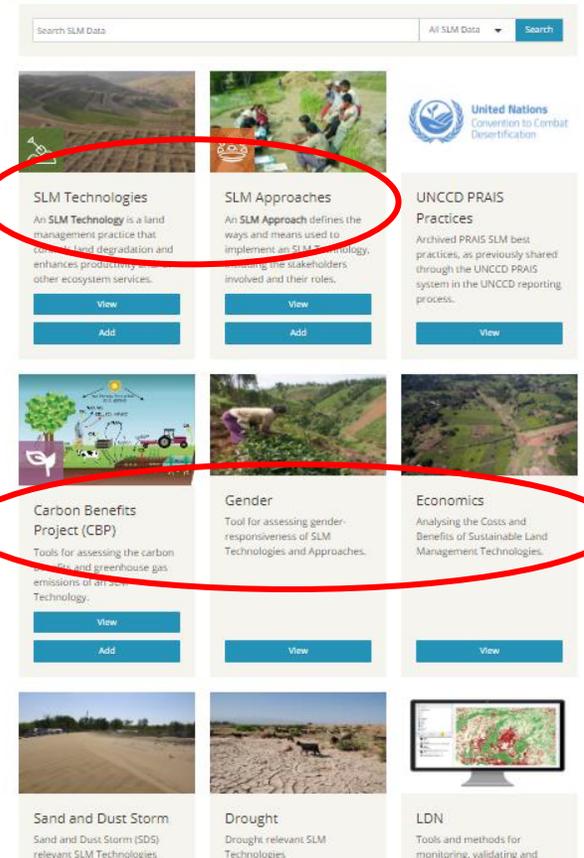
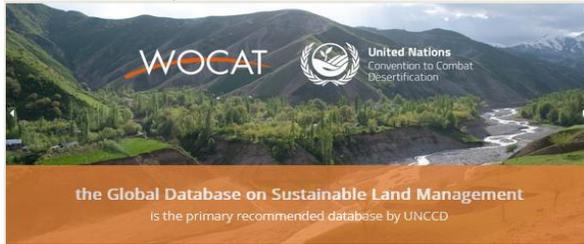


# Who should document?

- ❑ A team of SLM specialists - including land users - with different backgrounds and experiences, who know the details of the technology/approach (technical, financial, socio-economic).
- ❑ ... using existing documents and seeking advice from other SLM specialists and SLM specialists and land users where possible.
- ❑ ... compiler enters assessed and agreed upon data into database and checks all information and data



# WOCAT Global SLM Database



- ✓ free upload and worldwide sharing of countries' good SLM practices in English, Spanish, French, Russian, Chinese, Lao, Khmer, Thai, Portuguese, Mongolian
- ✓ free access to 2300+ proven, field-tested SLM practices (T&A) from over 135 countries
- ✓ database filter to find relevant SLM practices for specific landscapes, land uses etc.
- ✓ standardized and automatically generated summary
- ✓ possibility to integrate national SLM good practices in national/project/global platforms through API
- ✓ modules for in-depth knowledge on particular topics (e.g. CC adaptation, Carbon benefit, gender, tenure)

## Key Numbers

- **2368** SLM Practices published from **136** countries by **463** users.
  - 1394 SLM Technologies
  - 523 SLM Approaches
  - 442 UNCCD PRAIS Practices
- **54** new practices published in the past 90 days.



soil and land management

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# WOCAT Global SLM Database in Lao

**WOCAT SLM DATABASE**

11756 Rima Mekdaschi Studer ມາອາລາວ

ຫາທ້າຍຄືດ ຄົ້ນຫາຕາມຂໍ້ມູນການຄຸ້ມຄອງທີ່ດິນແບບຍືນຍົງ ຂໍ້ມູນ ການຄຸ້ມຄອງທີ່ດິນແບບຍືນຍົງ ຂໍ້ມູນ ການຄຸ້ມຄອງທີ່ດິນແບບຍືນຍົງຂອງຮ່ວມ Visualize SLM Data

**ຖານຂໍ້ມູນ ທົ່ວໂລກ ກ່ຽວກັບ ການຄຸ້ມຄອງ ທີ່ດິນແບບຍືນຍົງ**  
is open access and contains over 2000 SLM practices.

ຖານຂໍ້ມູນ ການຄຸ້ມຄອງທີ່ດິນແບບຍືນຍົງ ຈົນຕົວໂລກ ຂອງ WOCAT

ຂໍ້ມູນ ສຳລັບມາກເສ່ວນ ສື່ນທີ່ສື່ນມາຂອງ ສິ່ງທານອະນຸປະສາສາ ມີຄວາມກ່າວຫາການກາຍຜົນປະໂຫຍດ



**ຈຳນວນທີ່ສຳຄັນ**

- 2368 ສຳລັດ ການຈັດຕັ້ງປະຕິບັດ ການຄຸ້ມຄອງທີ່ດິນແບບຍືນຍົງ ຈາກ 1360 ຫລາຍ ໂດຍ 463 ຜູ້ກໍ່ໃສ່.
  - 1394 ຜູ້ກໍ່ໃສ່ໂລກການຄຸ້ມຄອງທີ່ດິນແບບຍືນຍົງ
  - 523 ວິທີທາງ ຈົນການຄຸ້ມຄອງທີ່ດິນແບບຍືນຍົງ
  - 442 ການຈັດຕັ້ງປະຕິບັດ UNCCD FRAIS
- 54 new practices published in the past 90 days.

**ເຕັກໂນໂລຢີໃໝ່ຂອງການຄຸ້ມຄອງທີ່ດິນແບບຍືນຍົງ**  
ການສ້າງ: 10/16/2023 6:20 p.m. ບົບປຸງ: - ຜູ້ສັງລວມຂໍ້ມູນ [Rima Mekdaschi Studer](#) ບັນນາທິການ - ຜູ້ຖືບໜ່ວຍຄືນ -

ສະຖານະພາບ ການຫັບຫວນຄືນ  
[ຮຽນຮູ້ເພີ່ມເຕີມກ່ຽວກັບ ຂອບເຂດ WOCAT ຕາມການເຝິກ ການຈັດການ ຄຸ້ມຄອງທີ່ດິນ ແບບຍືນຍົງ.](#)

ຫ້າມແມ່ນ Compile ຂອງເຕັກໂນໂລຢີການຄຸ້ມຄອງທີ່ດິນແບບຍືນຍົງນີ້.  
ຜູ້ປ່ອນຂໍ້ມູນ ມີທ່າທີ່ ປ່ອນຂໍ້ມູນ ແລະ ສົ່ງເສີມ ສຳລັບການຄຸ້ມຄອງທີ່ດິນແບບຍືນຍົງ (WOCAT) ມີຮ່ວມຈົນການສ້າງຜົນປະໂຫຍດ. ເມື່ອສຳລັດ ການປ່ອນຂໍ້ມູນ ຜົນປະໂຫຍດແລ້ວ ຜູ້ປ່ອນຂໍ້ມູນ ສາມາດ ສົ່ງໃຫ້ຜູ້ຖືບໜ່ວຍຄືນ ຂອບເຂດ ໄດ້ເລີຍ.

ສະບາຍດີ Rima. ຍິນດີຕ້ອນຮັບ / ວິທີການຄຸ້ມຄອງທີ່ດິນແບບຍືນຍົງ SLM ເຕັກໂນໂລຢີ ທ່ານກຳລັງຈະເພີ່ມຂໍ້ມູນຈາກ ແບບສອບຖາມເພີ່ມກ່ຽວກັບ ເຕັກໂນໂລຢີການຄຸ້ມຄອງທີ່ດິນແບບຍືນຍົງ (QT) / ວິທີການ (QA). ຖ້າທ່ານແນ່ນອນກ່ຽວກັບ ທ່ານກຳລັງໃສ່ແບບສອບ ກະລຸນາ ເຂົ້າຜູ້ຂໍ້ມູນການຮ່ວມຮ່ວມ ແລະ ອ່ານກ່ຽວກັບຂອບເຂດ WOCAT ຜູ້ເຝິກ ການຈັດການ ຄຸ້ມຄອງທີ່ດິນ ແບບຍືນຍົງ.

ກະລຸນາເຮັດໃຫ້ຍິນດີຈຳວ່າ ທ່ານໄດ້ເລືອກການທີ່ຖືກຕ້ອງແລ້ວ. ທ່ານສາມາດປ່ຽນມາອາ ຢູ່ເລຂວາມືຜິວຂອງສູດຂອງທ່ານ. ແບບສອບຖາມທີ່ຜ່ານມາ PDF ສາມາດຜົນ [ດາວໂຫຼດບ່ອນນີ້.](#)

[ເຂົ້າຮຽນຮູ້ເພີ່ມ](#) [ມີເລີ່ມຄົ້ນປ່ອນຂໍ້ມູນ](#)

**ເບິ່ງຜາກສ່ວນ**

ຄວາມສົມບູນ: 0%

1. ຂໍ້ມູນທົ່ວໂປ	0/6	<a href="#">ເຕີ້ປະສອນນີ້</a>
2. ການອະທິບາຍ ເຕັກໂນໂລຢີ ຂອງການຄຸ້ມຄອງທີ່ດິນແບບຍືນຍົງ	0/7	<a href="#">ເຕີ້ປະສອນນີ້</a>
3. ການໃຈຕະກ ເຕັກໂນໂລຢີ ຈົນການຄຸ້ມຄອງ ດິນແບບຍືນຍົງ	0/8	<a href="#">ເຕີ້ປະສອນນີ້</a>
4. ຂໍ້ກຳນົດ, ກົດຈະນຳການປະຕິບັດ, ວັດຖຸດິບ, ແລະ ກຳໃສ່ຈ່າຍ	0/7	<a href="#">ເຕີ້ປະສອນນີ້</a>



# Search SLM Data: rice

WOCAT SLM DATABASE

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

11756 Rima Mekdaschi Studer English

rice All SLM Data

Your search results (54)

228  
Total SLM  
Practices

183 / 80.26 %  
Technologies

45 / 19.74 %  
Approaches

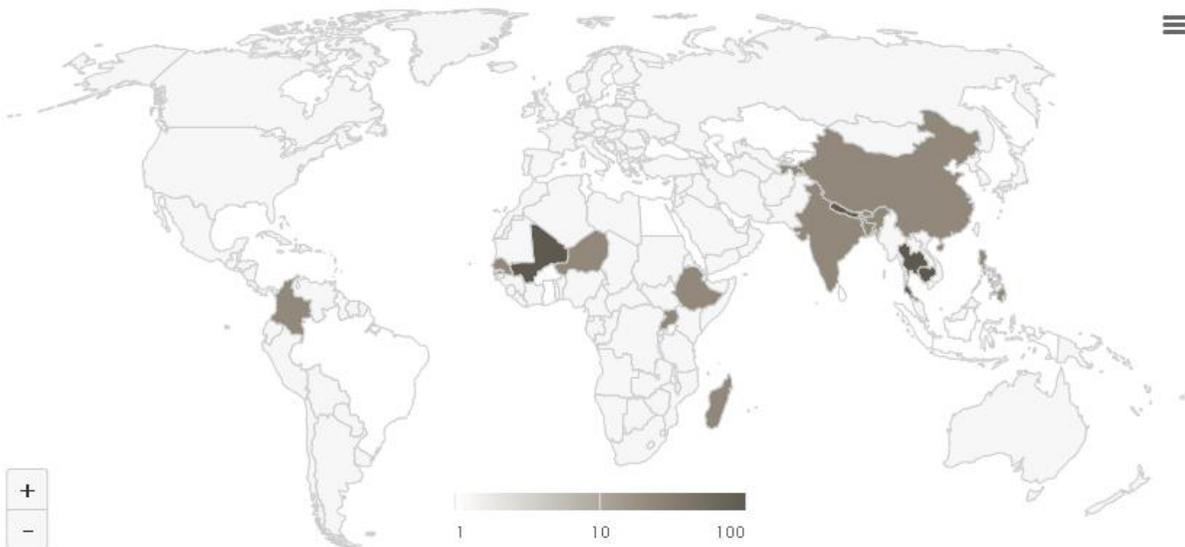
218  
Institutions

224  
SLM specialists

32  
Countries

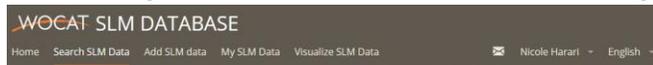
Nr. of case studies per country

Location of documented SLM



# 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: -  
 Reviewers: [Alexandra Savitana](#), [Ursula Gaeppeler](#)  
 Kakiwate as live trellis "balag"  
 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 [Philippines]**

**CLASSIFICATION OF THE TECHNOLOGY**  
 Main purpose: improve production, reduce, prevent, restore land degradation, conserve ecosystem, protect a watershed/ downstream, improve biodiversity, reduce risk of disasters, adapt to climate change/adapt, restore/rehabilitate severely degraded/ damaged land, create beneficial economic impact, create beneficial social impact  
 Purpose related to land degradation: prevent land degradation, reduce land degradation, restore/rehabilitate severely degraded/ damaged land, adapt to land degradation, not applicable  
 SLM group: agroforestry, improved ground/ vegetation cover, integrated soil fertility management

**DESCRIPTION**  
 Gliwickia septima locally known as kakawate, a small to medium-size various annual crops such as tomato, chili, eggplant, and okra are planted in the spaces between the trees. The kakawate trellis is made of trees and is very sturdy. It is used to support the crops. The technology has been a practice in the area for many years. Over the years, its effectiveness as

**TECHNICAL DRAWING**  
 Technical specifications: Kakawate cuttings are planted with around 3 meters high for every 3-6 chayaes, beans, cucumber, lettuce a

**ESTABLISHMENT AND MAINTENANCE**  
 Calculation of inputs and costs: Costs are calculated per hectare, Currency used for cost calculation: Philippine Peso (₱), Exchange rate (to USD): 1 USD = 66.67 ₱, Average wage cost of hired labor: 100 ₱/day  
 Establishment activities: 1. Clearing of the area (trimming) frs, 2. Planting of kakawate cuttings (M), 3. Installation of metal wire and pi, 4. Planting of annual crop: tomato, 5. Planting of annual crop: cucumber, 6. Planting of annual crop: chayaes  
 Establishment inputs and costs (per hectare): Specify input, Labour: Manual labour: Weeding, Manual labour: Planting, Manual labour: Fertilizer Application, Manual labour: Harvesting and Hat, Plant material: Kakawate cuttings (cuttings are abt 100grams per can), Cucumber @ 100grams per can, Chayaes seeds are abundant in the area, Inorganic fertilizer: Urea, Organic fertilizer: chicken dung, Pesticide  
 Construction material: Metal wire (can be used for a long time)  
 Total costs for establishment of th

**IMPACTS**  
 Socio-economic impacts: Crop production: crop quality, foder 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  
 Socio-cultural impacts: food security/ self-sufficiency, GSDM food diversity, innovation

**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%  
 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? climatic change/ extremes, changing markets, labour availability (e.g. due to migration)  
 Conclusions and lessons learnt: 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  
 Strengths: compiler's or other key resource person's view: (1) Low production cost, (2) Easy to maintain, (3) Effective erosion control measure, (4) Increase farm yield and income, (5) Diverse farm produce, (6) Easy to transfer  
 Weaknesses/ disadvantages/ risks: land user's view: (1) Pest infestation, (2) 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, (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 initiatives of the local farmers situated in remote areas in terms of managing the land productively and sustainably.

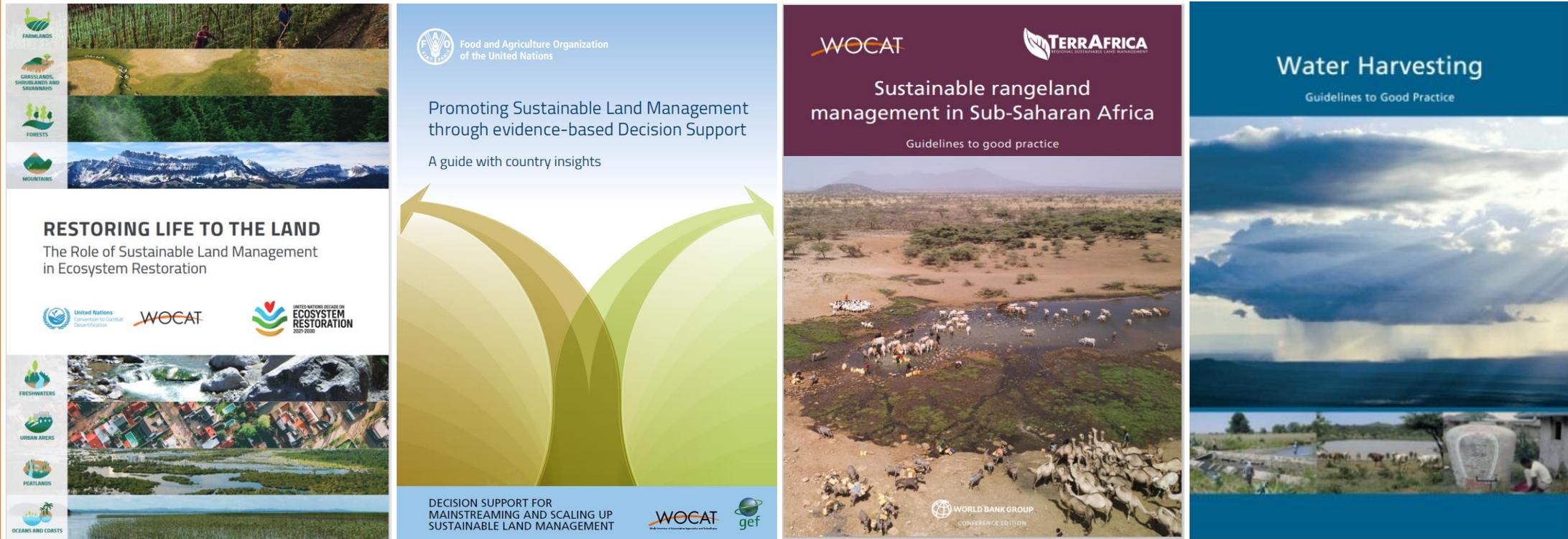
**Where?**  
 Land use: Cropland - Annual cropping  
 Agro-climatic zone: humid  
 Ecological impacts: soil cover, soil loss, soil compaction, soil organic matter/ below ground C, vegetation cover, pest/ disease control, landslides/ debris flows, emission of carbon and greenhouse gases  
 Specifications on climate: Average annual rainfall in mm: 1500.0  
 Off-site impacts: downstream flooding (undesired)  
 Cost-benefit analysis: Benefits compared with establishment costs: Short term returns, Long term returns; Benefits compared with maintenance costs: Short term returns, Long term returns  
 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%  
 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? climatic change/ extremes, changing markets, labour availability (e.g. due to migration)  
 Conclusions and lessons learnt: 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  
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**What? How? Technical specifications? Costs?**

**Asian kr**



# Knowledge products: global and regional level



- On specific themes, in collaboration with numerous partners
- Collection of representative good practices entered in the WOCAT database
- Data analysis and guidelines for specialists

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# Knowledge product WOCAT&UNCCD

## UN Decade on Ecosystem Restoration (UNDER)

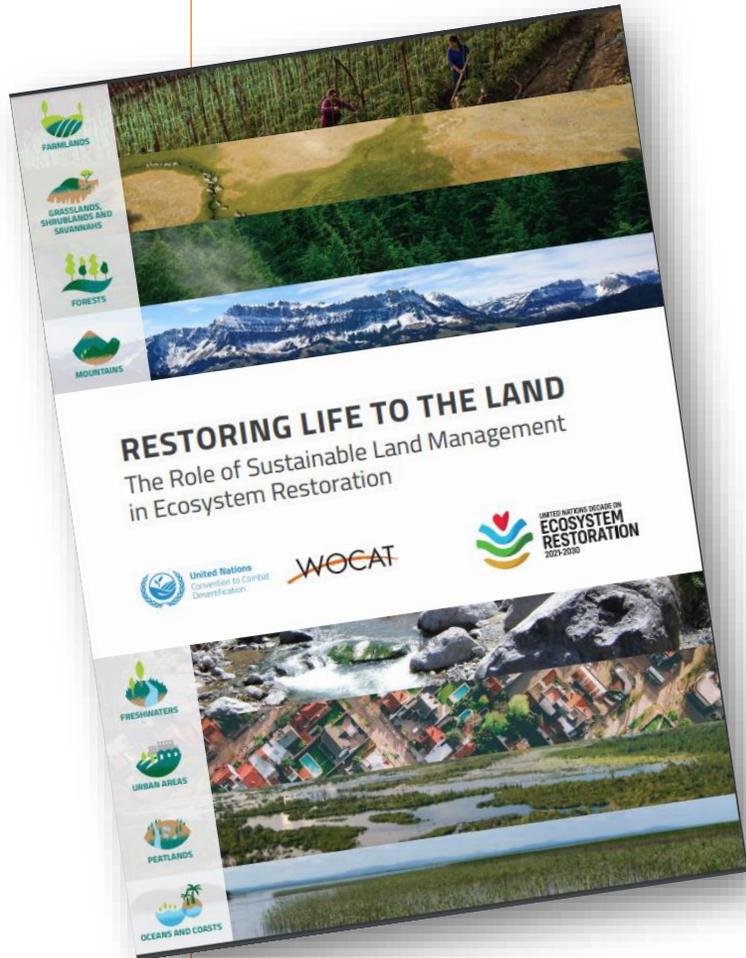
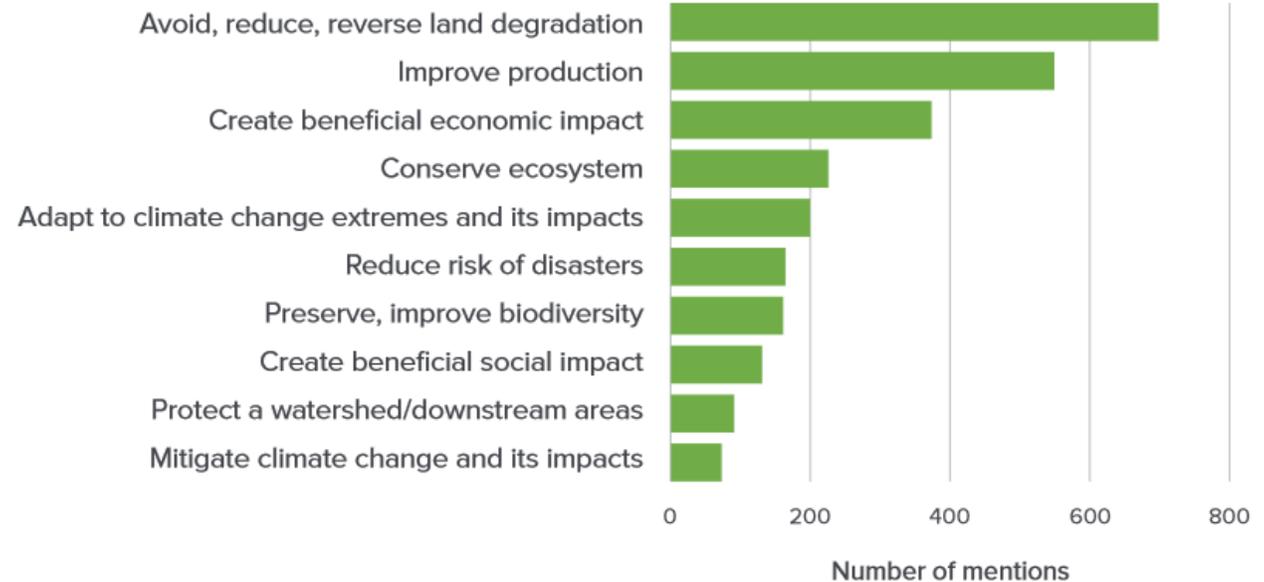


Figure 3: Main purpose for applying SLM from the land user's perspective



Source: Global SLM Database (<https://qcat.wocat.net>)

Note: derived from 991 entries in the database, of which 772 (78 per cent) cover cropland or grazing land or both.

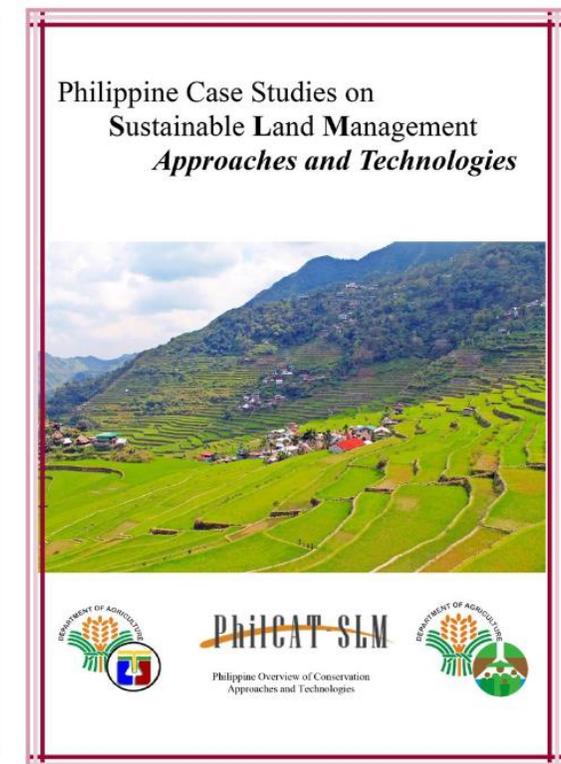
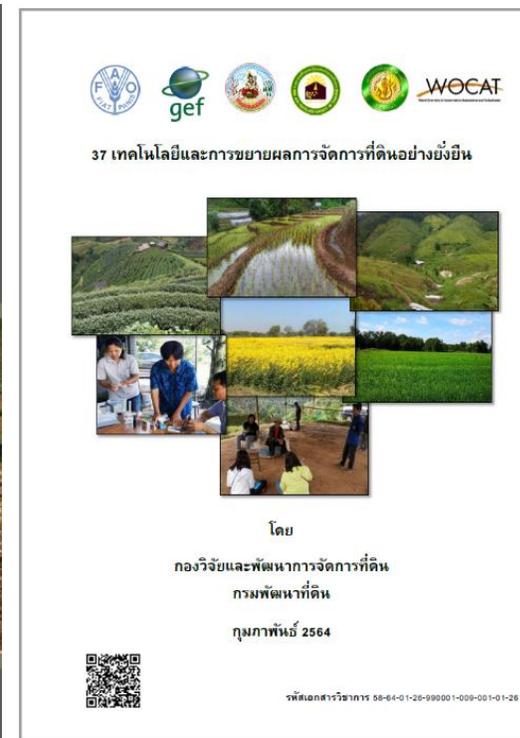
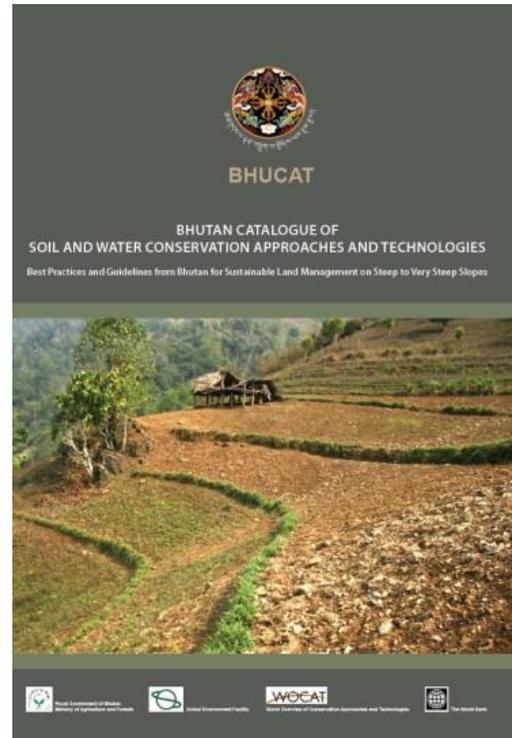
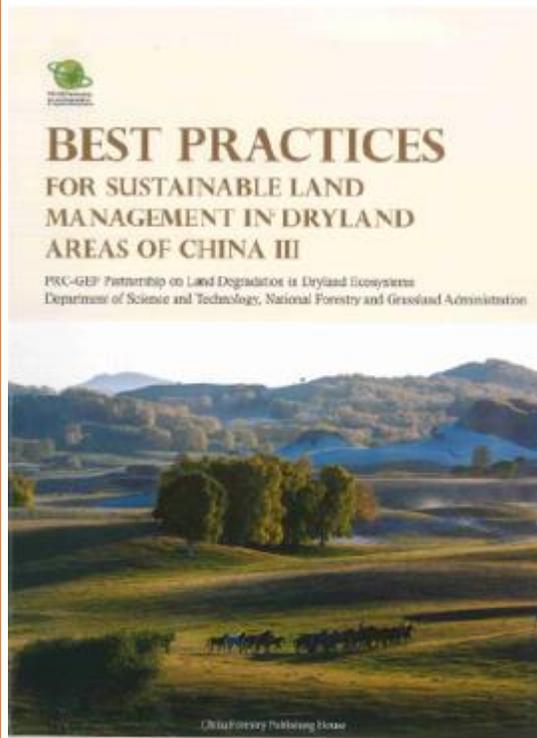
<https://www.unccd.int/publications/restoring-life-land-role-sustainable-land-management-ecosystem-restoration>

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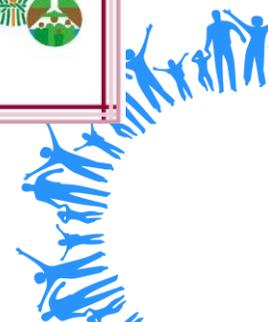
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# National knowledge products and factsheets



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# Knowledge products by country

- SLM posters and brochures for land users
- SLM calendars in local languages

ປະຕິທິນ ປີ ຄສ. 2018 ພສ. 2561

ການຂະຫຍາຍວຽກງານຄຸ້ມຄອງທີ່ດິນແບບຍືນຍົງ ໂດຍຊາວກະສິກອນຂະໜາດນ້ອຍ  
Scaling-up Sustainable Land Management (SLM) practices by smallholder farmers



**On-farm ponds to alleviate the potential impact of seasonal droughts and for increasing crop cultivation and aquaculture**

**The purpose:** Digging ponds on farm to harvest rain water for irrigating crops during droughts and increase crop cultivation.

**Benefits of technology:**

- Sufficient water is made available for irrigation of crops
- Crops can be grown anytime during the year due to the water availability
- Water can be stored for irrigation in the dry season and for use during periods of drought
- Neighbors can be given access to water stored in the ponds
- Small-scale aquaculture becomes possible, with the potential for the cultivation of some aquatic plants as vegetables

**Establishment activities:**

- Digging pond (using an excavator)
- Building a dam surrounding the pond
- Motor pump
- Set up drip irrigation

**Benefit compare with establishment cost:**

- Short-term returns: positive (+)
- Long-term returns: very positive (+++)

**Benefit compare with maintenance cost:**

- Short-term returns: very positive (+++)
- Long-term returns: very positive (+++)

**Views of the pond within the farmland**

**Farmer: Mr. Hong Mank in Sengyong Cheung village, Sengyong commune, Kulsuan district, Preah Vihear province**

**Technology link in WOCAT database:** <https://wocat.net/en/0606060606>

**Ania ti panangbaddek ti pan-aw?**

Ti panangbaddek ti pan-aw ket simple, ababa gastos a pansay-an a pangkontroll ti panagdadkkel dagiti ruot a manglalloped ti panagrang-ay ti kababaran. Iti proseso na, ti ruot nga pan-aw ket naynay a maibaddek babaeln ti panangusar ti kayo a naigalut ti murdongna iti tali ken mausar babaeln ti saka ti agus-usar ti daga. Daytoy ket mangiwaya ti natural a panagdadkkel ti mulmula nga balang gapu ti panangpabassit ti kompetinsya manipud kadagiti nadumaduma a klase ti ruot. Mangipay poy daytoy ti alternatibo nga pansay-an tapno makontroll dagiti ruot nga awanan ti panagpuor.

**Dagiti Benepisyo**

**Biological nga benepisyo**

- Mapabassit ti peggad no adda ti nangat a pasamak
- Mapasayaat ti ubong ti daga
- Mapadagsan dagiti mulmula nga addaan ti karbon
- Mapa-adu ti organikong nga inonan ti daga karbon nga adda iti uneg ti daga
- Mapabassit ti mapukaw nga daga
- Mapa-adu ti agduduma nga mulmula
- Mapabassit dagit dayo nga mulmula a nalaka nga umabot
- Mapa-adu dagiti "species" nga addan ti nasayaat nga benepisyo
- Mapa-adu mapagtalnaed ti kina-agduduma ti pagyinan
- Mapasayaat ti panagadu dagiti ornamental nga "species"
- Mapa-adu ti panagbalbalaw ti kina
- Mapasayaat ti panakabasa ti daga
- Mapabassit ti panangpangaw
- Mapabassit ti anod ti rabaw ti daga

**Benepisyo ti kabangbang lugar**

- Mapaadu ti darum nga mabaln a mausar
- Mapabassit ti malayus nga luglugar
- Mapaadu ti agayus nga dandanum uray ti panawen ti klog
- Mapabassit ti maipenen nga daga ti ababa nga lugar
- Mapabassit ti ubong nga maapektaran ti polusyon
- Mapabassit ti may-anod nga daga gapu ti angin
- Mapabassit ti madangran nga kabangbang a laktalon
- Mapabassit ti madangran nga infrastruktura a publiko/ pribado
- Mapasayaat ti kapasidad a panagaagat

**Produksyon ken socio-ekonomiko nga benepisyo**

- Mapaadu ti maipap kaykayo

**Socio kultural nga benepisyo**

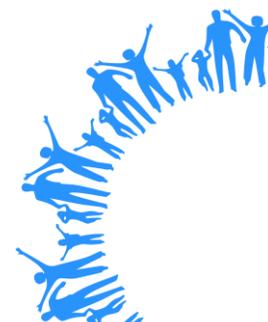
- Mapalagda ti kumunidad nga institusyon
- Mapangrang-ay ti panakaammo ti panagkonserta mapapan iti daga

**Technical Drawing: Patricia A. Yambot**

**(Pagtalneg ti pan-aw usar iti tabla a kago)**

Scaling-up Sustainable Land Management (SLM) practices by smallholder farmers  
Implemented by: Centre for Agricultural and Environmental Studies, Royal University of Agriculture, Website: [www.rau.gov.lk](http://www.rau.gov.lk)

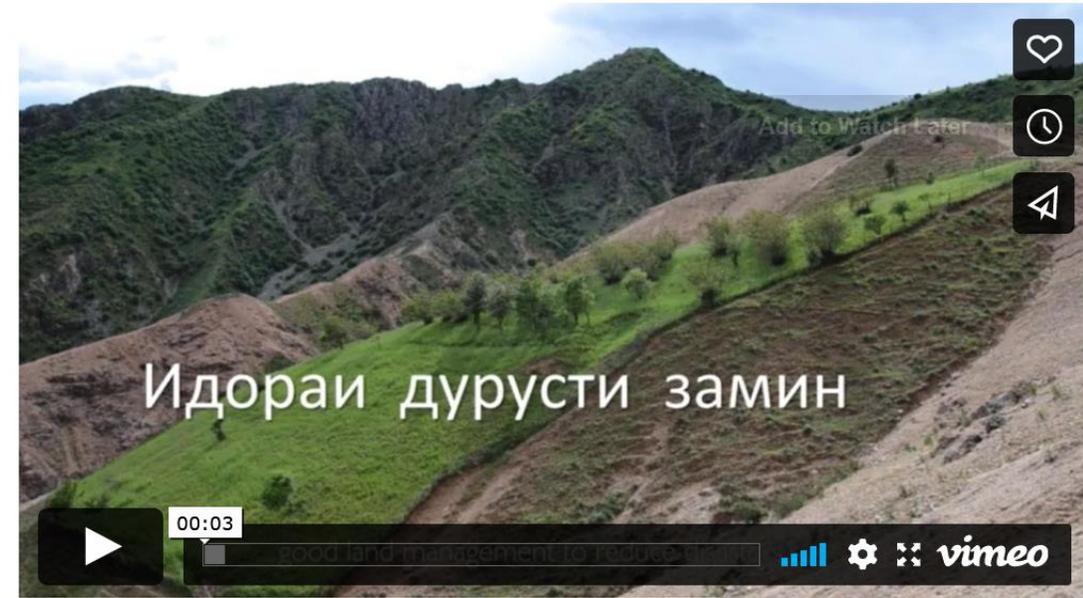
and land management  
Share, Learn, Inspire



# Knowledge products by country

- Videos on SLM in local languages
- Radio programmes on SLM in local languages
- Local storytelling on SLM (Laos)

Reduced pressure on forest resources by improved thermal insulation



# How to add data ?

The screenshot shows the WOCAT SLM Database website. At the top, there is a navigation bar with links for Home, Search SLM Data, Add SLM data, and My SLM Data. The 'Add SLM data' link is circled in red. To the right of the navigation bar, there are 'Login' and 'English' buttons, both circled in yellow and green. A green arrow points from the text 'Define language before hand!!' to the 'English' button, and a yellow arrow points from 'No data entry without log-in' to the 'Login' button. Below the navigation bar is a large banner image of a mountain valley with the WOCAT logo and the text 'United Nations Convention to Combat Desertification' and 'the Global Database on Sustainable Land Management is the primary recommended database by UNCCD'. Below the banner is a search bar with 'Search SLM data' and 'Add SLM data' buttons, with 'Add SLM data' circled in red. Below the search bar are two columns of content: 'SLM Technology' and 'SLM Approach', each with an 'Add' button circled in red. To the right of these columns is a 'Key Numbers' section with a list of statistics.

No data entry without log-in  
Define language before hand!! Otherwise a new language version is created

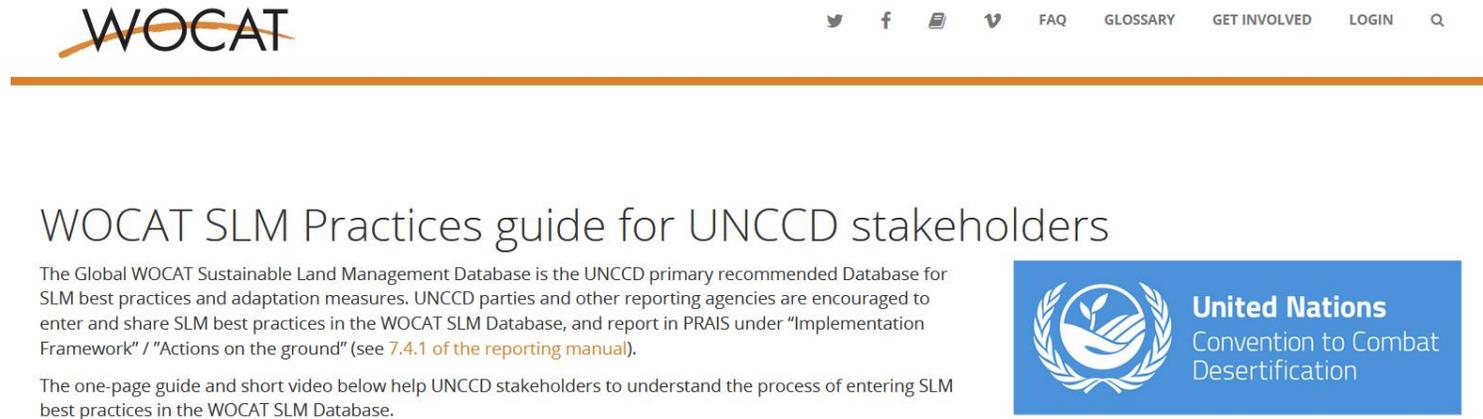
<https://qcat.wocat.net/>

land management  
e, Learn, Inspire



# How to add data: UNCCD Reporting process

- Guidelines
- Short video



The screenshot shows the WOCAT website header with the logo and navigation links: Twitter, Facebook, RSS, YouTube, FAQ, GLOSSARY, GET INVOLVED, LOGIN, and a search icon. Below the header, the main heading reads "WOCAT SLM Practices guide for UNCCD stakeholders". The text below states: "The Global WOCAT Sustainable Land Management Database is the UNCCD primary recommended Database for SLM best practices and adaptation measures. UNCCD parties and other reporting agencies are encouraged to enter and share SLM best practices in the WOCAT SLM Database, and report in PRAIS under 'Implementation Framework' / 'Actions on the ground' (see 7.4.1 of the reporting manual). The one-page guide and short video below help UNCCD stakeholders to understand the process of entering SLM best practices in the WOCAT SLM Database."



» Read more about the UNCCD-WOCAT-Partnership

One-page guide on WOCAT SLM Database



**Guide WOCAT Database**  
800.4 KB  
[Download](#)

More information on WOCAT in PRAIS 4



**WOCAT for PRAIS 4**  
1.8 MB  
[Download](#)

Introductory video WOCAT SLM Database



The video player shows a landscape with a river and mountains. The title is "Introductory video WOCAT SLM Database from WOCAT". The video player interface includes a play button, a progress bar at 00:30, and icons for heart, clock, and share. The Vimeo logo is visible in the bottom right corner.

<https://www.wocat.net/library/media/60/>

Asian knowledge hub on sustainable soil and land management  
Share, Learn, Inspire



# Review process

- lack of critical questioning (overconfidence in assumptions), insufficient use of common sense
- preconceptions, prejudices and wishful thinking
- poor understanding of degradation processes and the impact of conservation/ SLM
- lack of impact assessment and monitoring
- lack of holistic assessment and failure to understand context
- language and cultural barriers
- ....

**Respondent:** "Maintenance costs of the technology amount to 1221 US\$/ha/yr."

**WOCAT:** "Looks high, please list the activities and materials involved."

**Respondent:** "Sorry, I meant 122 US\$/ha/yr"



# Review process

Can be used for:

## SLM capacity building

- interaction between specialists and land users
- several review and revision loops

## Creating links and cooperation among SLM stakeholders

- involvement of research institutes, academia, specialists, etc. (neutral space)
- involvement of officials, e.g. UNCCD reporting responsible, in the national SLM documentation and knowledge sharing, official approval from MoA/MoE for submitted practices
- creation of visibility and awareness, sharing and exchange country activities in SLM, south-south collaboration

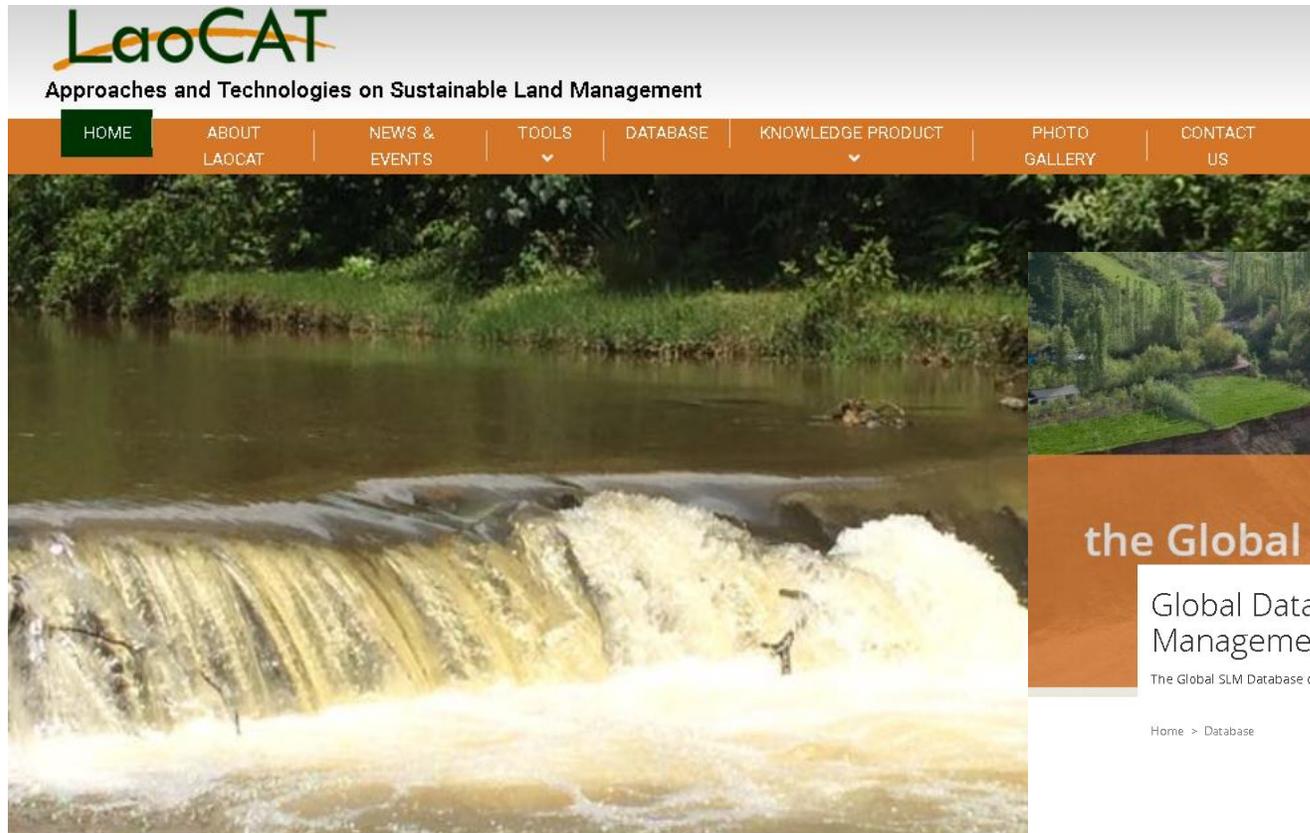


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# How to link WOCAT database?



## Global Database on Sustainable Land Management

The Global SLM Database contains over 1500 SLM practices from all

Home > Database

Go to the Global SLM Database

The objective of documenting and assessing SLM practices is to share management, support evidence-based decision-making, and scale up contributing to preventing and reducing land degradation and to res

## WOCAT database search functions

<https://gcat.wocat.net>



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## WOCAT SLM DATABASE

The Global Database on Sustainable Land Management (SLM) of WOCAT (the World Overview of Conservation Approaches and Technologies) provides free access to the documentation of field-tested SLM data including SLM practices and maps from different places in the world and offers practitioners the opportunity to share their own SLM practice or map

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## WOCAT Explorer

<https://explorer.wocat.net>

# Application programming interface (API) to connect WOCAT database with other platforms



Available with  
an API



**WOCAT SLM DATABASE**

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

Noel Templar English

Search SLM Technologies

Country Project Institution Language

Select or type a country name Select or type a project name Select or type a name Select or type a language name

Advanced filter for: SLM Technologies SLM Approaches Search

SLM Data: SLM Technologies

Only data declared as public are visible.

Your search results (1276)

**Rotational grazing to restore degraded pastures [Afghanistan]**  
A plan for rotational grazing has been developed to control pasture use and prevent overgrazing of rehabilitated pastures.  
Compiler: Bettina Wolfram 10/27/2016 9:40 p.m.

**Cultivation of Hing (Ferula assa-foetida) in the watershed [Afghanistan]**  
Ferula assa-foetida is an important medicinal plant, a valued cash crop and a native plant of Afghanistan's range-lands.

**Carbon Benefits Project**

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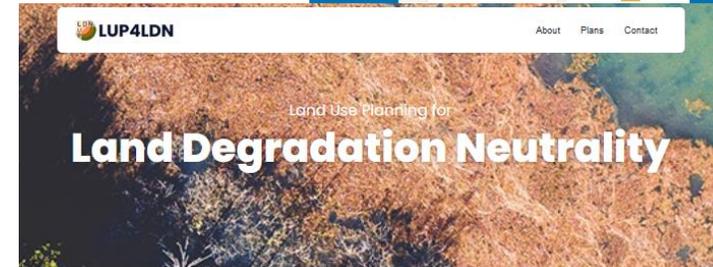
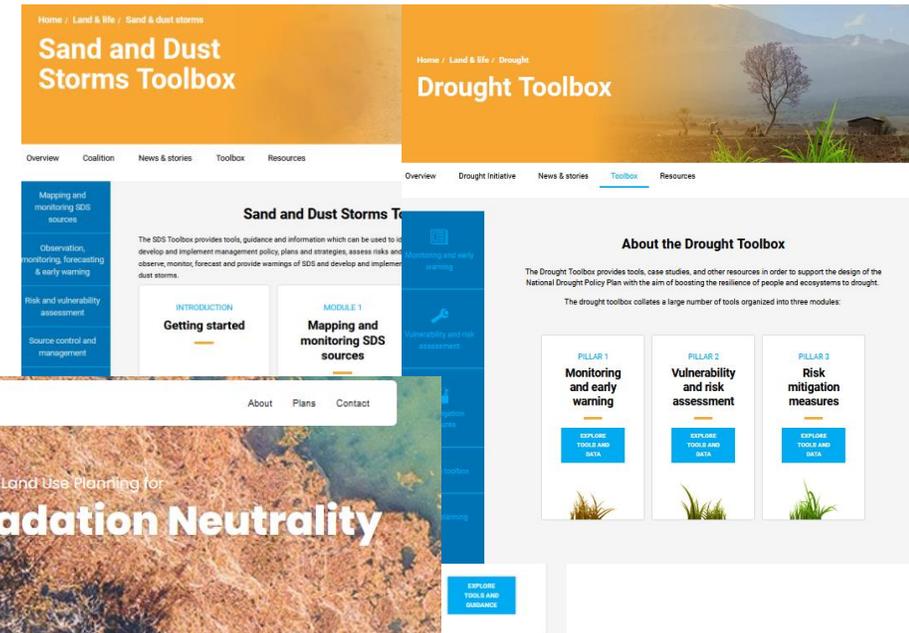
<http://data.apps.fao.org/ferm/>



# API to enable interoperability

Examples of **WOCAT's API connections** with other platforms/tools/applications:

- Framework for Ecosystem Restoration Monitoring (FERM)
- UNCCD Drought Toolbox
- UNCCD Sand and Dust Storms Toolbox
- Water Harvesting Explorer
- Land use planning for LDN (LUP4LDN)
- LandPKS application
- FarmBetter application
- Carbon Benefit Platform
- ...



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# Good practices shared through WOCAT included in other platforms

## Framework for Ecosystem Restoration Monitoring (FERM)



The screenshot shows the WOCAT web application interface. On the left is a navigation sidebar with a search bar and menu items like 'Explore Data', 'Map', 'Country Boundaries', 'Approaches', 'Technologies', and 'True color - Tropics Normalised Mosaic (2021-06)'. The main area is a world map with numerous red dots indicating the locations of good practices. On the right, there is a search and filter panel with a search bar, dropdown menus for 'Ecosystem', 'Region', 'Country', and 'Language', and a 'SEARCH' button. Below the search panel, there are sorting options and a list of practice cards. The first card is titled 'Agroforestry Farming Model' and includes details like location (Nigeria), project name, description, organization, compiler, and dates.

Asian knowledge h

**Agroforestry Farming Model**  
 Location: Nigeria | Project: Shea Agroforestry Farming Model  
 Description: The practice seeks to restore shea agroforestry parklands and improve the climate and economic resilience of shea producing communities, focusing particularly on the presence of trees on farms.  
 Organization: Global Shea Alliance | Compiler: Marie | Published: 16/11/2022 | Updated: 16/11/2022

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**Thank you!**

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