

WOCAT SERVICES

Knowledge Management and Decision support for Sustainable Land Management



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Local-level decision support for Sustainable Land Management in Gulu, Uganda. © Uganda Landcare Network

WOCAT is the global network for Sustainable Land Management (SLM) and hosts the Global Database on SLM Practices – as recommended by the United Nations Convention to Combat Desertification (UNCCD).¹ Over the past 28 years, WOCAT and its partners have developed a set of standardized tools and methods for SLM knowledge management and decision support. These are now used in over 50 countries around the globe. The availability of standardized data facilitates comparative analysis across projects, programmes and countries.

WOCAT provides a robust basis for evidence-based decision-making in SLM mainstreaming and scaling out to **improve production, attain land degradation neutrality, increase climate resilience and help in ecosystem restoration.**

WOCAT partners with institutions in programmes and projects, or is contracted by national or international clients to implement services. The main target group comprises agriculture/environment officers, SLM/ Natural Resource Management (NRM) staff, UNCCD focal points, science and technology correspondents and their staff, and researchers.

An **overview of its three key services** is provided in the tables that follow.

WOCAT in a nutshell

- Offers physical and online training and tools for the whole programme cycle of planning, implementation, review and evaluation.
- Provides a standardised way to document SLM knowledge and hosts a comprehensive database.
- Assists agencies to select SLM measures and to choose options to promote wide adoption and spread.
- Shows how SLM supports land degradation efforts, NRM, watershed management, climate change action, ecosystem restoration and sustainable production.

¹ <https://knowledge.unccd.int/knowledge-products-and-pillars/best-practices-sustainable-land-management/about-unccd-wocat>

Documenting SLM

Compilation and production of standardized SLM knowledge

WOCAT offers a toolset for standardized and systematized SLM data collection, compilation, storage and presentation as well as knowledge production. This facilitates local, national, regional and global knowledge

sharing and analysis of which good practices work where, how and why, and what are their costs and benefits. Such knowledge forms the basis for evidence-based SLM decision-making.

Service	For what	Related tools and methods	Duration (average days) ²
SLM Technologies and Approaches documentation online/ physical training <i>Option for individuals/ small group: in-service training</i>	<ul style="list-style-type: none"> Application of WOCAT SLM Technologies (Ts) and Approaches (As) inventory and questionnaires and related Global WOCAT SLM Database to document and evaluate SLM practices in a standardized format Systematic knowledge sharing at national, regional and global level SLM best practices reporting to the UNCCD Assessment of SLM good practices 	<ul style="list-style-type: none"> Quick inventory of SLM Ts and As www.wocat.net/library/media/44/ Questionnaires SLM Ts www.wocat.net/library/media/15/ Questionnaires SLM As www.wocat.net/library/media/16/ Global WOCAT SLM Database https://qcat.wocat.net/ WOCAT training materials www.wocat.net/library/media/63/ 	Total 11–12 days (4-5 days preparation; 5 days training; 2 days follow-up)
SLM Technologies and Approaches data review and quality assurance	<ul style="list-style-type: none"> Cyclical process of review and quality assurance of SLM data submitted in the Database Self-learning 	<ul style="list-style-type: none"> Explanation of review process https://qcat.wocat.net/en/wocat/help/questionnaire/ 	0.5–1 day per SLM Technology/ Approach (costs apply for projects with earmarked funding)
SLM good practices overview publication	<ul style="list-style-type: none"> Compilation of good SLM practices for an overview of existing practices at all levels English and/ or local language (if the Database is translated) 	<ul style="list-style-type: none"> SLM Ts and As summaries automatically generated in the Database used for the overview www.wocat.net/library/media/64/ 	support based on demand/ client specific requirements
SLM learning and communication materials	<ul style="list-style-type: none"> User-friendly materials (flyers, brochures, calendars, short videos) tailored to practitioners, extension services and land users 	Example: <ul style="list-style-type: none"> SLM video Uganda https://www.wocat.net/library/media/224/ Learning materials Philippines www.wocat.net/library/media/167/ SLM Calendar Cambodia https://www.wocat.net/library/media/141/ 	support based on demand/ client specific requirements
Linking national SLM databases/ platforms to the Global WOCAT SLM Database	<ul style="list-style-type: none"> Application Programming Interface (API) of the Database facilitates linking to national SLM databases/ platforms, enabling national to global standardized knowledge sharing and exchange between countries 	<ul style="list-style-type: none"> API documentation https://qcat.wocat.net/en/api/docs/ 	2–3 days (support for using API)
Carbon Benefits Project (CBP) online/ physical training	<ul style="list-style-type: none"> Estimation of the carbon benefits of SLM Technologies using the CBP tools, which are linked to the SLM Ts Questionnaire 	<ul style="list-style-type: none"> Carbon Benefits Project website https://banr.nrel.colostate.edu/CBP/ 	Total 11–12 days (4–5 days preparation; 5 days training; 2 days follow-up)
In-service support for CBP tools application	<ul style="list-style-type: none"> Baseline data collection including spatial data, development of business as usual and intervention scenarios, data assembly in the CBP tools Running CBP tools for detailed and summary report and interpreting output 		support based on demand/ client specific requirements
Climate Change Adaptation (CCA) online/ physical training	<ul style="list-style-type: none"> Application of CCA Module as a supplement to the SLM Ts Questionnaire to assess SLM Ts adaptation to gradual and extreme climate change 	<ul style="list-style-type: none"> Climate Change Adaptation Questionnaire www.wocat.net/library/media/17/ 	Total 5 days (2 days preparation, 2 days training; 1 day follow-up)

²Institutional costs if implemented by global North/ international partners are 1'100 USD/ day incl. overheads. Institutional costs of global South/ national partners depend on the partner and country. Travel and DSA are to be added.

Searching and selecting SLM options

Decision Support for mainstreaming and scaling out SLM

WOCAT provides assistance in mainstreaming and institutionalizing SLM into decision-making processes so that policies, investments, planning, and technical assistance are supporting durable SLM implementation and scaling out beyond the programme or project lev-

el. WOCAT facilitates inclusive, participatory decision-making processes grounded in evidence about land degradation and SLM where the most suitable solutions are negotiated amongst stakeholders.

Service	For what	Related tools and methods	Duration (average days) ²
Decision support framework (DSF) for SLM mainstreaming and scaling out – put in practice	<ul style="list-style-type: none"> Embed land degradation (LD) and SLM data to facilitate evidence-based decision-making Mainstream and scale out SLM at local, sub-national and national level and create an enabling environment for Land Degradation Neutrality (LDN) 	<ul style="list-style-type: none"> Description of the DSF www.wocat.net/en/decision-support-slm 	support based on demand/client specific requirements
SLM mainstreaming and scaling out strategy design and realization	<ul style="list-style-type: none"> Participatory, multi-stakeholder approach for a SLM mainstreaming and scaling out strategy Identification of barriers and opportunities and key decision-making processes and instruments 	<ul style="list-style-type: none"> SLM mainstreaming tool https://www.wocat.net/library/media/170/ 	Basic design: 3 weeks; advanced design and realization support: over a period of several months
Local level participatory SLM decision support training	<ul style="list-style-type: none"> Application of WOCAT Guidelines for local level participatory stakeholder workshops for inclusive selection of SLM practices. Joint identification of relevant criteria for different stakeholder groups and negotiation of solutions, developing trust and ownership for SLM adoption 	<ul style="list-style-type: none"> Short description of the methodology www.wocat.net/en/decision-support-slm Guidelines are available on request 	Total 7 days (3 days preparation; 3 days training, 1 day follow up)
National level stakeholder workshop for selection of priority areas for intervention training	<ul style="list-style-type: none"> Participatory consultation about existing LD and SLM, hot spots of LD, existing/ promising SLM solutions for different land use systems for evidence-based, negotiated selection of priority areas 	<ul style="list-style-type: none"> Guidelines are available on request 	Total 5 days (2 days preparation; 2 days training, 1 day follow up)

Mapping problems and progress

Spatial assessment of land degradation and SLM in the context of Land Degradation Neutrality

Spatial tools help to assess the spread, distribution, characteristics and trend of land degradation and SLM for different land use systems at district, province, country or regional level. Based on this evidence, hot spots of degradation and green spots of successful SLM are defined, and areas for intervention can be prioritized. An evaluation

of the status and impacts of land degradation and SLM or the development of different land management scenarios facilitates the design and planning of suitable actions to reverse, reduce and avoid land degradation in the context of land degradation neutrality, reduced disaster risk and enhanced ecosystem resilience.

Service	For what	Related tools and methods	Duration (average days)
Mapping land degradation (LD) and SLM online/ physical training	<ul style="list-style-type: none"> Application of the LADA-WOCAT Questionnaire on mapping LD and SLM (QM) to determine the spread, extent, causes and impacts of LD/ SLM in watersheds up to country levels through expert assessment Creation of (sub-)national maps of LD hot spots and SLM bright spots for evidence-based planning and decision-making 	<ul style="list-style-type: none"> Questionnaire on Mapping LD and SLM (QM) www.wocat.net/library/media/18/ 	Total 6 days (2 days preparation; 3 days training; 1 day follow-up)
In-service support for LD and SLM maps production and application	<ul style="list-style-type: none"> Support for data collection, analysis and production of final LD and SLM status, causes and impacts maps for major land use systems Application of maps for land use planning, LDN monitoring and reporting Data storage and sharing 		support based on demand/ client specific requirements
Land Degradation Neutrality (LDN) monitoring and 'validation'	<p>A series of services that support:</p> <ul style="list-style-type: none"> Assessment of LD and SLM trends and monitoring of impacts LDN reporting/ monitoring Ground truthing of LDN indicators/ results Use of different tools for validation 		
A) Mapping LDN indicators online/ physical training	<ul style="list-style-type: none"> Introductory QGIS online/ physical training as a basis for using plugins (e.g. Trends.Earth) and creating maps Map and calculate the three LDN change of state indicators (Land Productivity Dynamics, Land Cover Changes, Soil Organic Carbon trends) with default and alternative methods and data sources Obtain SDG 15.3.1 indicator map (land under degradation) with Trends.Earth Create alternative Land Productivity Trends Maps with satellite-derived data and understand its importance and limitations as an indicator of LDN 	<ul style="list-style-type: none"> QGIS and Trends.Earth Tutorials https://www.wocat.net/library/media/242/ 	Total 6 days (2 day preparation; 3-days training; 1 day follow-up)
B) Google Earth Engine (GEE) online/ physical training	<ul style="list-style-type: none"> Introduction to accessing, using and analysing spatial data available in GEE relevant for LDN Strategies to map land cover and productivity trends at national and subnational level integrating satellite-derived data, field data / expert knowledge in GEE 	<ul style="list-style-type: none"> Google Earth Engine for LDN presentation https://www.wocat.net/library/media/242/ 	Total 6 days (2 day preparation; 3-days training; 1 day follow-up)

C) National level stakeholder workshop for LDN validation and ground truthing

- Compare satellite-driven information with expert knowledge derived from a participatory approach
- Consensus mapping to select the most representative maps of land productivity and degradation trend
- Produce, compare and validate maps to obtain error adjusted area estimates of degradation

- For further reading, example from Argentina: https://www.wocat.net/documents/978/Topic_2_Combining_earth_observation_and_expert_knowledge_Cesar_Luis_Garcia_CONICET.pdf

support based on demand/client specific requirements

D) Support the creation of a Geospatial Knowledge Base and related decision support systems for LDN

- Support the creation of various systems to fit the partners' needs regarding LDN data storage, management and monitoring systems
- Create platforms and applications to share and analyse data in order to support decisions during implementation, monitoring or reporting LDN related targets

- Examples can be provided on request

support based on demand/client specific requirements



Documentation of SLM Technologies in Morocco. © Donia Jendoubi



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Note that additional WOCAT services, activities or products not covered here are: **SLM data analysis and synthesis, production of guidelines and synthesis reports, global and regional publications, SLM curriculum development, policy guidance, and others.** For further information contact WOCAT at wocat.cde@unibe.ch

For further information, please visit www.wocat.net

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