

# External Evaluation — Report

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## World Overview of Conservation Approaches and Technologies (WOCAT)

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<b>ADB</b>	Asian Development Bank	<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>ASEAN</b>	Association of Southeast Asian Nations	<b>ISRIC</b>	World Soil Information
<b>ASP</b>	Asia Soil Partnership	<b>LAC</b>	Latin America and the Caribbean
<b>BP</b>	Best Practices	<b>LADA</b>	Land Degradation Assessment in Drylands
<b>CACILM</b>	Central Asian Countries Initiative in Land Management	<b>LDN</b>	Land Degradation Neutrality
<b>CBD</b>	Convention on Biological Diversity	<b>LLPA</b>	Local Level Participatory Planning
<b>CBO</b>	Community Based Organisation	<b>MOU</b>	Memorandum of Understanding
<b>CBP</b>	Carbon Benefits Project	<b>MSP</b>	Medium-Sized Project
<b>CBT</b>	Carbon Benefit Tool	<b>NARO</b>	National Agricultural Research Organisation (Uganda)
<b>CCA</b>	Climate Change Adaptation	<b>NDVI</b>	Normalized Difference Vegetation Index
<b>CDE</b>	Centre for Development and Environment at the University of Bern	<b>NEPAD</b>	New Partnership for Africa's Development
<b>CESRA</b>	Centre of Excellence for Soil Research in Asia	<b>OH</b>	Outcome Harvesting
<b>CFH</b>	Swiss Franc	<b>PRAIS</b>	Performance Review and Assessment of Implementation of Practices
<b>CI</b>	Conservation International	<b>QA</b>	Questionnaire on SLM Approaches
<b>CIAT</b>	Center for Tropical Agriculture	<b>QCCA</b>	Questionnaire on Climate Change Adaptation
<b>COP</b>	Conference of the Parties	<b>QM</b>	Questionnaire on Mapping
<b>CRIC</b>	Committee for the Review of Implementation of the UNCCD	<b>QT</b>	Questionnaire on SLM Technologies
<b>CSIR</b>	Council for Scientific and Industrial Research (South Africa)	<b>RNE</b>	Near East and North Africa
<b>DS-SLM</b>	Decision Support for Sustainable Land Management	<b>SDC</b>	Swiss Agency for Development Cooperation
<b>FAO</b>	Food and Agricultural Organization of the United Nations	<b>SDG</b>	Sustainable Development Goal
<b>FREG</b>	Farmer-Research Extension Group	<b>SES</b>	Social Ecological System
<b>GCF</b>	Green Climate Fund	<b>SLM</b>	Sustainable Land Management
<b>GEF</b>	Global Environment Facility	<b>SPI</b>	Science Policy Interface (Of the UNCCD)
<b>GEFSEC</b>	Global Environment Facility Secretariat	<b>SWC</b>	Soil and Water Conservation
<b>GIZ</b>	Gesellschaft für Internationale Zusammenarbeit (German Development Cooperation)	<b>TE</b>	Terminal Evaluation
<b>HIMCAT</b>	WOCAT for the Himalayan Region	<b>TOR</b>	Terms of Reference
<b>ICARDA</b>	Science for Resilient Livelihoods in Dry Areas	<b>UNCCD</b>	United Nations Convention to Combat Desertification
<b>ICIMOD</b>	International Centre for Integrated Mountain Development	<b>UNDP</b>	United Nations Development Programme
<b>IFAD</b>	International Fund for Agricultural Development	<b>UNEP</b>	United Nations Environment Programme
<b>IKI</b>	International Climate Initiative	<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>IPBES</b>	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services	<b>USD</b>	United States Dollars
		<b>WOCAT</b>	World Overview of Conservation Approaches and Technologies



# Executive Summary

## Background to the evaluation and methods used

The overall vision of the WOCAT (World Overview of Conservation Approaches and Technologies) network is to improve land resources and ecosystems and people's livelihoods by sharing, enhancing, and using knowledge, and building capacity on Sustainable Land Management (SLM). WOCAT has since its launch in 1992 generated an array of outputs that need to be reviewed in terms of quality, relevance and user friendliness. This includes the Global WOCAT SLM database, tools, methods, books and articles. Since the last review in 2011, the WOCAT network has been strengthened and the adequacy and efficiency of the new set-up is evaluated. The evaluation also has a strong focus on assessing the impacts that WOCAT has achieved after more than 25 years of operation. A combination of methods was used, including documentation review, a questionnaire survey sent out to the entire network, semi-structured interviews with key informants, participation in the 19th global WOCAT Network Meeting in mid-May 2019, and field visits to four countries.

## Evaluation findings

### Effectiveness of WOCAT/Achievement of results

- WOCAT has been effective in delivering its expected outputs and outcomes, although there is need for a better tracking of outputs in countries. Further decentralization of the network could improve its cost effectiveness.
- There is a missing step in the WOCAT theory of change between outcome and impact related to the expected behavioural change of WOCAT's direct boundary partners required to achieve impact. WOCAT's progress along its impact pathway shows that an increasing number of countries and institutions are taking up and using WOCAT tools and methods and that they are being mainstreamed in big donor programmes and projects as well as national programmes.
- The global WOCAT SLM platform and WOCAT-

pedia are used extensively by a growing number of countries (more than 21 000 visits from 185 countries in the last project report). However, the database needs to be improved with new functions to enhance accessibility and user friendliness.

### Impact of WOCAT

- The WOCAT database is often used as a source of information for selection of SLM practices and for learning about SLM implementation, which indicates that WOCAT has an important role in informing implementation of SLM and not only in its documentation.
- There is remote sensing as well as field evidence that WOCAT has had significant impact in a number of countries on land resources, ecosystems and livelihoods in terms of increase in land productivity and carbon stocks as well as incomes. However, WOCAT should collect information on SLM impacts more systematically.
- WOCAT has been mainstreamed in an impressive number of multilateral and bilateral projects and positively influenced investment flows to SLM of billions of US dollars. However, it would also be useful to better track which donor-funded projects have adopted the WOCAT tools and methods in order to better assess the funding WOCAT has contributed to leveraging in support of SLM.
- In terms of research, it would be useful to better link the understanding of conditions enabling SLM to social science theory on what is driving as well as hindering behavioural change necessary to achieve scaling up of SLM. Impact assessment and monitoring of land management impacts on ecosystem health and ecosystem services is also urgently needed, including scenario building and modelling of both on- and off-site impacts of scaling out of SLM.

## Relevance of the WOCAT programme to development priorities and needs and the global SLM agenda

- WOCAT contributes to a range of sustainable development issues and goals related to food security, disaster risk reduction, water security, climate change mitigation and adaptation and has a key role to play in achieving the Sustainable Development Goals (SDG), especially target 15.3 on Land Degradation Neutrality (LDN), and support decision-making processes, implementation, and monitoring and assessment.
- WOCAT has already contributed to capacity development for achieving SDG 15.3 as well as to other international processes and should continue to engage in UNFCCC and CBD processes and the Decade of Ecosystem Restoration that will be launched in 2020.
- WOCAT should continue to strengthen its focus on women, youth and disadvantaged groups and their role in agriculture and rangeland management, as well as integrated water resources management, social inclusion and human rights in line with SDGs 5 and 6.

## Adequacy and efficiency of the institutional set-up, funding mechanism and funding strategy and overall functioning of WOCAT

- The WOCAT network is considered to work well as a mechanism for inclusive knowledge management, learning, sharing and exchange. However, in the future, WOCAT needs to be better mainstreamed and integrated into the work of its partners, both Consortium partners and country partners.
- The WOCAT Secretariat needs to be strengthened and some of its functions could be distributed to Consortium partners to enable it to interact and better communicate with partners and provide basic services to the network on a continuous basis. Some functions of the WOCAT Secretariat, such as quality assurance, could also be decentralised to regional clusters.
- SDC has provided long-term support to WOCAT since its launch. Some Consortium partners are also co-funding the network. However, existing in-kind co-financing to WOCAT at national and sub-national level needs to be recognized and assessed. More funding needs to be mobilised to the network as a whole to ensure its future functioning, and a business plan involving all Consortium partners should be developed.
- WOCAT needs to be better mainstreamed in agencies accredited to climate funds (e.g. GCF, Adaptation Fund, GEF, IKI) to improve access to climate change funding. This needs to be coupled with better monitoring of current funding to different parts and functions of the network in order to make projections of future funding needs.

## Evaluation recommendations

**The WOCAT Secretariat needs to be strengthened** with the option of developing a more decentralised structure and possibly a distributed Secretariat to ensure continued and timely services to countries. The decentralisation could be both to regional clusters, or to Consortium partners for network functions, such as for example updating the global SLM database and for providing knowledge management and communication services.

**Consortium partners need to be fully engaged in the restructuring of WOCAT building** on their strengths and comparative advantages. They should ensure that WOCAT is mainstreamed in their own organisations and could take on some of the functions of the WOCAT Secretariat as appropriate. Efforts to develop joint projects with WOCAT should be stepped up and a business plan and joint programming framework that includes all Consortium partners need to be developed. They should review and reformulate the responsibilities of the WOCAT Secretariat and define the responsibilities of Consortium partners and regional clusters.

**Monitoring and reporting on WOCAT impacts should be improved across the network** to enable tracking of WOCAT's long-term impact caused by behavioural change and integration into other programmes and projects leading to scaling up of SLM practices along its impact pathway and theory of change. The WOCAT Secretariat also needs to engage in annual monitoring of network activities and achievements.

**The WOCAT network needs to be revitalised through strengthened outreach, advocacy and communication.** More opportunities for learning and knowledge exchange between countries and regions should be generated to meet demands for learning about LDN and other emerging SLM issues.

**The collaboration with the UNCCD focal points in countries should be strengthened.** As is already the case in some countries, WOCAT should establish stronger links with the UNCCD focal point at national level to support reporting on SLM best practices, and to ensure the mainstreaming of WOCAT tools and methods in relevant programmes and projects. WOCAT tools could also be used in LDN target setting, implementation and monitoring of LDN, which would contribute to SDG target 15.3.

**Resources should be mobilised more systematically across the WOCAT network** and new sources of funding from climate change funds (e.g. Green Climate Fund, Adaptation Fund, IKI) and the private sector need to be explored to ensure diversification and sustainability of funding. A multi-donor basket fund could be established to support the continued functioning of the WOCAT Secretariat.





**WOCAT research should provide analysis of human rights, gender and governance issues in SLM**, such as women's role in decision making in SLM, access to land and water resources, land tenure, youth aspects, and disadvantaged groups. It would also be useful to develop stronger linkages to social science theories for behavioural change and governance. The WOCAT database with its extensive dataset could be used for more comprehensive SLM analysis to better serve as decision support and inform policy making, including research on barriers to scaling up of SLM, impact assessment and monitoring of land management impacts on ecosystem health and ecosystem services, to support the operationalisation of the landscape approach.

## Conclusions

WOCAT has become a global flagship programme in SLM closely linked to the UNCCD. However, in an everchanging global environment, the need for WOCAT to continuously reflect on its relevance to partners and other stakeholder is critical. WOCAT has reached a turning point when it comes to maintaining its functions and securing its funding. The size and scope of the network has outgrown the current management structure as well as its core funding. There is strong evidence that the demand for SLM knowledge is growing and urgently needed to address global environmental challenges exacerbated by climate change and population growth, and to achieve the SDGs. This is further underlined by the recently released IPCC Special Report on Climate Change and Land. A concerted and international effort is required to ensure the continuation of WOCAT and the services it provides to land users, countries, donors and the UNCCD.

# 1 Introduction and objectives

With support from Swiss Agency for Development and Cooperation (SDC), WOCAT (World Overview of Conservation Approaches and Technologies; [www.wocat.net](http://www.wocat.net)) was established in 1992 under the joint management of the Centre for Development and Environment (CDE)/University of Bern, the UN Food and Agricultural Organization (FAO) and World Soil Information (ISRIC) as an informal global network of soil and water conservation specialists. WOCAT was ahead of others in recognizing the need to focus on solutions to land degradation problems, through Sustainable Land Management (SLM), and not only on the problems. It launched efforts to compile, document, share and apply SLM knowledge. Over the years it expanded its focus and went beyond data collection to conduct evaluation, monitoring, training and research. WOCAT is also since 2014 the recommended database for reporting on SLM best practices to the United Nations Convention to Combat Desertification (UNCCD).

The overall vision of the WOCAT network is to improve land resources and ecosystems (including soils, water, flora, and fauna) and people's livelihoods by sharing, enhancing, and using knowledge on SLM. WOCAT has since its launch generated an array of outputs that need to be reviewed in terms of quality, relevance and user friendliness. This includes the Global SLM database, tools, methods, books and articles. Since the review in 2011, the WOCAT network has been strengthened and the adequacy and efficiency of the new set-up needs to be evaluated. The evaluation has a strong focus on assessing the impacts that WOCAT has achieved after more than 25 years of operation. The objectives of the evaluation are thus to:

- Assess the effectiveness and achieved impacts of WOCAT on the land resources and ecosystems, the project beneficiaries and target groups at the local, national and global level.
- Further assess the relevance and the efficiency of WOCAT and its collaboration modalities.
- Produce a clear set of concluding lessons learnt.
- Make concrete and specific recommendations for:
  - Actions to improve the performance to achieve better delivery of its outcomes and outputs, and
  - Strengthen WOCAT's contribution in the global SLM discourse particularly considering its contribution to the achievement of targets set in the Agenda 2030 and the three UN conventions specifically UNCCD (see Annex 1 for detailed TORs).

The first external review of WOCAT took place in 1998 at the end of its second phase. The review recommended the continued and enhanced support for WOCAT, but broader recommendations that are still relevant today include the need to justify WOCAT's development relevance and need for diversification of funding for scaling up of SLM (Stocking & Pozzi, 1998). In 2007, SDC commissioned an external review of CDE that is hosting the WOCAT programme that found that WOCAT is one of the key assets of CDE and that CDE should continue to develop the programme in innovative ways (Schaffer & Guenat, 2007). The GEF-funded project on Land Degradation Assessment in Drylands (LADA) that collaborated with WOCAT on national assessments of land degradation and SLM in six pilot countries was evaluated in late 2010 and early 2011. It recommended to put emphasis on the institutionalisation of LADA/WOCAT outputs and concrete applications of the LADA/WOCAT methodology through proposals for action (Kellner et al., 2011). In 2011 SDC again commissioned an external review of WOCAT that concluded that WOCAT offers a unique standardized methodology and tools for documenting and evaluating SLM approaches and technologies and innovative templates for dissemination of key information of best practices to field practitioners, decision-makers and policy-makers. It also found that WOCAT methods and tools had been used in many countries across the world to document SLM technologies and approaches and to train practitioners in the application of the tools. This resulted in high quality publications developed together with key UNCCD partners on SLM best practices in different regions of the world. The evaluation strongly recommended continued support to the network but identified that it needed to enhance its efforts to reach out to policy makers, strengthen its organizational structure and to ensure its financial sustainability (Tengberg, 2011).



# 2. Methodology

## 2.1 Approach

The evaluation adopted a participatory and transparent approach and is also informed by the evaluation approaches called Outcome Mapping and Outcome Harvesting (OH). These methods enable evaluators, grant makers, and managers to identify, formulate, verify, and make sense of outcomes. The method was inspired by the definition of outcome as a change in the behavior, relationships, actions, activities, policies, or practices of an individual, group, community, organization, or institution (Wilson-Grau, 2019). Using OH, the evaluator or harvester collects information from reports, personal interviews, field observation and other resources to document how a given programme or initiative has contributed to outcomes. Outcomes can be positive or negative, intended or unintended, but the connection between the initiative and the outcomes should be verifiable.

## 2.2 Data collection

Data was gathered through review of documents, interviews and administration of a questionnaire survey to assess behavioural change instigated by WOCAT, as well as field visits to four countries, three in Africa and one in Asia.

**Documentation review:** The evaluator reviewed WOCAT's six-monthly progress and financial reports, WOCAT books and articles, WOCATpedia, numerous other publications to which WOCAT has contributed, as well as selected WOCAT SLM technologies and practices.

**Questionnaire survey:** The questionnaire survey was sent out to active WOCAT focal points. 68 responses were received out of which 43 were considered sufficiently complete to be included in the evaluation. There were thus 25 incomplete responses that were dropped. The results of the evaluation questionnaire are presumed representative on the basis that the incidence of incomplete responses were random.

**Interviews:** Semi-structured interviews were conducted with key informants either in person or via Skype.

**Global meeting:** The evaluator participated in the 19th global WOCAT Network Meeting that took place in Ethiopia in

mid-May 2019. This provided an opportunity to interact with network members from countries and consortium partners, and to conduct semi-structured interviews.

**Country visits:** WOCAT outcomes and impacts were substantiated through field visits to selected countries by the lead evaluator and co-evaluators. Two countries with active projects were included: Thailand is part of an FAO/GEF-funded project on SLM and Uganda has an IFAD-funded SLM project with WOCAT. Ethiopia and South Africa were selected based on their long involvement in WOCAT. The use of remote sensing data to analyse impact of SLM practices from Trends.Earth was observed in Ethiopia. The use of WOCAT mapping questionnaire (QM) to assess land degradation was observed in Macubeni catchment, in South Africa, and WOCAT technology questionnaire (QT) mobile phone application in northern Thailand.

Results were analysed and interpreted in relation to the theory of change developed for WOCAT. Evidence from reviews, the questionnaire survey, field visits, and interviews were triangulated to cross-examine results and overcome biases.

# 3. Effectiveness of WOCAT/ Achievement of results

This section analyses how effective the WOCAT approach is to achieve the overall vision and goal of WOCAT. This relies on identification of achieved outputs and outcomes across project components through a desk review of project reports and reviews, the knowledge platform and website, published tools, technical reports, books, papers, etc.

## 3.1 WOCAT's goal and theory of change

The overall goal of WOCAT is that land users and the public benefit from more secure ecosystem services, thanks to greater adoption, adaptation, dissemination, and mainstreaming of SLM in our fast-changing world. To achieve this ambitious goal, the current phase of WOCAT has three outcomes with associated outputs in its most recent Project Document for the period 2016-2019 that are listed below.

### **Outcome 1: Enhanced knowledge and tools for evidence-based decision-making, adaptation, and dissemination of SLM at different scales (local, landscape/watershed, national)**

#### **Output 1.1**

(WIS output 1.3) QT&QA 'Plus' version revised and programmed (based on revised QT/QA 'Core' version), QT and QA data migrated from old WOCAT databases and on-line database analysis tool created

#### **Output 1.2**

(WIS output 1.3) Mapping Questionnaire (QM) revised and 'Core' version developed

Output 1.3 (WIS output 1.3) Off-line application for QT/QA 'Core/Plus' data entry developed to ease data collection in the field and areas with unreliable/ non-existing internet connection

#### **Output 1.4**

(WIS output 1.3) New and innovative tools and communication technology developed based on demand and opportunities to collect and disseminate SLM knowledge for various users, specifically agriculture extension services and project implementers

Output 1.5 (WIS output 1.2) Existing and new

modules revised and developed (e.g. economics of SLM, carbon benefit, livelihood) and integrated in global SLM practices database

#### **Output 1.6**

(WIS output 1.1) Methodological framework for decision support for SLM mainstreaming and scaling up tested and adapted to user needs

#### **Output 1.7**

(WIS output 1.6) Series of training and capacity building methods with manuals for the use of the DS methodological framework developed for various users, specifically agriculture extension services and project implementers

#### **Output 1.8**

(WIS output 1.4) Continuously populated and enlarged knowledge and database on Technologies and Approaches, national SLM maps, and datasets for various modules, including improvement in quality of existing and new data

#### **Output 1.9**

(WIS output 1.2) On- and offsite SLM impact assessment carried out in six case study regions

#### **Output 1.10**

(WIS output 1.5) Series of knowledge products on onsite and offsite impacts of SLM for broad public and policymakers developed

#### **Output 1.11**

(WIS output 1.5) Contributions to several global and regional SLM knowledge products made, amongst others with focus on SLM mainstreaming and scaling-up

#### **Output 1.12**

(WIS output 1.2, 1.3, 1.4, 1.5, 1.6) New and innovative tools and methods will be developed based on a strategic decision in 2018 with SDC and the Consortium Partners, and new demands of WOCAT network partners and opportunities arising

#### **Output 1.13**

External evaluation focusing on effectiveness and achieved impacts of WOCAT on the ecosystems, the project beneficiaries and target groups at the local, national and global level will be conducted and finalized in early 2019



## **Outcome 2: Engaged institutions/organizations, policymakers, private sector, civil society organizations and general public, who adopt and mainstream SLM as key cross-cutting approach to tackle global issues**

### **Output 2.1**

(WIS output 2.1 and 2.2.) Participation of and advocacy for WOCAT International in key events (conferences, workshops, etc.) coordinated including the production of PR materials

### **Output 2.2**

(WIS output 3.1) Regular WOCAT International events including logistics and sponsorship of WOCAT Network members organized

### **Output 2.3**

(WIS output 2.2) Working group to raise further awareness on the contribution of SLM to the SDGs and to Land Degradation Neutrality established with selected partners

### **Output 2.4**

(WIS output 2.2) Awareness raising and advocacy for SLM realized targeting policymakers and the broad public using knowledge products on SLM on- and offsite impacts

### **Output 2.5**

(WIS output 2.2 and 2.3.) SLM knowledge products promoted and disseminated targeting project implementers, decision-makers, and the broad public

## **Outcome 3: A recognized, jointly developed and supported harmonized Global SLM Platform for Knowledge Management and Decision Support**

### **Output 3.1**

(WIS output 3.1) Secretariat functions for WOCAT International and WOCAT Regional/National performed including fundraising activities for WOCAT Secretariat (basic and advanced services) with support of Consortium Partners

### **Output 3.2**

(WIS output 3.1) Communication within WOCAT Network and external parties facilitated, including promoting the Network, providing support to partners and the institutional memory for WOCAT

To assess WOCAT's achievements along the impact pathway, it was considered necessary to develop a theory of change based on the outcomes and outputs above and the logical framework in the 2015 Project Document. According to this logic, a range of SLM tools, WOCAT knowledge products, advocacy events and support to communication about SLM will lead to enhanced knowledge of SLM and engaged

institutions, policy makers, private sector, land users and CBOs. Supported by a recognized Global WOCAT SLM knowledge management and decision-support platform, this will ensure that land users and the public benefit from more secure ecosystem services thanks to greater adoption, adaptation, dissemination and mainstreaming of SLM. This theory of change is summarised below (Figure 1). However, to make a logical link from the outcomes to impact, it is necessary to understand how the outcomes influence the observed behavioural change among WOCAT boundary partners (target groups).

Development interventions targeting key beneficiaries only have long-lasting effect if they – with their activities and outputs - induce behavioural change in people with influence, the so-called boundary partners. Instead of assessing the change of state, (such as more productive land or improved incomes), progress and results are measured by the changes in behavior of those individuals, groups or organizations with whom the initiative is working directly and seeking to influence. Desired behavioural changes can be changes in relationships, changes in actions and interactions, attitudes, and changes in practices and/or changes in policies. The missing step in the theory of change between outcome and impact has been inserted in Figure 1 and focus on the expected behavioural change of WOCAT's direct boundary partners.

To more precisely identify its direct boundary partners WOCAT could consider to undertake a rapid outcome mapping of stakeholders it works with and identify more clearly whether they have high versus low influence and high versus low interest, respectively, with respect to national and international SLM agendas. Stakeholders that WOCAT has influence on through its actions and deliverables AND that have influence on WOCAT's goal are the direct boundary partners.

In this context, CDE has undertaken an analysis of the different mechanisms found for impact generation in its portfolio of projects (Schneider, et al., 2019). Three generic mechanisms were identified:

- a. Promoting systems, target, and transformation knowledge for more informed and equitable decision-making;
- b. Fostering social learning for collective action; and
- c. Enhancing competences for reflective leadership.

In CDE's transdisciplinary co-production of knowledge, outcomes such as increased trust, motivation, joint understanding, and network building are seen as mediators. It is noted that WOCAT is supporting innovation and decision-making in SLM through its open access database, which has led to recognition of SLM amongst different national institutions and improved decision making. These observations fit in well with the theory of change proposed below and its focus on behavioural change among direct boundary partners.

### 3.2 Achievement of outcomes and outputs

The assessment of WOCAT’s effectiveness was based on the literature review, questionnaire survey and interviews with key informants. According to WOCAT’s project/financial reports, almost all outputs have been delivered. Tools and methods have been updated, and global knowledge products published that are of high quality on topics such as water harvesting, disaster risk reduction and rangeland management. New applications are being developed, such as a new climate change adaptation module (CCA) and linking the Carbon Benefit Tools (CBT) to summaries of WOCAT technologies (QT). The FAO/GEF DS-SLM project has developed Guidelines for the national assessment and mapping of land degradation and conservation using the WOCAT mapping tool (QM) as well as Guidelines for Decision Support for Scaling SLM. In addition, there is ongoing work to develop off-line applications of QT as well as WOCAT approaches (QA). WOCATpedia is a new community platform or library that builds on the former Agriwaterpedia wiki website previously managed by the Consortium partner GIZ that has now been migrated to WOCAT. It is a platform that allows sharing of content via articles and reports.

WOCAT is regularly organising side events at UNCCD COPs and CRICs that countries are benefiting from (see experiences from Ecuador in Box 8). It also participates in other relevant scientific and global meetings. It has organised many training events at national and international level, building capacity in use of its tools to promote SLM and LDN. The database has almost 2 000 practices uploaded and has been visited by 195 countries since the launch in 2016. WOCATpedia had more than 20 000 visitors. WOCAT has thus been effective in delivering its expected outputs and outcomes, although there is need for better tracking of outputs in countries. Further decentralization of the network could improve its cost effectiveness, as will be discussed further below. Table 1 provides a summary of key achievements from 2012-2019 based on the expected outcomes and outputs listed above.

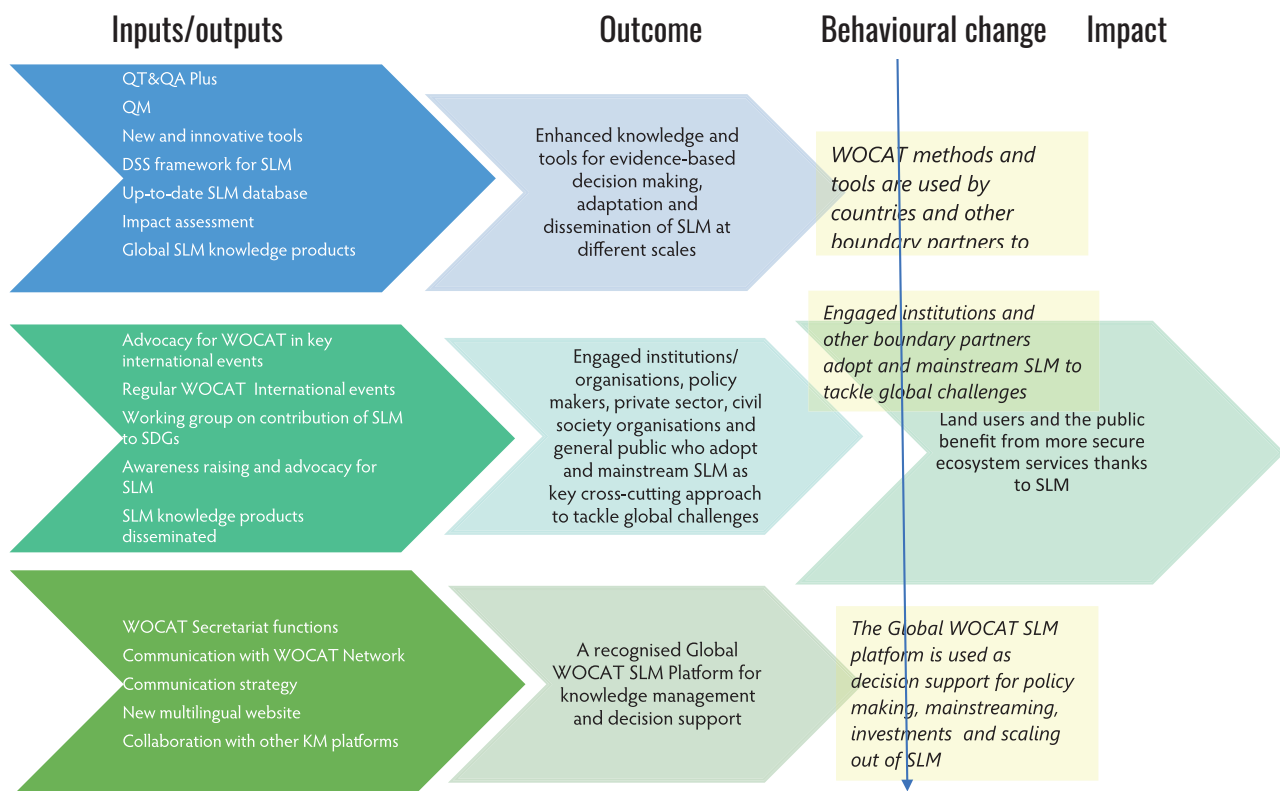


Figure 1. WOCAT’s theory of change based on the 2015 Project Document and outcome mapping theory.



**Table 1.** WOCAT's achievements 2012-2019.

Hierarchy of objectives/ intervention strategy	Key indicators	Data sources	Evaluation findings	Evidence
<b>Impact (overall goal)</b>	<b>Impact indicators</b>	<b>Means of verification</b>		
Land users and the public benefit from more secure ecosystem services, thanks to greater adoption, adaptation, dissemination, and mainstreaming of SLM in our fast changing world	Innovations and adaptations are reflected in governance schemes and policy frameworks dealing with SLM	Reporting of governance schemes and policy frame- works	WOCAT is being mainstreamed in land-use plans and government strategic documents in a number of countries, but this needs to be better monitored and reports	OH harvesting Questionnaire survey and interviews Global meeting
<b>Outcomes</b>	<b>Outcome indicators</b>	<b>Means of verification</b>	<b>Evaluation findings</b>	
1. Enhanced knowledge and tools for evidence-based decision-making, adaptation and dissemination of SLM at different scales (local, landscape/ watershed, national)	- knowledge and tools are used and results/ findings are taken up by relevant SLM actors	- progress reports by regional/ national WOCAT members / initiatives/hubs using the knowledge and tools	<p>Mobile Apps for QT developed in e.g. Thailand and South Africa</p> <p>QT and QA updated and a step-by-step guide published in 2019 for QM. UNDP GEF 5 project, in collaboration with CISR &amp; Rhodes University in South Africa adapted and used QM for assessment of land degradation</p> <p>New Climate Change Adaptation (CCA) module developed with a QCCA</p> <p>The GEF Carbon Benefit Tools is being linked to the summaries of the QT</p> <p>Methodological framework DS-SLM mainstreaming and scaling up</p> <p>Two impact stories completed (Cambodia and Uganda)</p> <p>Several global knowledge products on Water Harvesting (2013); Desire for Greener Land (2012); Sustainable rangeland management in Sub-Saharan Africa (2019); Where people and their land are safer (2017); Making sense of research for sustainable land management (2017); WAD 2018; 4 LDN papers (2019)</p> <p>WOCATpedia developed from Agriwaterpedia</p>	<p>WOCAT Project/ Financial reports</p> <p>Field visit to Thailand (see Box 6)</p> <p>Field visit to South Africa (see Box 5)</p> <p>WOCAT website</p> <p>Global meeting</p> <p>Field visits to Uganda and Thailand Boxes 7 and 6)</p> <p>Questionnaire survey</p> <p>OH harvesting</p> <p>Published books (see Annex 2)</p> <p>WOCAT website</p>

<p>2. Engaged institutions/ organizations, policy-makers, private sector, civil society organizations and general public, who adopt and mainstream SLM as key cross-cutting approach to tackle global</p>	<ul style="list-style-type: none"> <li>- advocacy products are used by relevant SLM actors</li> <li>- use of tools and methods, including the database</li> <li>- regional and national WOCAT Initiatives/ hubs established which promote and use WOCAT products / tools and methods</li> </ul>	<ul style="list-style-type: none"> <li>- monitoring of use of advocacy products</li> <li>- progress reports of regional/ national WOCAT partners</li> </ul>	<p>WOCAT is regularly organising side events at UNCCD COPs and CRICs. It also participates in other relevant scientific and global meetings.</p> <p>It has organised many training events at national and international level using its tools to promote SLM and LDN.</p> <p>Uganda Landcare Network promoting use of WOCAT tools amongst its members. The Land Development Department in Thailand promoting the WOCAT tools across the country.</p> <p>There are no progress reports of regional/ national partners, but more and more countries are joining the network and are sharing SLM practices</p>	<p>WOCAT Project/ Financial reports</p> <p>Questionnaire survey and interviews</p> <p>LDN Training of UNCCD focal points (see publications)</p> <p>Field visit to Uganda and Thailand (see Boxes 7 and 6)</p>
<p>3. A recognized, jointly developed and supported harmonized Global WOCAT SLM Platform for Knowledge Management and Decision Support</p>	<ul style="list-style-type: none"> <li>- effective global WOCAT SLM Network established</li> <li>- harmonized and standardized Global WOCAT SLM Platform for Knowledge Management and Decision Support used by relevant SLM actors</li> </ul>	<ul style="list-style-type: none"> <li>- progress reports by regional/ national WOCAT members/ initiatives/hubs</li> <li>- monitoring of use of Global WOCAT SLM Platform</li> </ul>	<p>WOCAT Network is active and functioning. The SLM database is extensively used and adopted as the UNCCD standard, but needs to be modernised with better search functions and compatibility with other systems.</p> <p>By August 2019, 1080 technologies, 462 approaches and 443 PRAIS practices in the database. 11 125 visits to the WOCAT website from 167 countries; 21 212 visits to WOCATpedia from 185 countries and 13 004 visits to the global SLM database from 195 countries</p>	<p>Questionnaire survey</p> <p>Internet statistics for the WOCAT website, Global SLM database and WOCATpedia</p> <p><a href="https://www.wocat.net/en/global-slm-database">https://www.wocat.net/en/global-slm-database</a></p>

### 3.3 Behavioural change

Outcome harvesting was used to collect evidence of behavioural change. These contributions are listed together with their source in Appendix 4: The period 2012-March 2015 is summarised in the WOCAT Review of the transition/consolidation period; and the period from December 2015-June 2019 are summarized in six-monthly project/financial reports.

The results of the outcome harvesting indicate that an increasing number of countries and institutions are using WOCAT tools and methods to document SLM knowledge. For example, already by the end of 2015, more than 30 countries were using WOCAT. WOCAT is also increasingly referred to

in UNCCD country reports as a tool to document, classify and upscale SLM best practices (Box 1). Institutional partners, such as CIAT are also adapting their reports on SLM to WOCAT standards. The UNCCD parties were informed by the UNCCD on the launch of the global WOCAT database on SLM following the adoption of WOCAT as a standard for reporting on best practices in 2014. Learning materials were also disseminated to UNCCD focal points through the UNCCD Secretariat. By September 2017 the global SLM database counted a total of 1 638 SLM practices, 825 SLM technologies, 360 SLM approaches and 453 UNCCD PRAIS practices from 124 countries and 294 users. In mid-2019, the database comprised a total of 1 985 practices, including 1 080 SLM technologies, 462 approaches and 443 PRAIS practices. It can be concluded that WOCAT is becoming the global standard for reporting on SLM for countries and international institutions, including for the UNCCD.





## BOX 1: Example of references to WOCAT in UNCCD reporting

The 2017-2018 UNCCD reporting process - the first reporting process under the UNCCD 2018-2030 Strategic Framework - officially concluded on 31 August 2018. WOCAT is increasingly referred to in country reporting to the UNCCD, as a useful tool to document, classify and upscale SLM best practices, for example in:

**Argentina** UNCCD Reporting 2017-2018, p. 37:

[https://prais.unccd.int/sites/default/files/pdf\\_reports/unccd\\_Argentina\\_2018\\_o.pdf](https://prais.unccd.int/sites/default/files/pdf_reports/unccd_Argentina_2018_o.pdf)

**Bangladesh** UNCCD Reporting 2017-2018, p.11:

[https://prais.unccd.int/sites/default/files/pdf\\_reports/unccd\\_Bangladesh\\_2018\\_o.pdf](https://prais.unccd.int/sites/default/files/pdf_reports/unccd_Bangladesh_2018_o.pdf)

*“Training imparted to the core partners of Establishing National Land Use and Land Degradation Profile toward Mainstreaming Sustainable Land Management Practices in Sector Policies – ENALULDEP/SLM on WOCAT Tools for documentation of SLM best practices. The project will document 40 SLM best practices from 12 selected ‘Hotspots’. The document will support to identify areas of interventions to address LDN in the country.”*

**Philippines** UNCCD reporting 2017-2018, p. 41:

[https://prais.unccd.int/sites/default/files/pdf\\_reports/unccd\\_Philippines\\_2018\\_1.pdf](https://prais.unccd.int/sites/default/files/pdf_reports/unccd_Philippines_2018_1.pdf)

**China** UNCCD reporting 2017-2018, p. 34:

[https://prais.unccd.int/sites/default/files/pdf\\_reports/unccd\\_China\\_2018\\_o.pdf](https://prais.unccd.int/sites/default/files/pdf_reports/unccd_China_2018_o.pdf)

**Tunisia** UNCCD reporting 2017-2018, p.30 and 32:

[https://prais.unccd.int/sites/default/files/pdf\\_reports/unccd\\_Tunisia\\_2018\\_1.pdf](https://prais.unccd.int/sites/default/files/pdf_reports/unccd_Tunisia_2018_1.pdf)

**Cambodia** UNCCD reporting 2017-2018, p.35:

[https://prais.unccd.int/sites/default/files/pdf\\_reports/unccd\\_Cambodia\\_2018\\_o.pdf](https://prais.unccd.int/sites/default/files/pdf_reports/unccd_Cambodia_2018_o.pdf)

**Ecuador** UNCCD reporting 2017-2018, p.16:

[https://prais.unccd.int/sites/default/files/pdf\\_reports/unccd\\_Ecuador\\_2018\\_1.pdf](https://prais.unccd.int/sites/default/files/pdf_reports/unccd_Ecuador_2018_1.pdf)

**Panama** UNCCD reporting 2017-2018, p.30:

[https://prais.unccd.int/sites/default/files/pdf\\_reports/unccd\\_Panama\\_2018\\_o.pdf](https://prais.unccd.int/sites/default/files/pdf_reports/unccd_Panama_2018_o.pdf)

The outcome harvesting also shows that WOCAT methods and tools are being mainstreamed in big donor programmes and projects as well as national programmes to tackle global challenges, such as LDN. For example, WOCAT methods and tools have been mainstreamed in CACILM (Central Asian Countries Initiative in Land Management), ICIMOD, FAO, FAO’s Latin America and Caribbean (LAC) and Near East and North Africa (RNE) offices, Buthan, Bangladesh, China, Nepal, Senegal, South Africa, Tunisia, etc., and also in UNCCD SLM best practice reporting, and the FAO-GEF project on DS-SLM, as well as GIZ, and ICARDA. GIZ promoted WOCAT products in their projects where appropriate. In addition, jointly with ISRIC, and CI, WOCAT has developed four papers of relevance to SLM and Land Degradation Neutrality (LDN).

Finally, according to outcome harvesting, the global WOCAT SLM platform and WOCATpedia are used extensively by a growing number of countries. In the last project/financial report there were 11 125 visits of the WOCAT website from total 167 countries; 21 212 visits of WOCATpedia from total of 185 countries, and 13 004 visits of the Global SLM Database from total 195 countries. However, to what extent the global WOCAT SLM platform provides decision support as well as the links to decision making are not clear in the WOCAT reporting during the period in question and is therefore analysed further below using different methods.

### **Chapter 3 findings and recommendations: Effectiveness of WOCAT/Achievement of results**

- WOCAT has been effective in delivering its expected outputs and outcomes, although there is need for better tracking of outputs in countries. Further decentralization of the network could improve its cost effectiveness.
- There is a missing step in the WOCAT theory of change between outcome and impact related to the expected behavioural change of WOCAT's direct boundary partners required to achieve impact.
- Using outcome harvesting made it possible to assess WOCAT's progress along its impact pathway. It shows that an increasing number of countries and institutions are taking up and using WOCAT tools and methods and that they are being mainstreamed in big donor programmes and projects as well as national programmes.
- The global WOCAT SLM platform and WOCATpedia are used extensively by a growing number of countries (more than 21 000 visits from 185 countries in the last project report). However, the database needs to be modernised with improved search functions (see also sections below) to enhance accessibility.



# 4. Impacts of WOCAT

This section starts with looking at how WOCAT is used, followed by an attempt at assessing the impact of WOCAT using multiple sources of evidence, such as a questionnaire survey and interviews. Verifications in the field were also conducted in selected countries. This included meetings with agricultural extension staff and visits to sites with technologies and approaches documented by WOCAT in Ethiopia, South Africa, Thailand and Uganda.

## 4.1 Use of WOCAT

According to the questionnaire survey, the most common use of WOCAT is still for documentation of SLM best practices. However, using the WOCAT database as a source of information for selection of SLM practices comes second, followed by learning about SLM and implementation of SLM projects using WOCAT knowledge, and being involved in WOCAT related projects (Table 2). This indicates that WOCAT plays an important role in implementation of SLM, and not only for documentation even in countries that are not participating in the FAO/GEF DS-SLM project.

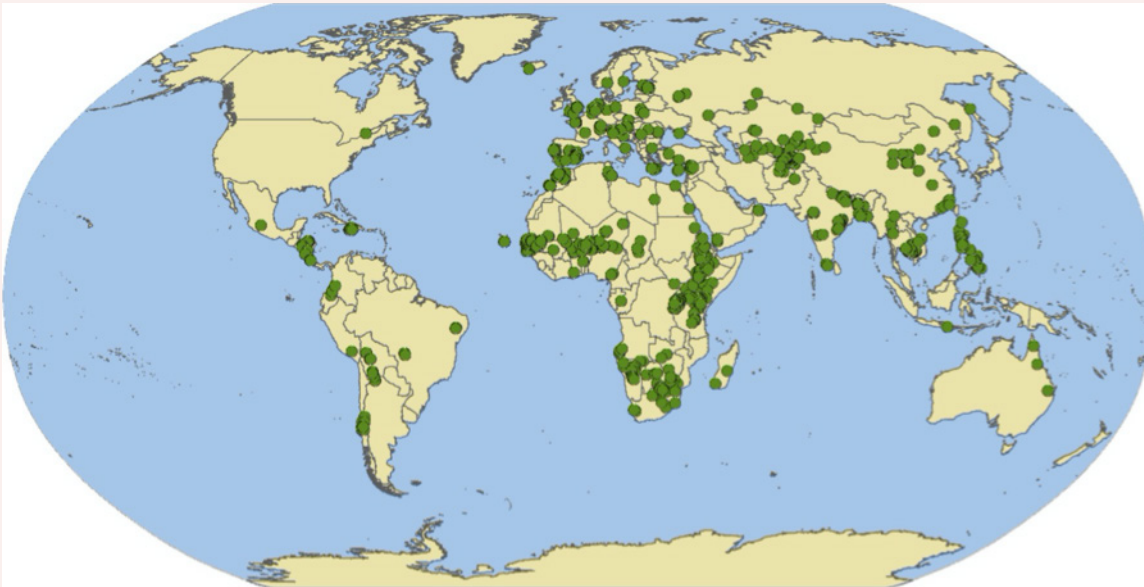
Nature of involvement in WOCAT	%	No
Involvement in the documentation of Sustainable Land Management (SLM) practices	63	27
Learning about SLM from the database: for a country/ region or for specific problems, natural and human conditions	51	22
Use of the WOCAT database as source of information for selection of SLM practices	58	25
Using the WOCAT books and documentation for learning	47	20
Using the WOCAT tools, methods and books for teaching and training	47	20
being involved in WOCAT related projects	49	21
Implementation of SLM projects using WOCAT knowledge	51	22
Planning of projects and/or implementation of activities	28	12
Revising and/or developing policies related to SLM	21	9
Supporting global/international initiatives related to SLM and/or land degradation	35	15
Other (Secretariat or Consortium partner, etc.)	14	6
TOTAL respondents: 43		

## 4.2 WOCAT's biophysical impact

There are a number of challenges associated with assessing the impact of WOCAT, as it is first and foremost a network and SLM knowledge platform. However, given the fact that WOCAT has existed for more than 25 years, it is high time to identify ways of assessing its impact on land resources, ecosystems and livelihoods in the partner countries. Some attempts in this direction already exist. For example, WOCAT's on-the-ground impact using remote sensing is analysed in Gonzalez-Roglich et al. (2019) that conclude that significant impact of WOCAT SLM technologies can be detected 10 years after the establishment in several parts of the world (Box 2). As a comparison, an impact assessment called Value for Money Analysis for the Land Degradation Projects of the GEF, also based on remote sensing, concluded that significant impact only occurred after a certain lag time when significant greening from SLM could be observed (GEF IEO, 2016). In addition, the World Atlas of Desertification (WAD) has used WOCAT for global assessment of land degradation and sustainable land management (Cherlet et al., 2018). This is based on comparing the convergence of biophysical and socio-economic global change issues in potential problem areas with documented solutions from similar regions in the WOCAT database.

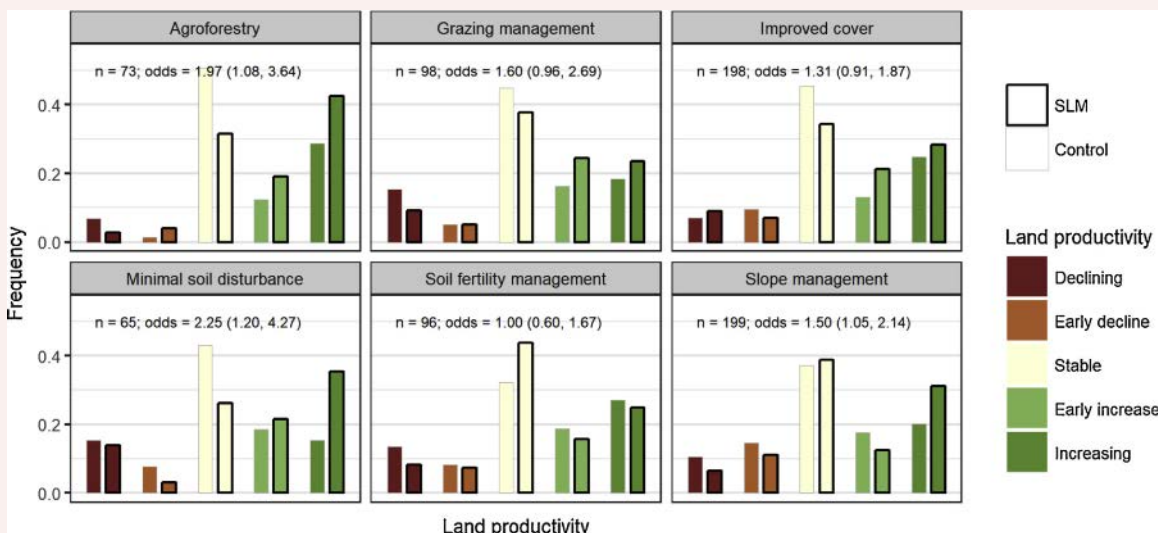
### Box 2: Global Impact Assessment of WOCAT Technologies based on Remote Sensing

Gonzalez-Roglich et al. (2019) used 1 063 globally distributed SLM technologies documented in the WOCAT database to assess the impact on land productivity indicators derived from remote sensing. Normalized difference vegetation index (NDVI) was used as a proxy for productivity.



Location of WOCAT SLM technologies in the WOCAT Global SLM Database (n=1063). (From Gonzalez-Roglich et al., 2019)

The WOCAT data was analysed according to SLM measure, SLM group and type of land degradation addressed. The analysis of SLM groups showed that the presence of SLM technologies under agroforestry, minimal soil disturbance, and slope management experienced statistically significant higher greening compared to control sites during the period 2001-2015 (see below).



Relative frequency of each of the 5 classes of the land productivity indicator representing change between 2001 and 2015 for the SLM technologies present in the WOCAT database and similar sites selected using the matching procedure (control) grouped by SLM groups. “n” indicates sample size, and “odds” indicates the odds ratio for an ordinal logistic regression (with 95% confidence intervals in parentheses). (From Gonzalez-Roglich et al., 2019)



This evaluation has also attempted to solicit direct feedback, through the questionnaire survey, from WOCAT practitioners on when, where and how WOCAT has contributed to improving land resources and ecosystems on the ground. The information presented below is based on a limited random sample of countries from Africa, Asia, Europe and Latin America and the Caribbean (Table 3) but provides good entry points for understanding WOCAT's biophysical impacts.

Quite a number of countries have reported positive impacts of SLM, but few understand how to measure or report impact on land resources and ecosystems. However, improvements in soil carbon/organic matter is reported (Box 3), as well as increase in area under SLM, improved land cover, enhanced productivity and enhancement of ecosystem services. Reduced water stress and salinity are also mentioned as biophysical impacts.

### Box 3: Estimation of carbon benefits of a WOCAT Technology

The Closed Area Management in Abagerima Learning Watershed (Ethiopia) documented its closed area management' technology in the WOCAT database:

**Description:** Closed area management is an area within a watershed into which human and livestock access is limited, and the area is left for natural recovery of woody vegetation and soil. Management relates to activities by the community to ensure such protection and to support regeneration, such as constructing drainage and retention structures, selective bush removal, regular grass cutting, tree planting, and organisation of economic activities like grass cutting.

**Location:**  
Geo-reference of selected sites  
37.50862, 11.65783  
37.50725, 11.66502  
37.49008, 11.65485

**Area impacted:** 30 ha  
**Time covered:** 2012 - 2018

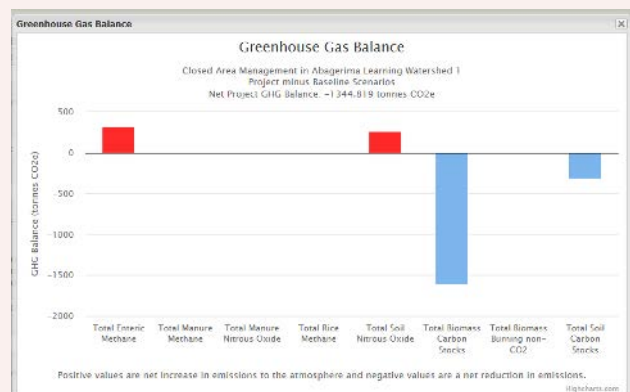
Number	Name	Description
Technology 1029	Production and use of rice black bacher in rice seed beds and vegetable production	
Technology 1047	Churning high grass (Panicum galeatum) on cattle fodder between seed and sowing	
Technology 1048	Cattle dung briquet	
Technology 1044	Intillage of poultry fields using motor-powered vehicles (tractors)	
Technology 1040	Ecotax system of household based fuel cuts with cattle manure	
Technology 1050	Distribution of irrigation channels in sandy soils with access bags and PVC-based pipes	
Technology 1090	Intercropping of maize bean and banana in the plateau	
Technology 2060	Intercropping of vegetables to control pests along the Malawi river bank	
Technology 2068	Home Garden (Fruitful, Linnæa, Supplemental Crops)	
Technology 2101	Older grass cultivation using tractor/motorcycle to plough fields	
Technology 2116	Autonomous Pumping Hydrules (Water Pump) using hydraulic flow for domestic use	
Technology 2117	Using slurry from biogasifier for soil improvement	
Technology 2126	Crop rotation between maize bean in combination with olive irrigation	
Technology 2155	Intercropping of agave with mango trees using the straw mulching to reduce ev.	

The link between WOCAT and the GEF Carbon Benefits Project (CBP) was then utilised to pull this information into the CBP system. This completed about 60% of the information needed for the CBP to do a GHG assessment. The rest of the information (e.g. numbers of livestock present in the area before the technology was implemented) was completed in the CBP system by the project team. The CBP Simple Assessment was run and a total net GHG balance for this technology produced. Results:

**Expected Carbon and Greenhouse Gas Benefit for the report period (2012 – 2018):** -1345 t CO<sub>2e</sub> over 6 years

**Annual incremental benefit:**  
-224 t CO<sub>2e</sub> / year

**Benefit per ha/yr:**  
-7.5 t CO<sub>2e</sub>



It is often local stakeholders that have taken the lead in implementing SLM practices together with extension staff. However, WOCAT has also been mainstreamed in a number of projects that report that project staff is leading implementation. There are also some examples of the private sector taking the lead in implementing SLM, such as in potato growing areas in Sri Lanka.

### 4.3 WOCAT’s socio-economic impact

According to the questionnaire survey, to improve livelihoods, WOCAT is used for training and capacity building of land users, for selecting attractive SLM practices to implement, to train extension and project staff, as well as for training and capacity building targeting women and for supporting implementation (Figure 2). Those who responded ‘Other’ had used

WOCAT for e.g. dissemination and awareness raising and for evaluation of impacts of SLM. This finding is corroborated by the field visits in four countries. Although socio-economic impacts have been documented in the case study countries, for example in Ethiopia and Uganda (Boxes 4 and 7), it was not very clear to most of the respondents to the survey how socio-economic benefits manifest themselves and could be measured and reported. However, some countries reported increases in productivity, yields and reduction in livestock losses thanks to improved SLM practices (Table 3). There were few examples of where women or disadvantaged groups, or youth had benefited or been targeted by WOCAT. But in Ethiopia energy saving stoves and improved chicken production were reported to target women and youth. In Thailand (Box 6), disabled people are recruited to help with development of new biotechnology using composting. In Bangladesh, vermi-composting for home gardens is targeting women. It was also mentioned that women groups could be formed when using the decision-support process as well as for training.

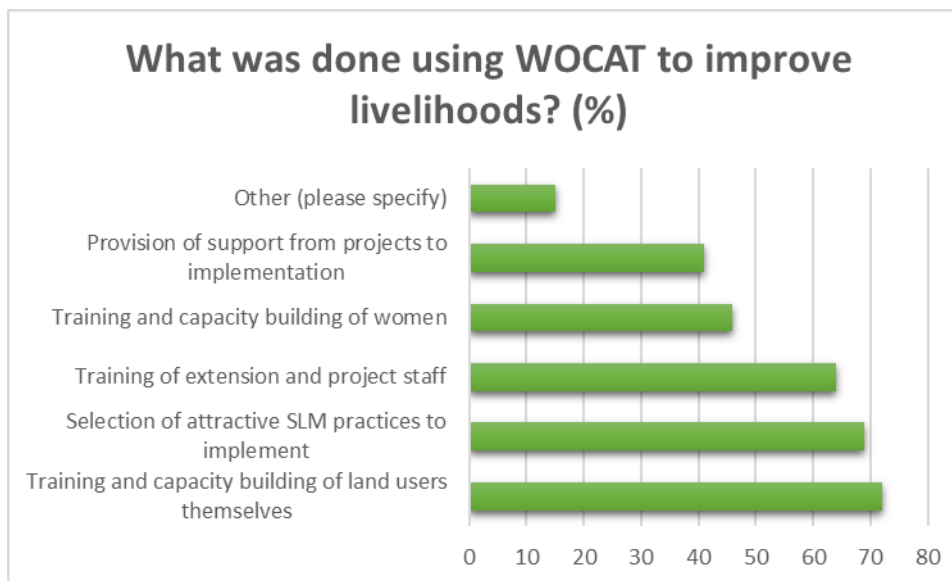


Figure 2. Use of WOCAT to improve livelihoods according to the evaluation questionnaire survey (respondents=39).

Moreover, achieving socio-economic impacts of SLM is intrinsically linked to the understanding of conditions hindering and enabling implementation of technologies and removal of barriers to SLM. The WOCAT Approaches are identifying such conditions, including availability and access to finance, institutional arrangements, legal framework and knowledge about SLM and access to technical support. In recent years WOCAT has undertaken more comprehensive analysis of this information, a good example being the recently published report on Sustainable Rangeland Management in Sub-Saharan Africa (Liniger & Mekdaschi Studer, 2019). In addition, the Stockholm Resilience Centre has been conducting research in collaboration with WOCAT on applicability of different water harvesting technologies in different social-ecological systems (SES) worldwide (Piedmontese et al., 2019). Improving the understanding of links to transboundary landscape governance is also seen as important.



**Table 3. WOCAT's impacts on land resources and ecosystems according to the questionnaire survey (total respondents=43).**

Country	When and where?	Who took the lead?	What was done?	How were land resources and ecosystems improved?	Additional socio-economic benefits
<b>AFRICA</b>					
<b>Africa regional (Burundi, Rwanda, Tanzania, Uganda)</b>	Kagera basin	FAO project coordinator and FAO technical assistance	Documentation of technologies and approaches, and mapping	Enhancement of ecosystem services	N/A
<b>Egypt</b>	Alexandria	Private sector	implementation of SLM	Soil carbon	N/A
<b>Ethiopia</b>	Different Learning Watersheds (in the north)	Project technical experts and extension staff.  Land users	Support to implementation of SLM technologies  Capacity building	Sustainable improvement of land resources and ecosystems	Area enclosures gave off-farm benefits
<b>Kenya</b>	Pastoral areas of the Masai	Land users themselves	Implementation of SLM technologies and approaches	Reduction of land degradation, more productive land, reduced water stress  Soil organic carbon improvement	No loss of livestock due to drought and water related shortages
<b>Morocco</b>	Project FAO-Midlet	Extension staff	Not yet	No	N/A
<b>Niger</b>		Staff of project	Implementation of SLM technologies and approaches	Reduced rates of chemicals and improved technology for production of millet and cowpea	Increased yields of millet and cowpea
<b>Nigeria</b>	Rural areas in the semi-arid environment in 2018	Rural areas in the semi-arid environment in 2018	Land users, extension staff and SLM experts	After one year communities reported positive effects on soil and water resources	Important yield increases
<b>Uganda</b>	Adjumani in northern Uganda in 2019	Extension staff	Decision-support workshop	Sustainable practices	N/A
<b>ASIA</b>					
<b>Asia</b>	Nepal, Afghanistan, Myanmar	Mainly extension staff	Training and demonstration of on-site technologies	Degraded land rehabilitated with vegetation	N/A
<b>Himalayan region</b>	Nepal, India, Pakistan, Bangladesh, Bhutan, Myanmar, China	NGOs and Governments	WOCAT methods helped in watershed management	More sustainable management – rainwater harvesting, soil moisture enhancement	Improved management linked to income generation
<b>Bangladesh</b>	Started in Chittagong Hill tracts in 2006, but being upscaled	NGO and students	Selection and screening of SLM best practices	N/A	N/A
<b>Cambodia</b>	5 provinces	Extension staff and land users themselves	On-farm demonstration	N/A	N/A
<b>China</b>	Heilongjiang province, North-eastern China	Water Resources Committee	SLM approaches used for gully control	Control of gully erosion	N/A
<b>Nepal</b>	Gagalphedi village	Land users and forest technical person	Land stabilisation from landslide	Sustainable solution	Increase in productivity

<b>Sri Lanka</b>	Potato growing area in Sri Lanka	Private sector	Implementation of SLM technologies or approaches	Not yet experience	N/A
<b>Tajikistan</b>	Muminabad from 2011 until now	Project staff, CDE	Analyse watershed problems and prioritise solutions	Large areas are under sustainable management	N/A
<b>Thailand</b>	two decades Khon Kaen, two years ago	All stakeholders – land users, researchers, extension staff	Scaling up and out of SLM technologies	Salt affected land has improved  Saline soils have improved and rice yields increased	N/A
<b>EUROPE</b>					
<b>Spain</b>	Spain in 2018	Land users	Support to implementation of SLM	Improved organic matter	N/A
<b>Russia</b>	N/A	N/A	Development of technologies for saving natural resources	Accumulation of soil organic carbon	N/A
<b>Bosnia and Herzegovina</b>	Trebinje, Pelagicevo (FAO/GEF-DS-SLM)	Land users, extension staff and private sector	Implementation of SLM technologies and approaches	Afforestation, irrigation and combat of land degradation	N/A
<b>LATIN AMERICA AND THE CARIBBEAN</b>					
Bolivia	High Plateau and Chaco Region	Municipality	Selection of SLM practices	Soil fertility improvement	Crop diversification
Colombia	In Colombia 2018  San Juan de Nepomuceno Bolivar in 2018	Farmer Association  Farmers, extension staff	Evaluation of SLM impact  Project formulation and implementation	Better land cover, soils and productivity	N/A

## Box 4: Ethiopia impact assessment

WOCAT has documented a total of 83 technologies and approaches in Ethiopia and also published a book in 2010 with a compilation of sustainable land management technologies and approaches. WOCAT has helped introduce participatory approaches to SLM in Ethiopia through documentation of SLM technologies and approaches and support to advisory services through the government extension system. Examples of participatory approaches to SLM documented by WOCAT includes Local Level Participatory Planning (LLPA), Farmer-Research Extension Group (FREG) and Learning Watersheds. WOCAT has also contributed to awareness raising and training of land users through integration of its approaches, technologies and tools into the extension service at district level and to foster demand-driven technologies through FREGs, etc. In addition to reviewing the WOCAT database for Ethiopia, the evaluator also undertook field visits to sites where WOCAT technologies had been implemented

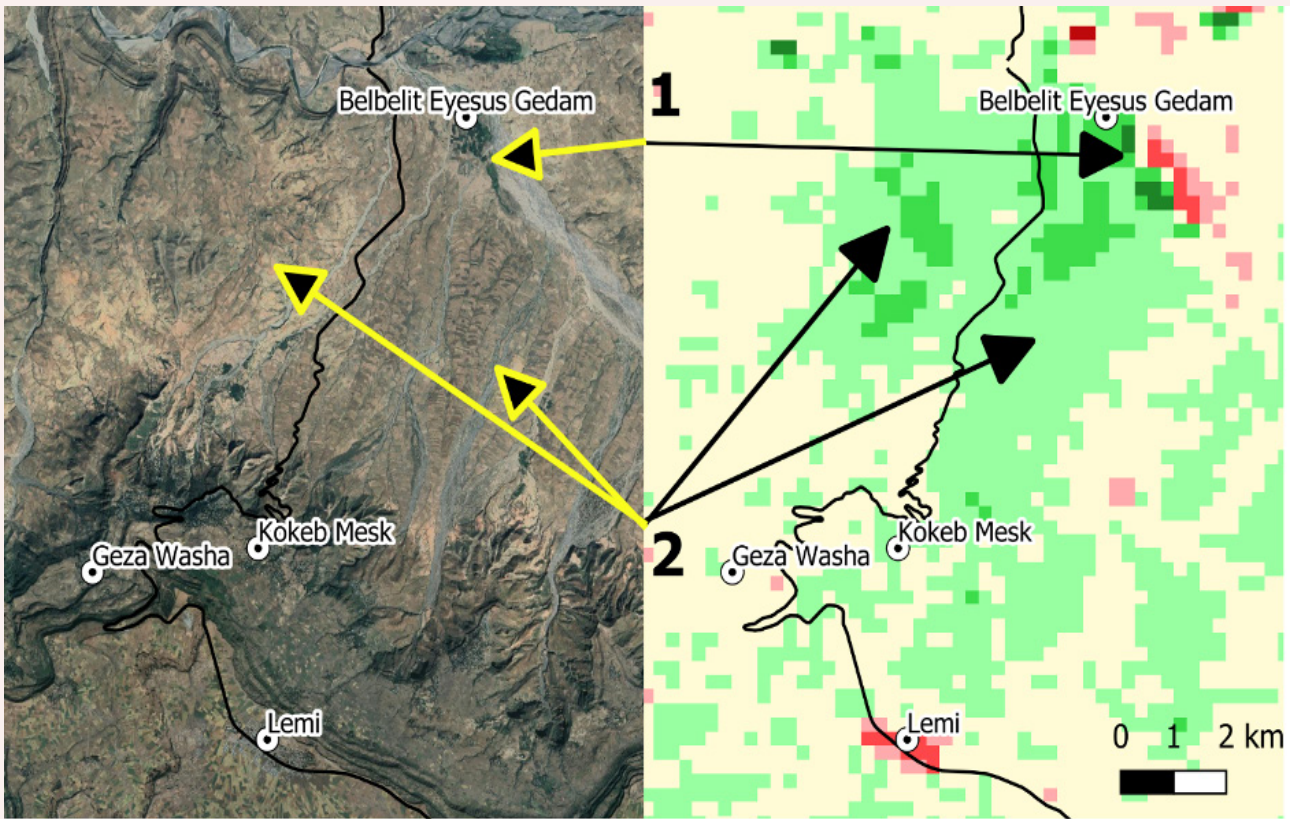


**Impact on-the-ground: Jemma Major Watershed**  
The Jemma major watershed is located in Amhara region, Ensaro Woreda (District) approximately 150 km north of Addis Ababa. Elevation ranges from 1 400 m to 2 600 m and it falls under four agroecological zones with a very steep gradient. The field visit covered three micro-watersheds – Bereku, Bera and Amba-Ras – located in the upper, middle and lower parts of the Jemma major watershed. Area closures documented by WOCAT have been implemented in the upper part, including enrichment plantations and natural generation thanks to exclusion of livestock and human interference. Implementation of area closures begins with the selection and demarcation of the area through genuine participation of land users. After identifying the area to





be closed, ditches and terraces are established using stones combined with multipurpose grasses or shrubs. Depending on the site conditions, enrichment trees of species that can further rehabilitate the land and restore the soil are planted. Significant improvements of land cover have been seen since the implementation of area closures and this was confirmed by the field visit as well as positive trends in NDVI between the year 2001 and 2018 using Trends.Earth (<http://trends.earth/docs/en/>). Normalized Difference Vegetation Index (NDVI) is often used as a proxy for productivity. Positive trends in NDVI is seen at point 2 in the in the satellite images below as a green spot where area closures with terracing and soil conservation have been implemented. Point 1 in the map below shows a green spot where irrigation has been implemented for production of fruits and vegetables.



*Trends in NDVI between the year 2001 and 2018 using Trends.Earth for the area visited in the Jemma major watershed (courtesy César L. Garcia, WOCAT, Argentina).*

Communities use grass from the area closures through the cut and carry system, also called zero grazing, that increases the forage quantity and quality by improving the fodder and grass biomass production per unit area. It generates socio-economic benefits for its user groups for equitable sharing of biomass. The cut and carry system is normally expanded to adjacent watersheds and villages through sharing of experiences at field days and visits by experts and leaders.

The middle part of the watershed also exhibits area closures as well as forest development. Communities benefit through collection of wood and construction materials for social services, such as schools and community social events. In addition, it has a multipurpose community pond serving as a source of drinking water for more than 1,000 livestock and nearly 300 households. It also provides water for irrigation for vegetables benefitting 65 men and 7 women.

The foothills and flat part of the watershed is covered by vast farmlands with soil and water conservation structures. Hillside terraces help retain runoff and sediment on steep sloping land and to accommodate tree seedlings to be planted on them. Hillside terraces are usually combined with area closure. Little management is needed for their maintenance, except for taking care of the trees planted, and for correcting damage that may be caused by livestock grazing.



In conclusion, WOCAT has achieved major impacts in Ethiopia on the environment and livelihoods at the local level. The main mechanism has been to work with existing institutions and programmes, including the agricultural extension service, to introduce SLM in a participatory and equitable way. However, a national analysis of what works where and why could help inform further upscaling of SLM investments and promote mainstreaming of the WOCAT methods and tools in relevant institutions at national, regional and district levels.

(Photos: A. Tengberg)

## 4.4 Mainstreaming of WOCAT

According to the outcome harvesting, questionnaire survey and presentations at the Global WOCAT Network Meeting in 2019 as well as country visits, WOCAT technologies, approaches, tools and methods have been mainstreamed in both planning processes, projects and programmes from the local, sub-national, national, regional to the international level. Some examples where WOCAT has been mainstreamed include (Table 4):

**Table 4. Mainstreaming of WOCAT tools and methods in programmes and projects.**

National and sub-national level programmes and projects	
Name of programme/project	Role of WOCAT and funding (when available)
ADB/GEF PRC-GEF Land Degradation Partnership (China) (2002-present)	<ul style="list-style-type: none"> <li>WOCAT tools and methods are used in the knowledge management component of the partnership to document and scale up good SLM practices in targeted provinces.</li> <li>Total funding to the Partnership from 2002-2014 amounted to USD840 million, of which the PRC Government and local beneficiaries have contributed 43%, financial institutions contributed 51% and the GEF contributed 6%. See Tengberg et al. (2016) for more information</li> </ul>
National land-use plan (Bolivia), in the plans of the Ministry of Agriculture (Bosnia and Herzegovina) and strategic documents (Ethiopia)	WOCAT tools and methods are used for territorial planning.



Sub-national level in the Mayahi Department in Niger and Kajiado District in Kenya	WOCAT tools and methods are used for territorial planning.
Government/GEF projects and in basin and watershed management projects and programmes (Bangladesh, Kenya, Morocco, Thailand)	WOCAT tools and methods are used to scale out SLM
LandCare Network with open access information for all users (Uganda, South Africa)	WOCAT tools and methods are used to document and characterize SLM best practices.
Teaching and research at university level (Spain, Netherlands, Sri Lanka, Kenya)	WOCAT tools and methods are used for training and capacity building in SLM.
Farm level (Egypt, Cameroon, Uganda, Cambodia, Laos)	WOCAT tools and methods were used to scale out SLM best practices.
IFAD projects in Cambodia, Laos and Uganda (2016-2019)	<ul style="list-style-type: none"> <li>The IFAD/WOCAT project works with agricultural extension services to create a national SLM database using WOCAT, that in turn is used to enhance policy dialogue and scaling up of SLM.</li> <li>The funding is USD2 million in total from IFAD.</li> </ul>
GEF-5 UNDP projects in South Africa, Olifants Catchment Landscape and Machubeni landscape assessment projects (ongoing)	<ul style="list-style-type: none"> <li>The UNDP/GEF project uses WOCAT to build capacity for the integration of SLM into development planning and for the development of innovative SLM interventions.</li> <li>There is USD4.2 million in funding from the GEF and associated in-kind co-financing in four different landscapes in South Africa (Box 5)</li> </ul>
Agricultural Department in South Africa	It uses WOCAT tools in Project Proposals for new SLM and land rehabilitation projects. (Box 5)
<b>Regional investment projects</b>	
GEF-6 Integrated Approach Pilot on Sustainability and Resilience for Food Security in Sub-Saharan Africa led by IFAD (2017-2022)	<ul style="list-style-type: none"> <li>WOCAT tools and methods are integrated into the programme component on Monitoring and assessment of ecosystem services, global environmental benefits and resilience that informs the scaling up of SLM in the 12 participating countries in Sub-Saharan Africa.</li> <li>It has a total funding of USD912 million with USD106 million from the GEF and the rest in co-financing from IFAD, World Bank, UNDP, FAO, CI and the 12 countries.</li> </ul>
GEF-7 Sustainable Forest Management Impact Program on Dryland Sustainable Landscapes led by FAO (starting in 2020)	<ul style="list-style-type: none"> <li>WOCAT tools and methods are integrated into the programmatic coordination, monitoring and scaling out that supports 10 countries in Africa and Central Asia.</li> <li>It has a total funding of USD906 million with USD96 million from the GEF and 810 million in co-financing from FAO, IFAD, IUCN, the 10 countries and other donors.</li> </ul>
GEF-7 Food Systems, Land Use and Restoration (FOLUR) Impact Program led by the World Bank (starting in 2020)	<ul style="list-style-type: none"> <li>WOCAT tools and methods will be used in the programme component on Development of Integrated Landscape Management Systems, which includes participatory planning and mapping, etc., as well as in the component on Capacity Building.</li> <li>Total funding amounts to almost USD2 billion with USD213 million from the GEF and 1.75 billion in co-financing from the World Bank, 18 countries and other donors.</li> </ul>
Integrated natural resources management in drought-prone and salt-affected agricultural production landscapes in Central Asia and Turkey (CACILM2) (2018-2023)	<ul style="list-style-type: none"> <li>WOCAT is involved in establishing a multi-country platform for knowledge consolidation and harmonization on SLM.</li> <li>The total funding of phase 2 amounts to USD76 million with USD11 million from the GEF and USD65 million in co-financing from FAO, ICARDA, GIZ and the 6 countries.</li> </ul>
The Transboundary Agro-ecosystem Management Project for the Kagera River Basin (Kagera TAMP) led by FAO (2009-2017)	<ul style="list-style-type: none"> <li>WOCAT was involved in documenting SLM best practices and in training and capacity building for scaling them out.</li> <li>Total project funding amounted to USD31 million with USD7 million from the GEF and USD24 million in co-financing from FAO and the four countries.</li> </ul>

Global and regional capacity building programmes and projects	
Regional level through training and capacity building (Hindu-Kush Himalayan region, Latin America)	<ul style="list-style-type: none"> <li>Through ICIMOD and CIAT, respectively</li> </ul>
Decision Support for Mainstreaming and Scaling up of Sustainable Land Management (DS-SLM) led by FAO (2015-2019)	<ul style="list-style-type: none"> <li>WOCAT has been leading the establishment of the Global Land Degradation and SLM knowledge management and decision-support platform.</li> <li>Total funding amounts to USD39 million with USD6 million from the GEF and USD33 million in co-financing from FAO, SDC/WOCAT and participating countries.</li> </ul>
UNCCD through COPs, CRICs and the SLM database (CDE)	<ul style="list-style-type: none"> <li>For example, LDN training for UNCCD Focal Points at the CRIC in 2019.</li> </ul>
Strengthening Land Degradation Neutrality data and decision-making through free and open access platforms (starting in 2020)	<ul style="list-style-type: none"> <li>WOCAT is working with CI to link Trends.Earth with the WOCAT database for LDN implementation and monitoring.</li> <li>Of USD2 million if funding, USD180 000 is earmarked for WOCAT.</li> </ul>

WOCAT has thus been mainstreamed and taken up by an impressive array of countries and institutions. However, this evaluation cannot do justice to the spread and uptake of WOCAT, especially not at the national and sub-national levels. The results from the survey and interviews indicate that the impact of WOCAT is far-reaching and that it has catalyzed substantial amounts of investments in SLM, for example the GEF-6 and GEF-7 Integrated/Impact Programmes that are using WOCAT tools and methods have around USD one to two billion each in total funding of which at least USD100 million is from the GEF per programme. Other large projects and programmes includes the GEF Land Degradation Partnership with China and CACILM2 that covers Central Asia and Turkey. However, the global mainstreaming of WOCAT is difficult to assess due to lack of systematic monitoring and reporting by the network of how WOCAT has been integrated into new programmes and projects.

In collaboration with the FAO/GEF project DS-SLM (Decision Support for Mainstreaming and Scaling up SLM), WOCAT has developed a Sustainable Land Management Mainstreaming Tool (Bastidas Fegan, 2019) that provides a step-by-step guide starting with a rapid assessment of barriers to SLM all the way to formulation of an action plan to scale out and up of SLM, but it will take more time to see if this will happen in all the 15 countries that participate in the project (Figure 3).



Figure 3. Sustainable Land Management (SLM) Mainstreaming Tool developed by the DS-SLM project.

The case study from South Africa (Box 5) is illustrating the continued mainstreaming and integration of WOCAT tools and methods in national institutions, programmes and projects in a country that has been a member of WOCAT for 25 years. Although there has been turnover of staff and hiatus in funding to WOCAT in South Africa, WOCAT continues to be used in new projects and programmes. But again, the lack of systematic monitoring and reporting of the use of WOCAT at national level makes it difficult to quantify its impact. South Africa is therefore suggesting the use a simple questionnaire every year to monitor the uptake of WOCAT at various levels.



## Box 5: South Africa Impact Assessment.

South Africa has been active in WOCAT since 1994 and a total of 53 WOCAT SLM practices have been documented. A book was published in 2009 with a compilation of sustainable land management technologies and approaches in South Africa (Lötter, L. et al, 2009: Sustainable Land Management Practices of South Africa, 211 pp. (20 technologies and 19 approaches)). WOCAT has helped documenting many participatory approaches to SLM and there is also a strong focus on water management in many of the practices (e.g. water harvesting), soil and water conservation (SWC) and rangeland management.



*SLM technology: Pitting in South Africa (Photo: J. Buckle).*

Impact through mainstreaming: Scaling up of SLM through integration of WOCAT into programmes and projects. Currently, there is no central coordination of WOCAT activities in South Africa after the staff that had championed WOCAT since 1994 left the Department of Agriculture. The WOCAT tools are therefore at the moment promoted on an ad-hoc basis. Nevertheless, WOCAT continues to be used in SLM programmes and projects in South Africa, for example in:

### 1. A UNDP/GEF project

Securing multiple ecosystems benefit through SLM in the productive but degraded landscapes of South Africa. The objective is to build capacity for the integration of SLM into development planning, including developing tools for the analysis of vulnerability and the development of innovative SLM interventions. With USD 4.2 million in funding from the GEF and associated in-kind co-fi-

nancing in four different landscapes in South Africa the project is using the WOCAT tools in the following way:

- To assess land degradation in the Olifants Catchment to guide restoration work and also to verify remote sensing research done to determine vulnerability towards land degradation in the area. In the same exercise, a mobile app was tested for the first time using ODK Collect to capture the WOCAT QM data off-line in the field and then submit to a central database (spreadsheet at this stage).
- A similar assessment was done in the Machubeni landscape in the Eastern Cape and during this assessment (October 2019) the updated data capturing tool and WOCAT land degradation assessment questionnaire (QM) was used.



Team of experts orientation on the WOCAT tool QM for use in Machubeni landscape, South Africa (Photo C. Zazu).

- The WOCAT database was used by Responsible Parties within the project, especially the Council for Scientific and Industrial Research (CSIR) for the Olifants Catchment to determine suitable technologies and approaches for the landscape, considering the unique land degradation problems they encounter.
- d) The SLM project is also a pilot site for the GEF Funded Sustainable Land Management and Climate Change Mitigation Co-benefits (SLM-CCMC) project. The objective of the project is to create an environment which will make it easier for land management project managers to realise the climate change co-benefits of sustainable land management practices. The CBP tool was tested and applied in the Baviaanskloof catchment and WOCAT Technologies and Approaches Questionnaires will be completed for the main conservation approaches used in the Baviaanskloof to mitigate the impact of climate change.



Machubeni Landscape, Eastern Cape (Photo: L. Lindeque)

well, have determined the real and underlying causes of LD and consider all aspects of LD in the design of suitable and sustainable solutions as project proposals. Unfortunately, many of these projects are funded through the Expanded Public Works Programme with a strong emphasis on job creation and it is therefore difficult to find a good example of the use of WOCAT right through to a measurable and sustainable impact on environmental and social benefits.

## 2) Assessment

As part of the LADA Project a National Assessment of land degradation and SLM using WOCAT QM as a basis was done between 2008 and 2011. The results of that assessment were used as a baseline layer to determine the Land Degradation Neutrality Targets for South Africa.

## 3) The LandCare Program

The LandCare Program of the Department of Agriculture in South Africa are using parts of the WOCAT tools in their Project Proposals for new SLM and land rehabilitation projects to make sure applicants access the project area

In conclusion, despite the lack of concerted efforts by either Government or the private sector in South Africa in recent years to ensure the coordination and uptake of WOCAT by extension officers and farmers, WOCAT continues to be spontaneously adopted by government and donor funded SLM projects, extension agents and farmers. According to interviews, WOCAT has probably contributed significantly to scaling up of SLM in South Africa over the years, but it is difficult to estimate just how big its impact has been due to lack of monitoring and reporting of which projects and programmes are using WOCAT at the national and sub-national level. It is suggested to use a simple questionnaire every year to monitor the uptake of WOCAT at various levels, how it has led to behavioural change and supported the scaling up of SLM.



## Chapter 4 findings and recommendations: Impacts of WOCAT

- The WOCAT database is often used as a source of information for selection of SLM practices and for learning about SLM implementation, which indicates that WOCAT plays an important role in informing implementation of SLM and not only in its documentation.
- There is evidence that WOCAT has had significant impact in a number of countries on land resources, ecosystems and livelihoods. However, WOCAT should collect information on SLM impacts more systematically. It could be through simple questionnaire survey annually to the WOCAT Network members requesting information about projects using WOCAT, area that has been put under SLM, use of WOCAT tools, etc.
- WOCAT has been mainstreamed in an impressive number of multilateral and bilateral projects and positively influenced investment flows to SLM of billions of US dollars. However, it would also be useful to better track which donor funded projects that have adopted the WOCAT tools and methods in order to assess the funding WOCAT has contributed to leveraging in support of SLM. This would facilitate the assessment of WOCAT's achievements along the impact pathway outlined in the Theory of Change.
- In terms of research, it would be useful to better link the understanding of conditions enabling SLM to social science theory on what is driving as well as hindering behavioural change necessary to achieve scaling up of SLM. Impact assessment and monitoring of land management impacts on ecosystem health and ecosystem services is urgently needed, including scenario building and modelling of both on- and off-site impacts of scaling out of SLM.
- It would also be useful to use the WOCAT database and extensive dataset to analyse and improve the understanding of women's role in SLM and how women and youth could be better targeted in the implementation phase.

# 5. Relevance of WOCAT to development priorities and needs and the global SLM agenda

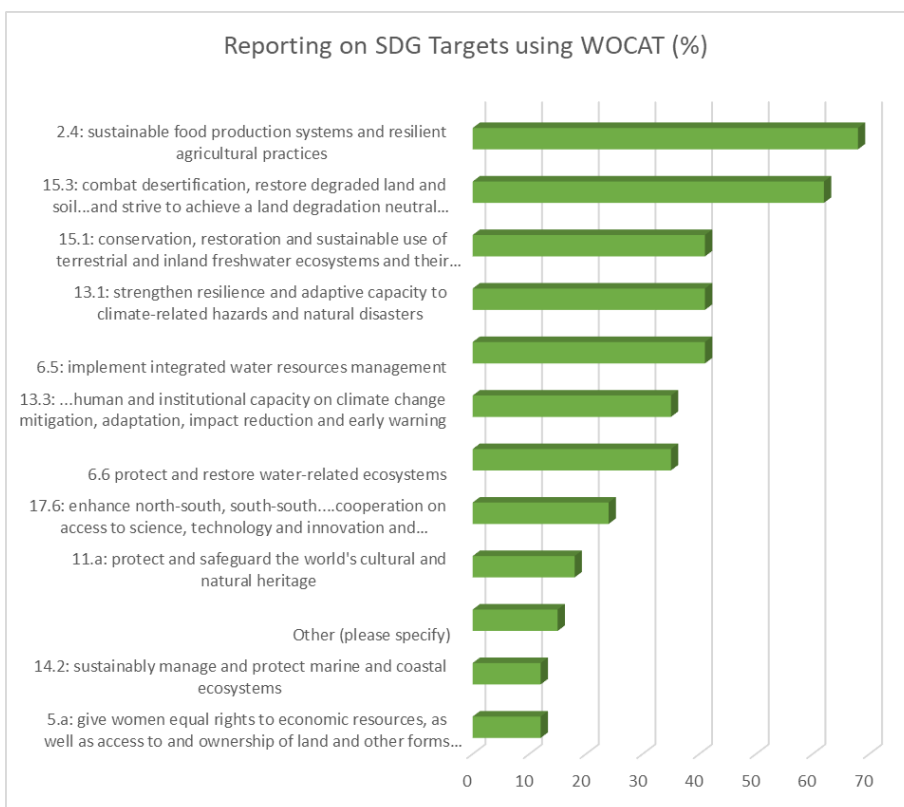
This section reviews WOCAT linkages to the Sustainable Development Goals (SDGs), especially SDG target 15.3 on Land Degradation Neutrality (LDN), as well as linkages to other international processes.

## WOCAT's contribution to the Sustainable Development Goals (SDGs)

An excellent overview of linkages to other SDGs is provided in the WOCAT publication on *Where People and their Land are Safer: A Compendium of Good Practices in Disaster Risk Reduction* (Harari et al., 2017). It is worth noting that it has been identified that WOCAT can contribute to specific targets under SDGs 2, 6, 11, 13, 14 and 15. It is also worth noting that SDG5 on Gender Equality, SDG12 on Sustainable Production and Consumption and SDG17 on Partnerships for the Goals have been left out. However, the latest WOCAT knowledge product (Liniger & Mekdaschi Studer, 2019) includes a discussion on the changing role of women in SLM due to outmigration of men and the feminization of agriculture and rangeland management. The publication *Making sense*

of research for sustainable land management (Liniger et al., 2017) was also important for the analysis of linkages to SDGs.

According to the questionnaire survey, WOCAT was most relevant for SDG 2.4 on sustainable food production systems and resilient agricultural practices, followed by SDG15.3 on LDN. But again, links to gender equality in SLM was not frequently mentioned. The category 'other' included those that did not see any relevance of WOCAT for the SDGs at all.












**Figure 4.** SDG targets addressed by WOCAT according to the evaluation survey (total respondents=34).

It can be concluded that WOCAT has been addressing development challenges such as food security, disaster risk reduction, climate change mitigation and adaptation, but gender, marine issues and cultural and natural heritage have received less attention (Figure 4). The evaluation also made a more qualitative analysis of WOCAT's contribution to SDGs presented in Table 5 that shows the full range of SDG targets where WOCAT could and in some cases is already making a significant contribution



**Table 5. Significance and links to WOCAT of several SDGs based on outcome harvesting.**

SDG	Target	Significance and links to WOCAT	Source
	2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	Food security, Disaster Risk Reduction (DRR)	Harari et al. (2017); Liniger & Mekdaschi Studer (2019)  WOCAT SLM Best Practice Database
	5.a: Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws	Women's rights and access to land resources and decision making for SLM	Liniger & Mekdaschi Studer (2019)  WOCAT SLM Best Practice Database
	6.5: By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate 6.6: By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	Water harvesting, SWC, DRR	Harari et al. (2017); Liniger et al. (2017)  WOCAT SLM Best Practice Database
	11.4: Strengthen efforts to protect and safeguard the world's cultural and natural heritage	Sustainable and resilient communities, DRR	Harari et al. (2017)
	12.A: Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production	Support to developing countries on research and development	Schneider et al. (2019); Liniger et al. (2017)  WOCAT SLM Best Practice Database
	13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries 13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	Allow to assess Climate mitigation and adaptation through SLM, DRR	Harari et al. (2017); Liniger et al. (2017)
	14.2: By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans	DRR	Harari et al. (2017)
	15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements 15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world	Resilient landscapes, land degradation neutrality (LDN)	Harari et al. (2017)  LDN papers (2019); Liniger et al. (2019); Garcia et al. (2019); Gonzalez-Roglich et al. (2019); Haren, et al. (2019)
	17.6: Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism	UNCCD reporting and knowledges sharing using WOCAT	Liniger et al. (2017) UNCCD website: <a href="https://knowledge.unccd.int/knowledge-products-and-pillars/best-practices-sustainable-land-management/about-unccd-wocat">https://knowledge.unccd.int/knowledge-products-and-pillars/best-practices-sustainable-land-management/about-unccd-wocat</a>

## 5.1 WOCAT’s contribution to the Sustainable Development Goals (SDGs)

LDN is encapsulated in SDG15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world. WOCAT’s linkages and possible contribution to LDN have been thoroughly analysed and several papers co-authored by the WOCAT Secretariat, ISRIC and other partners have been published. Table 6 below provides a summary of WOCAT’s contribution to LDN based on review of this literature:

**Table 6.** WOCAT’s contribution to achieving LDN.

Outcome	Significance of the outcomes	Contribution/output	Sources
WOCAT contributes with knowledge, information and practical tools to achieving a Land Degradation Neutral World (SDG15.3)	WOCAT can help promote scaling out of SLM and thereby contribute to LDN	Coupling of WOCAT and Decision- Support System (DSS) to achieve LDN – the role of SLM knowledge in evidence-based decision making	Liniger et al. (2019)
	WOCAT in combination with other global tools as well as expert assessments can be used to monitor progress towards LDN	Coupling WOCAT and big data from remote sensing to monitor LDN – Trends.Earth and precipitation data, integration of different methodologies	Garcia et al. (2019) Gonzalez-Roglich et al. (2019)
	Community-based SLM initiatives documented using WOCAT can contribute to achieving LDN on the ground	The contribution of community-based initiatives to LDN using WOCAT - identification of enabling conditions needed, such as knowledge development, inclusive land governance (including land tenure security), and access to technical and financial resources.	Haren, et al. (2019)
	WOCAT and its partners have contributed to capacity building in land use planning to achieve LDN	Training of UNCCD focal points in application of WOCAT tools and approaches in planning, implementing and monitoring LDN schemes	UNCCD CRIC17 Guyana: LDN response hierarchy and land-use planning - tools and approaches

It can be seen above that WOCAT can make a substantial contribution to LDN in terms of coupling of WOCAT and Decision-Support System (DSS) to achieve LDN, as well as coupling WOCAT and big data from remote sensing to monitor LDN. Community-based initiatives can also contribute to achieving LDN by using WOCAT, especially identification of enabling conditions needed, such as knowledge development, inclusive land governance (including land tenure security), and access to technical and financial resources. WOCAT can also contribute to LDN by training of UNCCD focal points in application of WOCAT tools and approaches in planning, implementing and monitoring LDN schemes. WOCAT could also become more strongly aligned with the LDN response hierarchy on avoid, reduce and reverse land degradation, and this typology could be added to the WOCAT database building on WOCAT’s classification of prevent, reduce and restore.

## 5.2 WOCAT’s contribution to Land Degradation Neutrality (LDN)

At COP14 of the UNCCD, the Drought Monitoring Toolbox was launched as requested by COP13. The toolbox is designed to provide drought stakeholders with easy access to tools, case studies and other resources to support the design of National Drought Policy Plan with the aim to boost the resilience of people and ecosystems to drought. Its third pillar on drought risk mitigation measures relies heavily on the WOCAT SLM database to find solutions (<https://knowledge.unccd.int/drought-toolbox/solutions/risk-mitigation/2346>). In addition, WOCAT has contributed to the third edition of the World Atlas of Desertification (Cherlet et al., 2018). WOCAT’s SLM database forms the basis for Part VI on solutions and SLM. It includes an overview of WOCAT documented SLM measures per global change issues identified to drive desertification and land degradation. It also includes a number of SLM success stories from Central Asia, India, China, Europe, East Africa, Latin America and the Caribbean, and North Africa. Both the UNCCD Toolbox and the WAD help facilitate the uptake and widespread implementation of WOCAT SLM technologies and approaches.

WOCAT is also frequently referenced in UNCCD Science-Policy Interface (SPI) report on Sustainable Land Management contribution to successful land-based climate change adaptation and mitigation (Sanz et al., 2017) to illustrate suitable technol-



gies, and in the IPBES assessment report on land degradation and restoration (IPBES, 2018). More recently, WOCAT has also been referred to in the IPCC Special Report on Land: climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems (IPCC, 2019). WOCAT is referred to in Chapter 4 on Land Degradation where it is recognized as providing information on SLM practices that can increase yields, enhance resilience to climate change, as well as providing information on barriers and strategies, methods and approaches to scale up SLM. Finally, WOCAT has also collaborated with the Economics of Land Degradation (ELD) CAMPUS Module: Land degradation versus sustainable land management that is using WOCAT for the description of SLM practices (ELD Initiative, 2019).

## 5.3 WOCAT in other international processes

In addition to contributing to UNCCD processes, WOCAT should continue to engage with the UNFCCC and the CBD and ensure visibility and engagement in the Decade of Ecosystem Restoration that will be launched in 2020 and is led by FAO and UNEP. It provides an opportunity to link up with processes such as the Bonn Challenge that focuses on restoring 350 million ha of the world's deforested and degraded lands by 2030. For example, Ethiopia (Box 4) is one of the countries with the largest commitments under the Bonn Challenge, and Thailand is scaling up WOCAT best practices to reduce encroachment on forest land (Box 6).

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### Chapter 5 findings and recommendations: Relevance of WOCAT to development priorities and needs and the global SLM agenda:

- WOCAT can contribute to a range of sustainable development issues and goals related to food security, disaster risk reduction, integrated water resources management, and climate change mitigation and adaptation. WOCAT should continue to contribute to the development of tools for assessing, reporting and achieving SDG target 15.3 on LDN.
- WOCAT should engage in UNFCCC and CBD processes and the Decade of Ecosystem Restoration that will be launched in 2020.
- WOCAT should continue to strengthen its focus on women, youth and disadvantaged groups and their role in agriculture and rangeland management, as well as integrated water resources management, social inclusion and human rights in line with SDGs 5 and 6.

# 6. Adequacy and efficiency of the institutional set-up, funding mechanism and funding strategy and overall functioning of WOCAT

This section reviews the institutional set up of WOCAT, how it functions, its funding and how it could be improved.

## 6.1 WOCAT institutional set-up

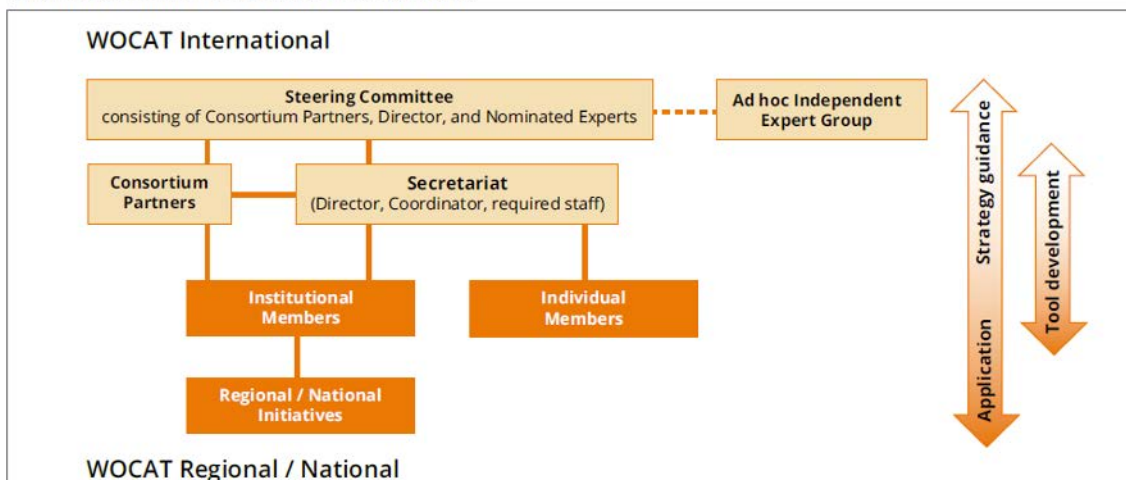
The global WOCAT network is formalized and defined by the Framework Agreement as WOCAT International (with eight Consortium partners), and WOCAT regional, and national including its institutional and individual members. The Consortium partners include the Centre for Development and Environment (CDE) at the University of Bern, the Swiss Agency for Development and Cooperation (SDC), the Food and Agricultural Organization (FAO) of the United Nations, World Soil Information (ISRIC), the German Development Cooperation (GIZ), the Center for Tropical Agriculture (CIAT), the International Centre for Integrated Mountain Development (ICIMOD), and the Science for Resilient Livelihoods in Dry Areas (ICARDA). The Steering Committee is comprised of the Consortium partners (Figure 5). Any institution that supports the vision and mission of the WOCAT network can become a member by contacting the WOCAT Secretariat for registration.

If so desired, institutional members can voluntarily sign a MOU to formalize their collaboration with the WOCAT International. Biennial global WOCAT network meetings provide a basis for exchange on progress with different initiatives and for directing future activities. The last WOCAT symposium and 19th WOCAT network meeting were held in May 2019 in Addis Ababa, Ethiopia, and were attended by the lead evaluator.

The WOCAT network is managed by a small Secretariat based at CDE in Switzerland and it currently only has three part-time staff members, including a Director working 20% for the WOCAT Secretariat and 60% on WOCAT projects, as well as two part-time staff serving the network between 40-30% of their time. There are also two staff members linked to the network that are project-based only.

Figure 5.

Organizational structure of the WOCAT Network





In general, network members express satisfaction with the functioning of the WOCAT partnership and its ability to link national-level partners and activities with regional and international partners and processes. It is appreciated that it enables knowledge sharing on SLM at a global scale in a participatory and inclusive way. Suggestions for improvement are often linked to funding constraints of individual network members and that more efforts to mobilise resources are needed, also from new sources, such as climate change funding (e.g. GCF) and private sector funding, both to projects on-the-ground and network functions, such as documentation of technologies and network meetings. Agencies that are members of the WOCAT Consortium point out the need for further integration and mainstreaming of WOCAT tools and methods into the regular work of their organisations. Several partners are also asking for an internal WOCAT communication strategy to strengthen network communication and outreach.

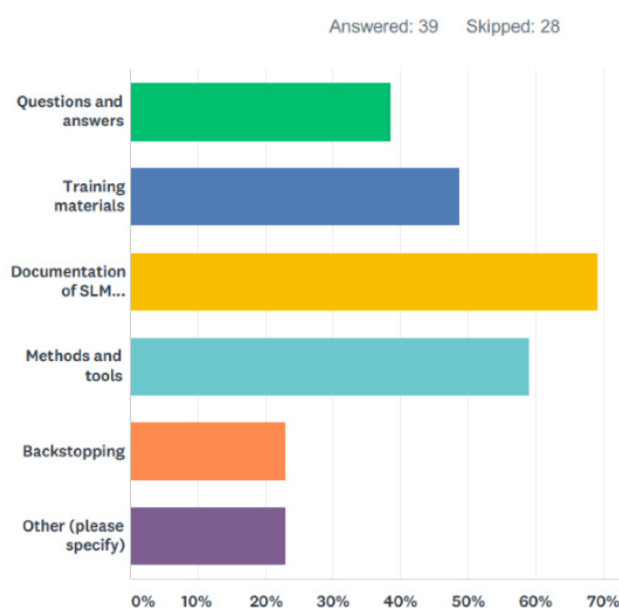
Decentralisation of some secretariat functions to regional clusters, such as HIMCAT, is proposed by many countries to put more focus on servicing countries and farmers in terms of training and capacity building. A recent development in this direction is the proposed establishment of a regional hub for Africa, AfriOCAT, with support from the NEPAD Agency based in South Africa (see recommendations from Uganda, Box 7), as well as a network for the Mediterranean region called LandMetNet. Other regional clusters exist in Central Asia (CACILM) and Latin America and the Caribbean, but funding to formalise the clusters have not been available. The field visit to Thailand for the evaluation also revealed an interest from Thailand to lead a WOCAT cluster for the ASEAN region linked to the Asian Soil Partnership and a regional Centre of Excellence for Soil Research in Asia (CESRA) (Box 6).

## 6.2 Functioning of the WOCAT Secretariat and the Consortium

SDC is the main donor to WOCAT, but it is not directly involved in implementation of activities. GIZ is both a donor and an implementing agency and provides monthly funding to the WOCAT Secretariat of between 8 000-9 000 Euro a month. ISRIC has contributed to LDN publications and reports that it is currently contributing to the development of a soil quality application (in the iSQAPER project) that is making use of WOCAT. CDE is supporting research that is using WOCAT tools and methods, while ICIMOD, CIAT and ICARDA are using WOCAT in its applied agricultural research. FAO is very active at the country level and is involved in several GEF funded projects that are using the WOCAT tools and methods on the ground. FAO's regional and country offices are also engaged in supporting countries and they are promoting WOCAT tools in programmes and projects.

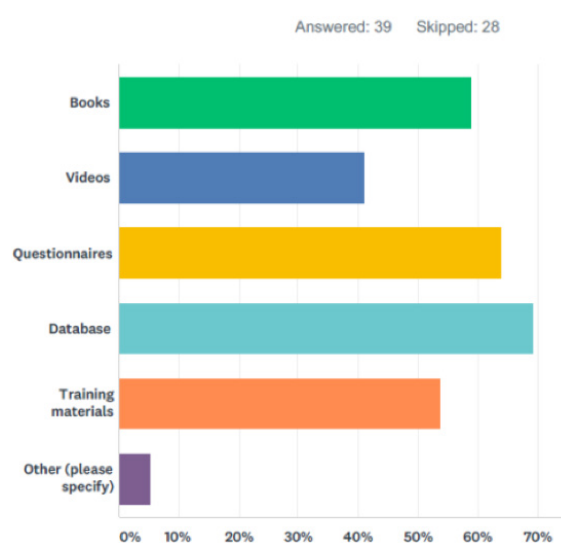
According to the questionnaire survey, the most common support and services provided by the Secretariat involve

the documentation of SLM practices, followed by methods and tools and training materials. Questions and answers services and general backstopping are also provided, while some indicated that they could not provide a clear answer (other) (Figure 6). The support and services are generally considered to be of very high quality.



**Figure 6.** Support and services provided by the WOCAT Secretariat according to the questionnaire survey.

The SLM database is the most used part of the WOCAT global knowledge platform, followed by the different questionnaires to document SLM technologies, approaches, etc. Books and training materials are also used by more than 50% of respondents (Figure 7).



**Figure 7.** The use of different parts of the WOCAT SLM global knowledge platform according to the questionnaire survey.

However, some WOCAT network members and Consortium partner are of the opinion that the WOCAT Secretariat still has a too academic focus and should pay more attention to national and local partners and be more active in following up with the Consortium. The countries point out that the WOCAT network needs a strong Secretariat that is available on a daily basis, but that it is currently lacking in human resources. CDE provides good support to the Secretariat, but other Consortium partners also need to be more proactive so that WOCAT can continue to provide basic services to network members. Several Consortium partners would like to see a strengthened Consortium with more follow-up from the WOCAT Secretariat in between Steering Committee meetings, including joint work programming. It was also suggested that some Secretariat functions could rotate among Consortium partners. GIZ would like to see the WOCAT database with improved functions, including search functions and that it is made compatible with other systems so that it more easily can be used by other relevant GIZ projects. In addition, the coordination and communication between UNCCD, WOCAT and governments need to be strengthened.

## 6.3 Financing of the WOCAT network

Since its launch in 1992 until 2011, WOCAT received a total of CHF 3.8 million in funding from SDC. Since then WOCAT has received support for a transition phase 2012-2015 with a total of CHF 1 728 000 in funding from SDC to develop an institutional architecture to mainstream WOCAT and establish it as the global knowledge management platform for SLM. From 2015-2019, WOCAT has received CHF 1 600 000 from SDC or CHF 400 000 per year. In addition, the last phase has also received considerable co-financing from the Consortium partners and through additional project funding estimated to a total of CHF 1 957 887. Nevertheless, the total funding has to be considered modest given the global scope of WOCAT knowledge services and the number of countries directly involved in WOCAT activities, making WOCAT a very cost-efficient programme.

Table 7 below provides a breakdown of the funding to WOCAT between 2016-2019. WOCAT has consistently generated high co-financing ratios with SDC contributing with between 25-45% of total funding on an annual basis. Many projects are now coming to an end, but new projects have recently been approved (see below). There also seem to be lack of core funding from several consortium partners and their contribution is mainly project based. More financial information is provided in Annex 4.



## Box 6: Thailand Impact Assessment

The lead evaluator visited Suitable Soil and Water Conservation Measure in a Tea Plantation Area in the Northern Region (QA), Angkhang Royal Agricultural Station, Mae Ngon sub-district, Fang District, Chiang Mai Province together with the Land Development Department (LDD) and the local extension service. The purpose of the approach is to develop and promote sustainable agriculture on sloping areas by establishing soil and water conservation measures, such as contour farming, multiple cropping, water harvesting and construction of bench terraces, for hilltribe farmers to produce good quality Chinese tea, and send their product to a nearby processing factory, which will create a stable and high income and improve livelihoods. 10-50% of land users in the area have adopted the technology (QT) called Continuous Bench Terrace in Highly Sloping Area for Tea Plantation. According to the local extension staff, the approach is also reducing deforestation and shifting cultivation problems in surrounding areas, as more intensive farming thanks to scaling up of WOCAT practices leads to less land expansion and encroachment on the forest



Thailand has since earlier 18 SLM practices documents in the WOCAT SLM database. 40 new practices have been documented by the FAO/GEF DS-SLM project but are not yet uploaded in the database. These new practices are selected for scaling up in four landscapes. These practices will also be published in an SLM Report on "Selected Good Practices on Sustainable Land Management in Thailand" that is under preparation. In addition, 659 people have been capacitated in using the DS-SLM tools. The LDD has also developed a mobile phone application for documentation of technologies and approaches that is now also used by Bangladesh and the Philippines.

Documented SLM technologies and approaches are scaled up using the SLM mainstreaming tool developed by the DS-SLM project, starting with assessment, selection of priority landscapes (four already selected), SLM territorial planning and development of an action plan for implementation with stakeholders. Northern Thailand is one of the selected landscapes.

A visit was also made to the LDD Office of Biotechnology and its laboratory. High quality compost is a combination of organic and inorganic materials from the agriculture sector. There are different formulas that can be used to control plant pests and diseases, and others that can be used as biofertilizers. The LDD is producing 12 different formulas with microbial activators that are designed for different soils and crops. One WOCAT technology on bio-fermentation has been documented in the new publication under development as well as one approach for transfer of bio-fermentation technology to farmers through a learning centre. At present, microbial activator products and biotechnology innovation is a key factor in the Government's efforts to promote organic agriculture and reduce agricultural chemical use by farmers and communities' volunteer 'soil doctors' - an approach that has also been documented by WOCAT (see a soil doctor's office in right-hand photo below from Chiang Mai).



Finally, a meeting was held with the office of the UNCCD Focal Point of Thailand that envisages a continued use of WOCAT in new GEF projects and programmes in GEF-7 as well as for implementing and monitoring SDG15.3 on LDN. However, there is a problem with the links between UNCCD and the WOCAT focal points at national level. It could for example be strengthened by nominating the Science and Technology Correspondent that supports the UNCCD Focal Point with science as the national WOCAT focal point. The WOCAT team in Thailand as well as the UNCCD focal point's office feel that they have a lot of SLM good practices that have been successfully scaled up in different provinces of Thailand that they could share with the ASEAN region. Thailand would like to become a centre for regional exchange on SLM and could link it to its hosting of the Asia Soil Partnership (ASP) and the Centre of Excellence for Soil Research in Asia (CESRA).

Table 7. WOCAT budget and expenditures 2016-2019\*

	Budget 2016	Co-funding / Expenditures 2016	Remarks	Budget 2017	Co-funding / Expenditures 2017	Remarks	Budget 2018	Co-funding / Expenditures 2018*	Remarks	Budget 2019	Co-funding / Expenditures 2019*	Remarks*
<b>1. Basic Network Services</b>												
SDC contribution	100 000	113 138		100 000	110 416		100 000	105 393		100 000		
<i>Generated by WOCAT Int.</i>												
CDE	30 000	30 000		30 000	30 000			30 000		30 000		
FAO-GEF DS-SLM	13 200	13 200		13 200	13 200		8 720	13 200				
GIZ	30 070	14 720	CHF 15350.31 was spent for advanced services for the website development	30 070	30 070		35 000	35 000		51 000		
IFAD large grant	50 000	51 327		51 327	51 327		251 000	50 000				
BMBF-GLUES project	9 525	0										
WB rangeland project	11 162	9 710		11 162	11 162							
DRR publication	6 280	6 280		6 280	6 280							
Carbon mitigation project (GEF-UNEP)				8 000	8 000		8 000	8 000		8 000		
ISRIC				30 000	0	in-kind only						
<b>Total Generated by WOCAT Int.</b>	<b>150 237</b>	<b>125 237</b>		<b>180 039</b>	<b>150 039</b>		<b>302 720</b>	<b>136 200</b>		<b>89 000</b>		
<b>Total</b>	<b>250 237</b>	<b>238 375</b>		<b>250 000</b>	<b>260 455</b>		<b>250 000</b>	<b>241 593</b>		<b>250 000</b>	<b>0</b>	
<b>% funded by SDC</b>	<b>40,0</b>	<b>47,5</b>		<b>40,0</b>	<b>42,4</b>		<b>40,0</b>	<b>43,6</b>		<b>40,0</b>		
<b>% generated by WOCAT Int.</b>	<b>60,0</b>	<b>52,5</b>		<b>72,0</b>	<b>57,6</b>		<b>121,1</b>	<b>56,4</b>		<b>35,6</b>		
<b>2. Advanced Network Services</b>												
			Difference			Difference			Difference			Difference
SDC contribution	200 000	257 464		-57 464	200 000	248 413	-48 413	200 000	176 609	23 391	200 000	
<i>Generated by WOCAT Int. *</i>												
FAO-GEF DS-SLM	157 700	130 576		27 124	55 100	62 000	-6 900	0	114 800	-114 800		
GIZ	259 613	240 083		19 530	25 000	20 000	5 000	36 316	36 316	0		
IFAD large grant	100 000	20 000		80 000	200 000	115 000	85 000	0	145 000	-145 000		
ISRIC	30 000	0		30 000								
UNCCD	40 000	40 000		0								
BMBF-GLUES project	61 285	61 285		0								
ISQAPER	45 500	7 345		38 155								
GEF-UNEP	47 500	20 000		27 500		97 195	60 516	36 679	0	123 000	-123 000	100 000
Fons Margarita									25 000	25 000	0	
<b>Total Generated by WOCAT Int.</b>	<b>741 598</b>	<b>519 289</b>		<b>222 309</b>	<b>280 100</b>	<b>197 000</b>	<b>83 100</b>	<b>61 316</b>	<b>444 116</b>	<b>-382 800</b>	<b>100 000</b>	<b>0</b>
<b>Total</b>	<b>941 598</b>	<b>776 753</b>	<b>164 845</b>	<b>480 100</b>	<b>445 413</b>	<b>34 687</b>	<b>261 316</b>	<b>620 725</b>		<b>300 000</b>	<b>0</b>	
<b>% funded by SDC</b>	<b>21,2</b>	<b>33,1</b>		<b>41,7</b>	<b>55,8</b>		<b>76,5</b>	<b>28,5</b>		<b>66,7</b>		
<b>% generated by WOCAT Int.</b>	<b>78,8</b>	<b>66,9</b>		<b>58,3</b>	<b>44,2</b>		<b>23,5</b>	<b>71,5</b>		<b>33,3</b>		
<b>3. Total Basic and Advanced</b>												
	<b>2016</b>			<b>2017</b>			<b>2018</b>			<b>2018</b>		
SDC contribution	300 000	370 602		300 000	300 000		300 000	282 003		300 000		
<i>Generated by WOCAT Int.</i>	891 835	644 526		460 139	347 039		364 036	580 316		189 000		
<b>Total</b>	<b>1 191 835</b>	<b>1 015 127</b>		<b>760 139</b>	<b>647 039</b>		<b>664 036</b>	<b>862 319</b>		<b>489 000</b>		
<b>% funded by SDC</b>	<b>25,2</b>	<b>36,5</b>		<b>39,5</b>	<b>46,4</b>		<b>45,2</b>	<b>32,7</b>		<b>61,3</b>		
<b>% generated by WOCAT Int.</b>	<b>74,8</b>	<b>63,5</b>		<b>60,5</b>	<b>53,6</b>		<b>54,8</b>	<b>67,3</b>		<b>38,7</b>		

\*A corrected and updated version is available on request from the WOCAT Secretariat: wocat@cde.unibe.ch

Funding to WOCAT is mobilised on a regular basis by the WOCAT team at CDE. Projects in the pipeline include the final round of two Horizon 2020 (EU research funding) submissions, one on agricultural intensification in Africa and one on water management in Europe. There are also plans to submit a Horizon 2020 proposal for the regional networks to bring science to practice call, to establish a European WOCAT network/regional cluster. A recently approved project include the CI/GEF Medium-Sized-Project (MSP) on Strengthening Land Degradation Neutrality data and decision-making through free and open access platforms with USD180,000 for WOCAT involvement. In addition, an FAO/GIZ/GEF medium-sized project (MSP) on SLM criteria and indicators for private sector investment and innovative

financing mechanisms catalysing out-scaling of good practices is in the pipeline. CDE/WOCAT has recently signed a contract with the Government of Cambodia (USD97,000) for a supporting role in the Scaling up Climate Resilient Agriculture programme that builds on the previous internal grant that WOCAT had from IFAD with a total funding of USD2 million, and the same kind of arrangement will follow for Laos. There has also been some support from GIZ (Euro 40 000) on analysis of instruments for widespread adoption of SLM through the WOCAT platform in collaboration with the Economics of Land Degradation (ELD) and a GIZ group working on scaling up instruments. CDE/WOCAT has also been involved in two in-depth case studies, one in South Africa and one in Kenya both related to the WOCAT Network.





## Box 7: Uganda Impact Assessment

Uganda is a very active WOCAT member, demonstrating how WOCAT approaches, tools and technologies are being used on the ground to support SLM upscaling with the help of an IFAD grant given to WOCAT. WOCAT SLM tools and technologies are being used by a wide range of institutions in nine districts in Uganda. Through WOCAT, 28 demonstration sites on SLM have been established, a catalogue of over 60 SLM technologies and approaches have been produced to be used by the extension services, over 360 extension officers have been trained to facilitate scaling up of SLM, and more than 300 farmers have participated in capacity building workshops in the nine districts.

Stakeholders interviewed during the evaluation field visit commended the WOCAT tools and approaches as very good and easy to work with: “The beautiful thing about this WOCAT approach is that, it is a process and addressed the problem at a particular area, the farmers are involved in the planning and it incorporated the knowledge of the farmer”. Stakeholders interviewed point out that they used to have a more sectoral approach but thanks to WOCAT, they are now working in integrated manner which helps in reaching many areas and people. Soil erosion and reduced fertility are big challenges for rural communities in Uganda, so the WOCAT intervention is a very important tool helping the government address land degradation in the country. Giving skills to extension workers to follow up is one way of sustaining the implementation. According to the National Agriculture Research Organisation (NARO), there was no thematic approach for a long time in Uganda to manage land despite land degradation having been always a big problem for the farmers. As a result, the desire for the SLM was high in the country. Historically the SLM approach in Uganda was introduced by selecting four regions which are highly affected by degradation due to sand mining, population growth, and other factors which affects the land productivity. Similarly, areas with low natural resource but highly populated were also considered, as well as areas with high numbers of livestock. Thus, the SLM project is having a high impact on the farmers through documenting and sharing best practices and through cross-learning approaches.



*Farmers visited in Gulu District, Northern Uganda (Photo C. Zazu)*

The SLM project has accelerated the development, deployment and transfer of knowledge, practice and technologies that can be used to manage and use land sustainably. Demonstration sites visited during the evaluation field trip to Gulu, a district in Northern Uganda, confirmed the impact that WOCAT is having in Uganda. The SLM approach capacitates the farmer to cope with any land degradation situations. For example, gully-erosion was one of the problems in the area, thus, capacity building on gully rehabilitation was given to the farmers, involving building of check dams, etc. The SLM project in Uganda is thus solving the critical problems of the community. One of the farmers testified that: “I have always been terrified when the rainy season comes because of the flood coming from the upstream areas but now thanks to the SLM project I have learned how to manage it and that is no more a problem for us”.



*Bee keeping in one of the farms visited (Photo J. Tukahirwa)*

Stakeholder also noted that in the beginning there was resistance from some of the farmers, but because of the visible impacts of SLM, those who refused the capacity building are in fact now requesting the support. One of the achievements of the SLM project in Uganda is increasing the productivity of the farmers through increasing soil fertility by different approaches including, composting and mulching. Another positive development in SLM in Uganda is that the participation of women is increased and they now also participate in agroforestry, aquaculture, etc., giving them more household incomes.

WOCAT has also been used in LDN target setting in Uganda. Within the context of “Avoid, reduce reverse”, interventions are identified and selected from WOCAT SLM archives to achieve neutrality. Showing their great interest in WOCAT stakeholder called for the secretariat to seriously consider the establishment of a continental WOCAT network for Africa (AfriOCAT) to reach more countries and have amplified impact and at large scale.

In the evaluation survey and through interviews, a sample of network members were asked **whether WOCAT has been effective in generating co-financing and in-kind support**. With a few exceptions, country partners generally answered no to this question, although they have contributed with their time and efforts. There seems to be limited awareness of the fact that when practitioners work for national institutions, NGOs and the private sector, their involvement in WOCAT should be considered an in-kind contribution from these institutions. International partners and donors point out that there has been support over the years from bilateral and multilateral donors in the form of different projects. However, there is room for improvement and WOCAT should increase its fund-raising capacity. Several network members also mention that more climate change funding from e.g. the GCF and other mechanisms could be mobilised to WOCAT projects that implement SLM on-the-ground. However, WOCAT does not have direct access to the GCF or the GEF and any proposal involving WOCAT would therefore need to be submitted through one of its accredited Consortium partners, such as FAO and GIZ.

The WOCAT website has a link to an interactive map with information about past and ongoing WOCAT projects and initiatives in different countries. Many projects and initiatives are included here, but no information is provided about the actual funding to the project. It is also possible to search the SLM best practices database for projects and institutions. A long list of projects is available in a drop-down menu, but information on funding is missing. The list of institutions lacks major multilateral and bilateral donors but include many universities. This makes it difficult to assess the funding going to WOCAT as well as the financial sustainability of the network and the Secretariat. But it seems to confirm the observation by a former Consortium partner representative that “funding is piecemeal, provided on a project basis, leading to a lack of long-term funding each year”.

### Chapter 6 findings and recommendations: Adequacy and efficiency of the institutional set-up, funding mechanism and funding strategy and overall functioning of WOCAT

- The WOCAT network is considered to work well as a mechanism for inclusive knowledge management, learning and exchange. However, WOCAT needs to be better mainstreamed and integrated into the work of its partners, both Consortium partners and country partners.
- The WOCAT Secretariat needs to be strengthened as well as its fund-raising capacity. Some of its functions could be distributed to Consortium partners to enable it to interact and better communicate with partners and continue to provide basic services to the network on a timely basis. Some functions of the Secretariat could also be decentralised to regional clusters.
- SDC has provided long-term support to WOCAT since its launch. Some Consortium partners are also co-funding the network. However, existing in-kind co-financing to WOCAT at national and sub-national level needs to be recognized and assessed. More funding needs to be mobilised to the network as a whole to ensure its future functioning, and a business plan and programming framework involving all consortium partners should be developed.
- WOCAT should be better mainstreamed in agencies accredited to the GCF, the Adaptation Fund, the GEF and the IKI to improve access to climate funding. This needs to be coupled with better monitoring of current funding to different parts and functions of the network in order to make projections of future funding needs.



# 7. Collaboration and synergies with other agencies/projects/programme/conventions and in particular the UNCCD

This section reviews the collaboration between WOCAT and the UNCCD, other partners and key projects and programmes.

## 7.1 Collaboration between WOCAT and the UNCCD

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. An evaluation has already been undertaken of the cooperation between WOCAT and the UNCCD Secretariat. It was commissioned by the UNCCD and published in April 2018. It concludes that the WOCAT-UNCCD Secretariat cooperation has been relevant for the UNCCD priorities as set out in the Convention and the decisions of the COP. However, until mid-2016, the efficiency of the cooperation was below expectations due to e.g. lack of a jointly designed plan of operation and no detailed plan for the budget existed nor agreement on the exact use of the resources. Nevertheless, the cooperation has so far delivered upon its tasks as stipulated in the agreement. Although the assessment of impact was not the main focus of the evaluation, there was evidence of use of the SLM best practices for planning and decision-making in country Parties to the Convention.

In the current evaluation of WOCAT, the questionnaire survey as well as semi-structured interviews included a qualitative question on: How does the SLM global knowledge platform help reporting to the UNCCD on best practices and/or LDN?

Several of the respondents of this question did not know and said that they had limited experience of this, probably because they are not directly involved with the UNCCD but are SLM practitioners from the agricultural sector. Others indicated the usefulness of the platform and that it enables much better reporting of best practices than the former UNCCD PRAIS platform did thanks to standardized tools and quality assurance. It also helps to make decisions on SLM technologies and inform implementation of SLM. However, there are also suggestions about improving its usefulness and to review the link between SLM and LDN pathways and whether appropriate target groups of LDN and UNCCD are addressed. Interestingly, the case study from South Africa (Box 5) shows that a national assessment of land degradation and SLM using WOCAT QM (mapping tool) as a basis was used as a baseline layer to determine the Land Degradation Neutrality Targets for South Africa. This approach could also help other countries to set LDN targets and South Africa has been involved in efforts to assist Madagascar in this regard. In addition, FAO has been assisting Ecuador with its LDN target setting using LADA-WOCAT tools (Box 8).

### Box 8: LDN Target Setting in Ecuador using WOCAT

A training day on LDN and its implementation was held in Loja Ecuador, under the FAO Korea SLM project, with MAE, MAG, SENAGUA and other partners including universities—some 35 participants in total. FAO presented how to use WOCAT-LADA tools to complement Trends.Earth analysis for establishing LDN targets and SLM implementation and monitoring at landscape (SLM assessment and LADA local) and provincial levels (QM). We shared the WOCAT UNCCD database, QT, QA and knowledge products and groups reviewed the draft SLM best practices fact sheets prepared under DS-SLM.

This built on the pre-CRIC training in Guyana in January 2019 on a LDN implementation strategy and process that builds on DS-SLM lessons for SLM scaling up and mainstreaming SLM best practices through inter alia i) participatory territorial/ planning/ integrated catchment management (land, water, biodiversity, climate change and integrated production systems for enhanced income and livelihoods and sustaining ecosystem services) backed up by ii) targeted policies, intersectoral process, synergy across environmental conventions, incentive measures for wider SLM adoption and finally iii) data and knowledge management and monitoring for evidence-based decision making and LDN reporting including SLM co-benefits (climate adaptation and mitigation, biodiversity food and water security etc.).

The Ecuador LDN project proposal was approved for the June work programme of GEF-7, so it will build on the DS-SLM project (see below) as well as the FAO/Korea SLM project which works closely with FAO climate smart livestock project in Loja province.

*(Information provided by Sally Bunning, FAO's Office for Latin America and the Caribbean)*

Finally, there are also opportunities to improve the collaboration between UNCCD focal points at national level and WOCAT, as highlighted by Thailand (Box 6). WOCAT should establish links with the UNCCD focal point at national level to support the SLM best practices reporting to the UNCCD and to mainstream WOCAT in policy and decision making related to SLM.

## 7.2 Collaboration between WOCAT and FAO on DS-SLM

WOCAT has been a key partner in the FAO/GEF project Decision Support for Mainstreaming and Scaling Up on Sustainable Land Management (DS-SLM) that was designed jointly by FAO and WOCAT to provide improved tools and methods for assessing the impacts of desertification, land degradation and drought and the benefits of SLM. 15 countries participated in the project with a total funding of around USD44 million of which around USD6 million came from the GEF. The project has recently had its Terminal Evaluation (TE) that was commissioned by FAO. WOCAT has contributed to the development of the project's modular decision support framework and also provided direct support to countries.

According to the TE, WOCAT's inputs to the project's conceptual development (project modules and their content), the development of training on the WOCAT tools and the knowledge component of the project have been generally highly appreciated, although some countries had expected more in terms of an interactive forum to exchange experiences and information. However, WOCAT's response was that the project's financial resources were not sufficient to allow for the introduction of a more dynamic element in the platform, such as questions and answers, moderated discussion forum, interactive blog, etc. The modular decision-support framework that WOCAT helped develop is considered to be a useful innovation that merits to be advanced also in other countries. This framework is already part of the WOCAT platform (<https://www.wocat.net/en/decision-support-slm>) and was also presented at the 19th WOCAT Global Network Meeting in May 2019. The DS-SLM modules are already shared with the entire WOCAT network and thus also contribute to WOCAT's own goal and theory of change, especially outcome 3: A recognized, jointly developed and supported harmonized Global WOCAT SLM Platform for Knowledge Management and Decision Support. The collaboration with FAO and GEF on decisions support for SLM is thus deemed to have been highly successful.

As mentioned above, WOCAT has also been successful in joining other international processes, such as the World Atlas of Desertification. More recently WOCAT is also referred to in the IPCC Special Report on Climate Change and Land, the IPBES assessment report on land degradation and restoration, and the ELD Initiative .



## Chapter 7 findings and recommendations: Collaboration and synergies with other agencies/projects/programme/conventions and in particular the UNCCD

- The efficiency of the cooperation between WOCAT and the UNCCD was initially below expectations but has now delivered upon its tasks as stipulated in the agreement. However, WOCAT needs to become more closely linked to the UNCCD Focal Points at national level to ensure mainstreaming of WOCAT in relevant ministries and agencies involved in SLM. This would facilitate both reporting on SLM best practices to the UNCCD and scaling up of SLM through integration into new projects and programmes.
- WOCAT tools and methods could be used for LDN target setting at national level and scaled up using WOCAT's and partners' tools for LDN.
- The collaboration between WOCAT and FAO on decision support for SLM has been highly successful and could serve as a model for future collaboration with Consortium partners.
- Other Consortium partners have not been as active in supporting and raising funds to support WOCAT. Opportunities to develop joint projects with WOCAT need to be identified in a business plan and programming framework coordinated by the WOCAT Secretariat. Joint projects around LDN implementation and monitoring based on WOCAT's tools, methods and SLM database could be one option.

# 8. WOCAT and the needs for the future

Over the past 25 years WOCAT has grown from being an informal network of SLM practitioners and scientists with an SLM database little known outside this circle of experts, to providing the global standard for documenting and reporting on SLM practices. Through its adoption by the UNCCD as the preferred SLM database for best practice reporting, it has also become closely linked to SLM policy and decision-making processes at international and national level. Many of the methodological and technical challenges with documenting SLM technologies and approaches have been solved over the years, although there is a continuous need to update the database, as well as its functions, to keep up with new developments in IT and emerging sustainable development challenges. As the network and database have grown, however, so have challenges related to knowledge management, communication and outreach.

WOCAT has also had problems to keep track of its uptake and integration into SLM programmes and projects from national to international level and has never developed an internal monitoring and reporting system for the partnership that can serve as a basis for assessing its impact. The impact of WOCAT has most likely been far reaching and there is remote sensing as well as field evidence of its impacts on ecosystems, livelihoods and SLM investment flows. One could say that the size and scope of the network has outgrown its structure, and the management of WOCAT needs to be reconsidered. There have been attempts in the past to establish regional clusters to improve services to countries and land users, but, except for HIMCAT that is hosted by ICIMOD, sustainability has been a problem.

Except the core support from SDC and to some extent GIZ in recent years, long-term and predictable financing of the WOCAT Secretariat and basic services to the network have been a challenge. This is a pity as WOCAT is highly appreciated by its users and has also demonstrated through the collaboration with UNCCD on documentation of SLM best practices and LDN that it has become a global standard and provides tools and methods important for achieving the 2030 development agenda, including several SDG targets related to food security, natural and social capital as well as climate change. Against this background it is time to rethink the structure of WOCAT and its business model, especially for the WOCAT Secretariat. Key issues for the future include:

- The WOCAT Secretariat needs to be strengthened with the option of developing a more decentralised structure and possibly a distributed Secretariat to ensure continued and timely services to countries. The decentralisation could be both to regional

clusters, such as HIMCAT, or for network functions where other partners have stronger expertise and capacity than CDE, such as for example updating the global SLM database and for providing knowledge management and communication services. The Secretariat also needs to engage in annual monitoring of network activities and achievements.

- Consortium partners need to be fully engaged in the restructuring of WOCAT building on their strengths and comparative advantages, and their ability to provide in-kind support to WOCAT in terms of staff time and office space. They should ensure that WOCAT is mainstreamed in their own organisations and could take on some of the functions of the WOCAT Secretariat as appropriate. Efforts to develop joint projects with WOCAT should be stepped up and a business plan and joint programming framework that includes all Consortium partners need to be developed. Consortium partners should also use their networks to bring in other relevant organisations in the WOCAT network, such as UNDP, IFAD, other CGIARs, etc. They should review and reformulate the responsibilities of the WOCAT Secretariat and define the responsibilities of Consortium Partners and Regional Clusters.
- Monitoring and reporting on WOCAT impacts should be improved across the network to enable tracking of WOCAT's long-term impact caused by behavioural change and integration into other programmes and projects leading to scaling up of SLM practices along its impact pathway and theory of change. This goes back to an early evaluation recommendation more than 20 years ago about the need for WOCAT to demonstrate its development impact.
- The WOCAT Network needs to be revitalised through strengthened outreach, advocacy and communication. More opportunities for learning and knowledge exchange between countries and regions should be generated to meet demands for learning about LDN and other emerging SLM issues.
- The collaboration with the UNCCD focal points in countries should be strengthened. WOCAT should establish stronger links with the UNCCD focal point at national level to support reporting on SLM best practices, and to ensure the mainstreaming of WOCAT tools and methods in relevant programmes and projects. WOCAT tools could also be used in LDN



target setting, implementation and monitoring of LDN, which would contribute to SDG target 15.3.

- Resources should be mobilised more systematically across the WOCAT network and new sources of funding from climate change funds (e.g. Green Climate Fund, Adaptation Fund, IKI) and the private sector need to be explored to ensure diversification and sustainability of funding. A multi-donor basket fund could be established to support the continued functioning of the WOCAT Secretariat.
- WOCAT research should provide analysis of human rights, gender and governance issues in SLM, such as women's role in decision making in SLM, access to land and water resources, land tenure, youth aspects, and disadvantaged groups. It would also be useful to develop stronger linkages to social science theories for behavioural change and governance. The WOCAT database with its extensive dataset could be used for more comprehensive SLM analysis to better serve as decision support and inform policy making, including research on barriers to scaling up of SLM, impact assessment and monitoring of land management impacts on ecosystem health and ecosystem services, to support the operationalisation of the landscape approach.

# 9. Conclusions

The WOCAT Network and global SLM knowledge base have a vital role to play for documenting and scaling up SLM at national and international level; for many countries affected by land degradation, for bilateral and multilateral donors that invest in SLM, and for meeting the targets in the multi-lateral environmental agreements, including the UNCCD, the CBD and the UNFCCC. WOCAT has thus become a global SLM flagship programme supported by several longstanding partnerships with international and national institutions and agencies. Its tools and methods for documenting and presenting SLM technologies and approaches have become the global standard and there is no other SLM knowledge platform that can rival it. Thanks to this, it has also been adopted as the global SLM best practices database for the UNCCD. It has taken more than 25 years to build up WOCAT's capital to this level and the investments in knowledge, capacity and networking needs to be maintained and further developed, as it contributes to addressing several sustainable development challenges to meet critical SDG targets, in particular 15.3 on LDN.

WOCAT has reached a turning point when it comes to maintaining its functions and securing its funding. The size and scope of the network has outgrown the current management structure as well as its core funding. There is strong evidence that the demand for SLM knowledge and tools for sharing and using knowledge is growing and urgently needed to address global environmental challenges exacerbated by climate change and population growth, and to achieve the SDGs. This is further underlined by the recently released IPCC Special Report on Climate Change and Land. A concerted and international effort is required to ensure the continuation of WOCAT and the services it provides to land users, countries, donors and the UNCCD.

## Annexes:

1. TORs of the External Review
2. Reviewed material
3. Evaluation survey questionnaire
4. Outcome harvesting from progress reporting, etc.
5. Financial information
6. Persons consulted





# Annex 1: TORs of the External Review

## Objectives:

### The objectives of the evaluation are to:

- assess the effectiveness and achieved impacts of WOCAT on the land resources and ecosystems, the project beneficiaries and target groups at the local, national and global level.
- further assess the relevance and the efficiency of WOCAT and their collaboration modalities.
- produce a clear set of concluding lessons learnt.
- make concrete and specific recommendations for:
  - actions to improve the performance to achieve better delivery of its outcomes and outputs, and
  - strengthen WOCAT's contribution in the global SLM discourse particularly considering its contribution to the achievement of targets set in the Agenda 2030 and the three UN conventions specifically UNCCD.

### Evaluation criteria and guiding questions to be used by the external evaluator(s):

1. Impacts of WOCAT on the land resources and ecosystems, the project beneficiaries and target groups at the local, national and global level.
  - a. What impacts did WOCAT achieve on the land resources and ecosystems? How does WOCAT achieve impacts on ecosystems?
  - b. What impact does WOCAT have on the ultimate beneficiaries, the land users, including women, and their livelihoods?
  - c. What impact does WOCAT have on target groups?
  - d. Is WOCAT efficient in reaching the beneficiaries and target groups?
  - e. How sustainable are these impacts and achievements? What factors fostered and hampered the development of these achievements?
2. Effectiveness of WOCAT
  - a. Is the WOCAT approach effective to achieve the overall vision and goal?
  - b. To what extent have the expected outcomes and outputs been achieved (Strategy and ProDoc)?
3. Relevance of the WOCAT program to priorities and needs in Sustainable Land Management (SLM).
  - a. Is WOCAT relevant at global, regional, national and local level?
  - b. Does WOCAT adequately address the global, regional, national and Swiss context of SLM?
  - c. Has WOCAT been embedded into on-going national and international pro-grams and projects addressing diverse global and national issues e.g. food security, disaster risk reduction, climate change mitigation, climate change adaptation?
4. Adequacy and efficiency of the institutional set-up, funding mechanism and funding strategy and overall functioning of WOCAT.
  - a. Is the institutional set-up, the funding mechanism and the funding strategy adequate for achieving the overall goal?
  - b. How cost-efficient is WOCAT? Is WOCAT financially sustainable?
  - c. Is there a need to adapt the funding mechanism if SDC stops its support?
  - d. Is WOCAT functioning efficiently?
  - e. What sense of ownership do partners such as Consortium Partners, countries or institutional partners have for WOCAT, and what incentives do they see being provided from the WOCAT Network and its products?
  - f. How is the collaboration between WOCAT and the Consortium Partners? How are synergies being used and are there strategic alliances? How do Consortium Partners contribute to WOCAT, its program and activities, and how do they support the uptake and integration of WOCAT methods and tools in SLM related programs and activities at their agency? How do they advocate and promote WOCAT, and support additional funding to WOCAT and the creation of a donor alliance?
5. Collaboration and using synergies with other agencies/projects/programs /conventions and in particular the UNCCD.
  - a. How is the collaboration between WOCAT and other agencies/projects/ pro-grams/conventions and in particular with UNCCD? How are synergies being used and what strategic alliances are there?

- b. What is their cooperation with WOCAT, its program and activities? How do they support the uptake and integration of WOCAT methods and tools in their field of activity related to SLM? How do they promote and support WOCAT.
  - c. Does WOCAT support and add value to the global conventions esp. UNCCD in reaching out to the countries for better implementation?
6. WOCAT and the needs for the future.
- a. How has the role of WOCAT evolved over the last years. What is the projected need for a continued or new role of WOCAT, its tools, products and supporting function?
  - b. What can be absorbed by partners (Consortium Partners and WOCAT Network), what is needed for the continued coordination and harmonization of efforts at the global level



# Annex 2: Reviewed Material

## Project document and strategy

- Project Documentation (ProDoc) for WOCAT: Global Sustainable Land Management Platform for Knowledge Management and Decision Support. Project number 7F-05918.02.01 (Contract number 81019848).
- Kreditantrag No. 7F-05918.02.
- WOCAT International. Strategy 2015-2018.

## Project financial and progress reports

- January 2012-March 2015: WOCAT Review of the transition/consolidation period
- December 2015-June 2019: six-monthly project/financial reports.

## External review reports

- Stocking, M., Pozzi, A., 1998: WOCAT External Review 1998. 39 pp.
- Schaffner, R., Guenat, D., 2007: External Review: NRE Mandates to CDE. 41 pp.
- Kellner, K., Risolo, C. & Metz, M., 2011: Terminal Evaluation of the UNEP/FAO GEF Project 'Land Degradation Assessment in Drylands (LADA)'. UNEP Evaluation Office, May 2011. 38 pp.
- Tengberg, A., 2011: WOCAT External Review 2011, SDC., 57 pp.

## WOCAT knowledge products

<https://www.wocat.net/en/knowledge-base.html>

## WOCAT tools and methods

<https://www.wocat.net/en/methods.html>

- Tools for local/field level
  - WOCAT inventory sheets for SLM Technologies and Approaches
  - WOCAT questionnaires on SLM Technologies and Approaches
  - WOCAT climate change module
  - Carbon benefit tool
  - DESIRE and IFAD guidelines for participatory stakeholder workshops
  - WOCAT instructional video user manual
- Tools for national/subnational level
  - WOCAT watershed module
  - LADA-WOCAT Mapping of LD and SLM (QM)

## For both levels:

FAO-WOCAT decision support framework for scaling up SLM

**Global SLM database** documenting and displaying SLM Technologies, SLM Approaches and SLM Mapping including case studies and maps from over 50 countries <https://qcat.wocat.net/en/wocat/>

## WOCAT website

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

## WOCATpedia

<https://www.wocat.net/en/slm/wocat-knowledge-products/wocatpedia>

## WOCAT publications:

### Books

**Sustainable rangeland management in Sub-Saharan Africa – Guidelines to good practice** Liniger, HP. and Mekdaschi Studer, R. 2019. TerrAfrica; World Bank, Washington D.C.; World Overview of Conservation Approaches and Technologies (WOCAT); World Bank Group (WBG), Washington DC, USA and Centre for Development and Environment (CDE), University of Bern, Switzerland.

### **Where people and their land are safer - A Compendium of Good Practices in Disaster Risk Reduction**

Harari, N., Gavilano, A. and Liniger, HP. 2017. where people and their land are safer: A Compendium of Good Practices in Disaster Risk Reduction. Bern and Lucerne, Switzerland: Centre for Development and Environment (CDE), University of Bern, and Swiss NGO Disaster Risk Reduction (DRR) Platform, with Bern Open Publishing <https://www.wocat.net/library/media/122/>

### **Making sense of research for sustainable land management**

Liniger, HP., Mekdaschi Studer, R., Moll, P., Zander, U. 2017. Making sense of research for sustainable land management. Centre for Development and Environment (CDE), University of Bern, Switzerland and Helmholtz-Centre for Environmental Research GmbH – UFZ, Leipzig, Germany. [https://www.wocat.net/fileadmin/user\\_upload/WOCAT\\_Glues\\_low\\_version.pdf](https://www.wocat.net/fileadmin/user_upload/WOCAT_Glues_low_version.pdf)

### **Water Harvesting – Guidelines to Good Practice**

Mekdaschi Studer, R. and Liniger, H. 2013. Water Harvesting: Guidelines to Good Practice. Centre for Development and Environment (CDE), Bern; Rainwater Harvesting Implementation Network (RAIN), Amsterdam; MetaMeta, Wageningen; The International Fund for Agricultural Development (IFAD), Rome. [https://www.wocat.net/fileadmin/user\\_upload/documents/Books/WaterHarvesting\\_lowresolution.pdf](https://www.wocat.net/fileadmin/user_upload/documents/Books/WaterHarvesting_lowresolution.pdf)

### **Desire for Greener Land - Options for Sustainable Land Management in Drylands**

Schwilch, G., Hessel, R. and Verzandvoort, S. (Eds). 2012. Desire for Greener Land: Options for Sustainable Land Management in Drylands. Bern, Switzerland, and Wageningen, The Netherlands: University of Bern - CDE, Alterra - Wageningen UR, ISRIC - World Soil Information and CTA - Technical Centre for Agricultural and Rural Cooperation. [https://www.wocat.net/fileadmin/user\\_upload/documents/Books/DESIRE\\_BOOK\\_low\\_resolution.pdf](https://www.wocat.net/fileadmin/user_upload/documents/Books/DESIRE_BOOK_low_resolution.pdf)

### **Sustainable Land Management in Practice – Guidelines and best Practices for Sub-Saharan Africa**

Liniger, H.P., R. Mekdaschi Studer, C. Hauert and M. Gurtner. 2011. Sustainable Land Management in Practice: Guidelines and best Practices for Sub-Saharan Africa. TerrAfrica, World Overview of Conservation Approaches and Technologies (WOCAT) and Food and Agriculture Organization of the United Nations (FAO) [https://www.wocat.net/fileadmin/user\\_upload/documents/Books/SLM\\_in\\_Practice\\_E\\_Final\\_low.pdf](https://www.wocat.net/fileadmin/user_upload/documents/Books/SLM_in_Practice_E_Final_low.pdf)

### **National Books & Factsheets**

<https://www.wocat.net/en/slm/wocat-knowledge-products/wocat-national-books-and-factsheets>

### Articles

Schneider, Flurina, Giger, Markus, Harari, Nicole, Moser, Stephanie, Oberlack, Christoph, Providoli, Isabelle, Schmidt, Leonie, Tribaldos, Theresa, and Zimmerman, Anne (2019). Transdisciplinary co-production of knowledge and sustainability transformations: Three generic mechanisms for impact generation. *Environmental Science and Policy* 102, pp. 26-35. Elsevier. <https://doi.org/10.1016/j.envsci.2019.08.017>

Liniger, Hanspeter; Harari, Nicole; van Lynden, Godert; Fleiner, Renate; de Leeuw, Jan; Bai, Zhanguo; Critchley, William (2019). Achieving land degradation neutrality: The role of SLM knowledge in evidence-based decision-making. *Environmental Science and Policy* 94, pp. 123-134. Elsevier. <https://www.sciencedirect.com/science/article/pii/S1462901118306403>

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Garcia, Cesar Luis; Teich, Ingrid; Gonzalez-Roglich, Mariano; Kindgard, Adolfo Federico; Ravelo, Andres Carlos; Liniger, Hanspeter (2019). Land degradation assessment in the Argentinean Puna: Comparing expert knowledge with satellite-derived information. *Environmental Science and Policy* 91, pp. 70-80. Elsevier. <https://www.sciencedirect.com/science/article/pii/S1462901118306397>

Costantini, Edoardo A. C.; Branquinho, Cristina; Nunes, Alice; Schwilch, Gudrun; Stavi, Ilan; Valdecantos, Alejandro; Zucca, Claudio (2016). Soil indicators to assess the effectiveness of restoration strategies in dryland ecosystems. *Solid Earth*, 7(2), pp. 397-414. Copernicus Publications <http://www.solid-earth.net/7/397/2016/>  
 Panagea, I. S.; Daliakopoulos, I. N.; Tsanis, I. K.; Schwilch, Gudrun (2016). Evaluation of promising technologies for soil salinity amelioration in Timpaki (Crete): A participatory approach. *Solid Earth*, 7(1), pp. 177-190. Copernicus Publications <http://www.solid-earth.net/7/177/2016/>  
 Mekdaschi, Rima; Providoli, Isabelle; Liniger, Hanspeter (2016). Sharing knowledge to spread sustainable land management. In: Chabay, Ilan; Frick, Martin; Helgeson, Jennifer (eds.) *Land restoration: Reclaiming landscapes for a sustainable future* (pp. 543-545). Cambridge, USA: Academic Press <http://boris.unibe.ch/79744/>  
 Giger, Markus; Liniger, Hanspeter; Sauter, Caspar; Schwilch, Gudrun (2015). Economic benefits and costs of Sustainable Land Management Technologies: An analysis of WOCAT's global data. *Land degradation & development*, n/a-n/a. John Wiley & Sons, Ltd. <http://onlinelibrary.wiley.com/doi/10.1002/ldr.2429/abstract>  
 Schwilch, Gudrun; Liniger, Hanspeter; Hurni, Hans (2014). Sustainable Land Management (SLM) Practices in Drylands: How Do They Address Desertification Threats? *Environmental management*, 54(5), pp. 983-1004. Springer <http://link.springer.com/article/10.1007%2Fsoo267-013-0071-3>  
 More articles at [https://www.wocat.net/en/wocat-media-library?page=&search=paper&-media\\_type=&languages=&year\\_\\_gte=&year\\_\\_lte=&continent=&countries=](https://www.wocat.net/en/wocat-media-library?page=&search=paper&-media_type=&languages=&year__gte=&year__lte=&continent=&countries=)

## Theses

[https://www.wocat.net/en/knowledge-base/documentation-analysis/theses.html?no\\_cache=1&category=6](https://www.wocat.net/en/knowledge-base/documentation-analysis/theses.html?no_cache=1&category=6)

Workshop proceedings

<https://www.wocat.net/en/knowledge-base/documentation-analysis/workshop-proceedings.html?category=10>

Videos on Sustainable Land Management

<https://www.wocat.net/en/knowledge-base/slm-videos.html>

## Other relevant publications

Bastidas Fegan, S. 2019. The Sustainable Land Management Mainstreaming Tool. FAO. 44 pp.

Cherlet, M., Hutchinson, C., Reynolds, J., Hill, J., Sommer, S., von Maltitz, G. (Eds.), 2018. *World Atlas of Desertification*, Publication Office of the European Union, Luxembourg, 2018.

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IPCC, 2019. *Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems (SRCCL)*.

Piemontese, L., Giulio Castelli, G., Fetzer, I. Barron, J., Liniger, HP., Harari, N., Gordon, L., Rockström, J., Bresci, E. and Jaramillo, F. 2019. Mapping the global potential of water harvesting to increase crop production from successful case studies (in press).

Petri, M., Biancalani, R. and Lindeque, I. 2019. Guidelines for the national assessment

and mapping of land degradation and conservation. Rome, FAO. 52 pp.

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Tengberg, A., Radstake, B., Zhang, K., & Dunn, B., 2016. Scaling up of Sustainable Land Management in the Western People's Republic of China: Evaluation of a 10-year Partnership. *Land Degradation & Development*, 27: 134–144 (2016).

Wilson-Grau, R. Outcome Harvesting. Principles, Steps and Evaluation Application. Information Age Publishing, Charlotte, NC, 233 pp.



# Annex 3: Evaluation Survey Questionnaire

## World Overview of Conservation Approaches and Technologies

### Interview questionnaire for Survey Monkey and semi-structured interviews

The survey is designed to assess how WOCAT has contributed to behavioural change among WOCAT network members and boundary partners, and thereby impacted land resources and livelihoods.

The overall objectives of the 2019 evaluation are to:

1. Assess the effectiveness and achieved impacts of WOCAT on the land resources and ecosystems, the project beneficiaries and target groups at the local, national and global level.
2. Further assess the relevance and the efficiency of WOCAT and its collaboration modalities.
3. Produce a clear set of concluding lessons learnt.
4. Make concrete and specific recommendations for:
  - a) Actions to improve the performance to achieve better delivery of its outcomes and outputs, and
  - b) Strengthen WOCAT's contribution in the global SLM discourse particularly considering its contribution to the achievement of targets set in the Agenda 2030 and the three UN conventions specifically UNCCD.

Your contribution to the evaluation is highly appreciated.

#### 1. Date of completing the questionnaire

Date / Time

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#### 2. Contact information

Name

---

Organization

---

Country

---

Email Address

---

Phone Number

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**3. Please describe the nature of your involvement in WOCAT.**

- Involvement in the documentation of Sustainable Land Management (SLM) practices
- Learning about SLM from the database: for a country/ region or for specific problems, natural and human conditions
- Use of the WOCAT database as source of information for selection of SLM practices
- Using the WOCAT books and documentation for learning
- Using the WOCAT tools, methods and books for teaching and training
- being involved in WOCAT related projects
- implementation of SLM projects using WOCAT knowledge
- planning of projects and/or implementation of activities
- revising and/or developing policies related to SLM
- Supporting global/international initiatives related to SLM and/or land degradation
- Other (please specify)

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**4. Mainstreaming of WOCAT**

How long have you been involved in WOCAT?

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Have you actively promoted the use and mainstreaming of WOCAT in your country/ organization/ other projects?

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When did you do that and where?

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Why is it important to promote the use of WOCAT?

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How did your intervention influence the mainstreaming and uptake of WOCAT? What did you do and is there any concrete evidence (e.g. action plans, policy documents, minutes from meetings)

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**5. Impacts on land resources and ecosystems**

When and where has WOCAT contributed to improving land resources and ecosystems on the ground?

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Who took the lead (Land users themselves, Extension staff, Private sector, Others)?

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What was done using WOCAT to improve land resources and ecosystems (e.g. support to implementation of SLM technologies or approaches, planning, project formulation and implementation, policy development)?

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How are land resources and ecosystems improved using WOCAT and how sustainable are these improvements?

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**6. Impacts on local land users**





When and where has WOCAT contributed to improving livelihoods of local land users?

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Who took the lead (land users themselves, extension staff, private sector, others)?

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**7. What was done using WOCAT to improve livelihoods?**

- Training and capacity building of land users themselves
- Training and capacity building of women
- Training of extension and project staff supporting implementation with land users
- Selection of attractive SLM practices to implement
- Provision of support from projects to implementation
- Other (please specify)

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**8. How were local livelihoods improved by WOCAT and how sustainable are these improvements?**

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**9. Are there examples where women and other disadvantaged groups have benefited and/or been targeted by WOCAT?**

**10. Impacts on SLM capacities**

When and where has WOCAT contributed to strengthened SLM capacities?

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Who took the lead (land users themselves, extension staff, private sector, others)?

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What was done using WOCAT to build capacity in SLM and how where SLM capacities strengthened?

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Are there examples where women and other disadvantaged groups have benefited and/or been targeted by capacity building involving WOCAT?

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**11. Relevance of WOCAT to sustainable development and Agenda 2030**

Has WOCAT adequately addressed current priorities and needs in SLM? How has this been done and at what level (Local/ landscape/ watershed, national, International/ global level)?

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When and where has WOCAT contributed to reporting on SDGs?

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**12. Which SDG targets have you reported on using WOCAT?**

- 2.4: sustainable food production systems and resilient agricultural practices
- 5.a: give women equal rights to economic resources, as well as access to and ownership of land and other forms of property...
- 6.5: implement integrated water resources management
- 6.6 protect and restore water-related ecosystems
- 11.a: protect and safeguard the world's cultural and natural heritage
- 13.1: strengthen resilience and adaptive capacity to climate-related hazards and natural disasters
- 13.3: ...human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
- 14.2: sustainably manage and protect marine and coastal ecosystems
- 15.1: conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services
- 15.3: combat desertification, restore degraded land and soil...and strive to achieve a land degradation neutral world
- 17.6: enhance north-south, south-south....cooperation on access to science, technology and innovation and enhance knowledge sharing..
- Other (please specify)

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**13. Partnerships**

What is your view of WOCAT's approach to partnerships, including with international and regional organizations

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Do you see ways in which it could be improved and in that case how?

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**14. To what extent has the WOCAT Secretariat provided services and support for your SLM-related activities?**

- Questions and answers
- Training materials
- Documentation of SLM practices
- Methods and tools
- Backstopping
- Other (please specify)

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**15. Financing and institutional set-up**

Has WOCAT been effective in generating co-financing and in-kind support? If yes, from where , when and how much?

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What is the new financing used for?

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What is your opinion about the adequacy and effectiveness and overall functioning of WOCAT and its institutional set-up?

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Do you see any new opportunities for funding of WOCAT? If yes, explain.

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**16. Which parts of the WOCAT SLM Global Knowledge Platform do you use?**

- Books
- Videos
- Questionnaires
- Database



- Training materials
- Other (please specify)

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**17. How does the SLM Global Knowledge Platform help reporting to the UNCCD on best practices and/or LDN?**

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**18. Do you have any final comments about the weaknesses and/or strengths of WOCAT and opportunities for the future?**

# Annex 4: Outcome harvesting 2012-2019

**Table 2.** WOCAT Outcome Harvesting 2012-2019.

Outcome	Significance of the outcomes	Contribution	Sources
<b>OH Outcome:</b> <i>WOCAT methods and tools are used by countries and other boundary partners to document SLM knowledge</i>	An increasing number of countries and institutions are using WOCAT tools and methods. WOCAT is thus becoming the global standard for reporting on SLM, including for the UNCCD	<p>More than 30 countries are using the WOCAT methods and tools</p> <p>Institutional members using WOCAT methods &amp; tools include GIZ that is linking WOCAT to Agriwaterpedia and the online K-link tool</p> <p>207 new WOCAT members registered</p> <p>The UNCCD parties have been informed by the UNCCD on the launch of the global WOCAT database on SLM</p> <p>49 technologies, 20 approaches were newly entered by users in the database</p> <p>The global SLM database counted 1208 published SLM practices, 43 SLM approaches and 453 PRAIS practices from 121 countries and 236 users</p> <p>Learning materials...disseminated to UNCCD focal points through UNCCD Secretariat</p> <p>CIAT adapted the API to the requirements of WOCAT; 78 new SLM technologies were added and 11 new approaches</p>	<p>WOCAT Review 2012-March 2015 WOCAT Review 2012-March 2015</p> <p>Financial report 01.12.2015-30.06.2016</p> <p>Financial report 01.07.16-31.12.16</p> <p>Financial report 01.07.16-31.12.16</p> <p>Financial report 01.01.17-30.06.17</p> <p>Financial report 01.07.17-31.12.17</p> <p>Financial report 01.01.18-30.06.18</p>
<b>OH Outcome:</b> <i>Engaged institutions and other boundary partners adopt and mainstream SLM to tackle global challenges</i>	WOCAT methods and tools are being mainstreamed in big donor programmes and projects to tackle global challenges, such as LDN	<p>WOCAT International Framework Agreement (FA) developed and signed by 9 Consortium Partners</p> <p>Methods and tools mainstreamed in CACILM (Central Asia), ICIMOD, FAO, RNE, FAO LAC, Buthan, Bangladesh, China, Nepal, Senegal, South Africa, Tunisia, etc., underway in UNCCD SLM BP reporting, and FAO-GEF project on DSS and SLM, GIZ, ICARDA, etc.</p> <p>2 new MoUs with institutional partners signed</p> <p>GIZ promoted products in their projects where appropriate and products were downloaded from the WOCAT website</p> <p>UNDP GEF 5 Project (South Africa) adapted the WOCAT QM</p> <p>Jointly with ISRIC, Both Ends, CI and Argentina, WOCAT developed 4 papers on relevance of SLM to LDN</p>	<p>WOCAT Review 2012-March 2015</p> <p>WOCAT Review 2012-March 2015</p> <p>Interviews with GEFSEC, FAO and GIZ</p> <p>Financial report 01.12.2015-30.06.2016</p> <p>Financial report 01.01.17-30.06.17</p> <p>Field visit to South Africa Financial report 01.01.18-30.06.18</p>



<p><b>OH Outcome:</b>  <i>The Global WOCAT SLM platform is used as decision support for policy making, investments and scaling out of SLM</i></p>	<p>The global WOCAT SLM platform and WOCATpedia are used extensively by a large number of countries. However, the link to decision making is not clear.</p>	<p>More than 660 new users</p> <p>Products downloaded from website</p> <p>104 new likes on Facebook, in total 736 likes; 10,646 visitors visited the WOCAT website</p> <p>Collaboration with UNCCD on SKBP</p> <p>249 new WOCAT members registered, 3 new MoUs with institutional partners</p> <p>82 new likes on Facebook in total 819 likes; 10,496 visitors to the WOCAT website</p> <p>920 likes of WOCAT on Facebook, 11,365 visitors from 154 countries on the global database since its launch</p> <p>MoU with Uganda was signed</p> <p>8,170 visits of the WOCAT website, 18,426 visits of WOCATpedia and 10,237 visits of global SLM database</p> <p>A new manual for the GEF project ENALULDEP/ SLM was developed by Mr Jalal Uddin from BANCAT; new factsheets on SLM from NEPCAT and one from Myanmar compiled with the support of ICIMOD; LMD calendars produced by the Uganda Landcare Network, the Royal University of Cambodia and the National Agriculture and Forestry Research Institute, Laos</p> <p>11,125 visits of the WOCAT website from total 167 countries; 21,212 visits of WOCATpedia from total of 185 countries, 13,004 visits of the Global SLM Database from total 166 countries.</p>	<p>WOCAT Review 2012-March 2015                  Financial report                  01.12.2015-30.06.2016                  Financial report                  01.12.2015-30.06.2016</p> <p>Financial report                  01.12.2015-30.06.2016                  Financial report 01.07.16-31.12.16</p> <p>Financial report 01.07.16-31.12.16</p> <p>Financial report 01.01.17-30.06.17</p> <p>Financial report 01.01.17-30.06.17                  Financial report 01.01.17-30.06.17</p> <p>Financial report 01.01.18-30.06.18</p> <p>Financial report 01.01.18-30.06.18</p>
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# Annex 5: WOCAT Financial Overview\*

Contribution from SDC	Total Budget 2016-2019	Yearly Budget 2016	Expenditures 1.12.15-31.12.16	Balance as per 31.12.16	Yearly Budget 2017	Expenditures 1.1.17-31.12.17	Balance as per 31.12.17	Yearly Budget 2018	Revised Yearly Budget 2018	Expenditures 1.1.18-31.12.18	Balance as per 31.12.18	Yearly Budget 2019	Revised Yearly Budget 2019	Expenditures 1.1.19-30.6.19*	Balance as per 30.6.19*
<b>1. Basic Network Services (W1/W4)</b>															
Personnel costs	277.000,00	75.000,00	93.500,44	-18.500,44	66.000,00	76.961,08	-29.461,52	70.000,00	63.446,00	84.879,21	-21.433,21	66.000,00	44.566,79	39.760,89	4.805,90
Travel	65.000,00	10.000,00	5.818,18	4.181,82	20.000,00	6.262,28	17.919,54	15.000,00	5.000,00	666,25	4.333,75	20.000,00	24.333,75	15.484,06	8.849,69
Mandates	40.000,00	10.000,00	5.184,34	4.815,66	10.000,00	16.425,10	-1.609,44	10.000,00	10.000,00	3.154,99	6.845,01	10.000,00	16.845,01	12.191,38	4.653,63
Material	18.000,00	5.000,00	900,72	4.099,28	4.000,00	10.767,53	-2.668,25	5.000,00	5.000,00	138,66	4.861,34	4.000,00	8.861,34	653,75	8.207,59
Cost overrun phase 7 (50%)			7.734,50	-7.734,50	0,00		-7.734,50								
External funding use			7.000,00				7.000,00								
<b>Total</b>	<b>400.000,00</b>	<b>100.000,00</b>	<b>113.138,18</b>	<b>-6.138,18</b>	<b>100.000,00</b>	<b>110.415,99</b>	<b>-16.554,17</b>	<b>100.000,00</b>	<b>83.446,00</b>	<b>88.839,11</b>	<b>-5.393,11</b>	<b>100.000,00</b>	<b>94.606,89</b>	<b>68.090,08</b>	<b>26.516,81</b>
<b>2. Advanced Network Services (W2)</b>															
Personnel costs	637.500,00	185.500,00	165.860,80	19.639,20	174.500,00	212.170,37	-18.031,17	177.500,00	71.624,00	65.160,50	6.463,50	100.000,00	106.463,50	25.243,65	81.219,85
Travel	34.000,00	2.000,00	6.618,93	-4.618,93	14.000,00	0,00	9.381,07	18.000,00	18.000,00	3.006,20	14.993,80	0,00	14.993,80	1.140,70	13.853,10
Mandates	7.500,00	2.500,00	77.279,42	-74.779,42	5.000,00	34.345,54	-104.124,96	0,00	0,00	2.381,24	-2.381,24	0,00	-2.381,24	376,70	-2.757,94
Material	21.000,00	10.000,00	-30,10	10.030,10	6.500,00	1.896,90	14.633,20	4.500,00	4.500,00	185,45	4.314,55	0,00	4.314,55	55,95	4.258,60
Cost overrun phase 7 (50%)			7.734,50	-7.734,50	0,00		-7.734,50								
Budget adaptation I			36.000,00				36.000,00								
WOCAT evaluation	100.000,00											100.000,00	100.000,00	0,00	100.000,00
<b>Total</b>	<b>800.000,00</b>	<b>200.000,00</b>	<b>257.463,55</b>	<b>-21.463,55</b>	<b>200.000,00</b>	<b>248.412,81</b>	<b>-69.876,36</b>	<b>200.000,00</b>	<b>94.124,00</b>	<b>70.733,39</b>	<b>23.390,61</b>	<b>200.000,00</b>	<b>223.390,61</b>	<b>26.817,00</b>	<b>196.573,61</b>
<b>3. Thematic Product (W3)</b>															
Personnel costs	286.000,00	70.000,00	3.863,00	66.137,00	68.000,00	38.316,95	95.820,05	73.000,00	73.000,00	37.191,60	131.828,45	75.000,00	206.828,45	56.037,30	150.791,15
Travel	75.000,00	20.000,00	188,00	19.812,00	20.000,00	14.669,83	25.151,17	20.000,00	20.000,00	3.715,00	41.436,17	15.000,00	56.436,17	1.470,20	54.965,97
Mandates	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	10.000,00	-10.000,00
Material	39.000,00	10.000,00	3.111,45	6.888,55	12.000,00	16.406,33	2.482,22	7.000,00	7.000,00	1.382,55	8.099,67	10.000,00	18.099,67	0,00	18.099,67
<b>Total</b>	<b>400.000,00</b>	<b>100.000,00</b>	<b>7.162,45</b>	<b>92.837,55</b>	<b>100.000,00</b>	<b>69.384,11</b>	<b>123.453,44</b>	<b>100.000,00</b>	<b>100.000,00</b>	<b>42.289,15</b>	<b>181.164,29</b>	<b>100.000,00</b>	<b>281.164,29</b>	<b>67.507,50</b>	<b>213.656,79</b>
<b>Grand total</b>	<b>1.600.000,00</b>	<b>400.000,00</b>	<b>377.764,18</b>	<b>65.235,82</b>	<b>400.000,00</b>	<b>428.212,91</b>	<b>37.022,91</b>	<b>400.000,00</b>	<b>277.570,00</b>	<b>201.861,65</b>	<b>199.161,79</b>	<b>400.000,00</b>	<b>599.161,79</b>	<b>162.414,58</b>	<b>436.747,21</b>

\*An updated version is available on request from the WOCAT Secretariat: [wocat@cde.unibe.ch](mailto:wocat@cde.unibe.ch)



# Annex 6: Persons Consulted

(At global network meeting, through Skype interviews, questionnaire survey and field visits to Ethiopia, South Africa, Thailand and Uganda)

	Name	First Name	Organisation	Country
1	Abalo	Ketty	Extension Officer, Gulu	Uganda
2	Adoch	Betty	Gulu University student	Uganda
3	Amale	Balla Sunday	Uganda Landcare Network	Uganda
4	Anony	Eunice	PRELNOR, Gulu	Uganda
5	Amono	Filda	Secretary Young Farmers Group, Gulu	Uganda
6	Andreeva/ Sukhoveeva	Olga	Institute of Geography of RAS, Moscow Lomonosov State University	Russian Federation
7	Aouddou	Said Ouali	FAO	Morocco
8	Arevalo	Luz Marina	Upra	Colombia
9	Apel	Ulrich	Land Degradation Coordinator, GEFSEC	USA
10	Badabate	Diwediga	Independent consultant	Togo/Nigeria
11	Bedasa Eba	Eba	ILRI	Ethiopia
12	Bekalu	Bitew	Bahir Dar Policy College	Ethiopia
13	Belayneh Adugna	Belayneh	GIZ-SURED	Ethiopia
14	Ben Zaied	Mongi	Arid Region Institute-Tunisia	Tunisia
15	Bhuchar	Sanjeev	International Centre for Integrated Mountain Development (ICIMOD)	Nepal
16	Biancalani	Riccardo	FAO	Italy
17	Biratu Wondie	Tadesse	BGRS BOA&NR	Ethiopia
18	Blank	Christina	SDC	Switzerland
19	Bouahom	Bounthanom	National Agriculture and Forestry Research Institute	Laos
20	Bunning	Sally	FAO LAC	Chile
21	César Luis	Garcia	CONICET	Argentina
22	Chamesh	Tharinda	Hayleys Agriculture	Sri Lanka
23	Chantri	Narati	Extension Officer, Royal Project	Thailand
24	Chikirni Malika	Morocco	FAO	Morocco
25	Dawit	Dawit	Swiss Church Aid	Ethiopia
26	Dhakal	Madhav Prasad	ICIMOD	Nepal
27	Dhavu	Khumbulani	ARC	South Africa
28	de Lange	Peter	SLMP	Ethiopia
29	de la Rosa	Rosalud	FAO DS-SLM	Thailand
30	Dileep	Kumar Karna	SMOPL	Nepal
31	Easter	Mark	Natural Resource Ecology Lab, Colorado State University	United States
32	Ehrensperger	Albrecht	University of Bern	Switzerland
33	Enideg Diress	Enideg	Amhara Region Bureau of Agriculture	Ethiopia
34	Fleiner	Renate	University of Bern / CDE	Switzerland

35	Fleskens	Luuk	Wageningen UR	Netherlands
36	Gebreegziabher	Tewodros	GIZ	Ethiopia
37	Girma	Gebrehawariat	Private	Ethiopia
38	Girvetz	Evan	CIAT	Kenya
39	Gizaw Desta Gessesse	Gizaw Desta	Water and Land Resource Center	Ethiopia
40	Glavan	Matjaz	University of Ljubljana	Slovenia
41	Hailu	Habtamu	Ministry of Agriculture, Ethiopia	Ethiopia
42	Harari	Nicole	University of Bern / CDE	Switzerland
43	Hofer	Thomas	FAO's Regional Cente, Bangkok	Thailand
44	Issa	Aliga	NTV Media	Uganda
45	Jalal Uddin Md Shoaib	Jalal	Establishing National land Use and Land Degradation profile toward Mainstreaming SLM practices in Sector policies project	Bangladesh
46	Jeravongpanieh	Boonsuthee	Royal Forestry Department	Thailand
47	Jere	Zwide Dexter	Total LandCare	Malawi
48	Kagumicha	Rick	LandCare Network	Uganda
49	Khasankhanova	Gulchekhra	Design and Research UZGIP Institute	Uzbekistan
50	Jintarithdth	Bunjirtluk	Land Development Department (LDD)	Thailand
51	Kowalewski	Eric	GIZ	Germany
52	Kristensen	Sergio	Swiss Church Aid -HEKS/EPER	Ethiopia
53	Lindeque	Lehman	UNDP	South Africa
54	Liniger	Hanspeter	University of Bern	Switzerland
55	Lunderstedt	Kyra	UNDP	South Africa
56	Markovic	Mihajlo	University of Banja Luka, Faculty of Agriculture	Bosnia and Herzegovina
57	Md. Fazlay Arafat	Arafat	FAO Bangladesh	Bangladesh
58	Md. Shoaib	Jalal Uddin	Self employed	Bangladesh
59	Mekdaschi Studer	Rima	CDE/WOCAT	Switzerland
60	Melaku Tadesse Gebresellasi	Melaku	German Development Cooperation (GDC)	Ethiopia
61	Meng	Lingqin	Songliao Water Resources Commission	China
62	Mohammed Haji Alula	Mohammed	Oromia Bureau of Agriculture & Natural Resources	Ethiopia
63	Morugán-Coronado	Alicia	Miguel Hernandez University	Spain
64	Mutema,	Macdex	ARC	South Africa
65	Mwaka	ABLE	Bee keeper, Omoro	Uganda
66	Mwenge Kahinda	Jean-Marc	CSIR	South Africa
67	Navin	Chea	Royal University of Agriculture(RUA)	Cambodia
68	Ngamsom	Wisit	Focal Point Office of the UNCCD, Thailand	Thailand
69	Ngwenya	Mdoda	Rhodes University	South Africa
70	Odur	Walter	Field Officer,	Uganda
71	Okello	Alice Hope	Omoro, Database compiler	Uganda
72	Okecha	Frederick	District Staff	Uganda
73	Olivera	Carolina	FAO	Colombia





74	Opiyo	Wokolrach Samuel	Agricultural Officer, Nwoya District	Uganda
75	Parathai	Thanongsak	Huay Hong Krhai Training Centre	Thailand
76	Pheak	Sok	Royal University of Agriculture	Cambodia
77	Pitayakon	Limtong	Land Development Department	Thailand
78	Pinar	Meliz Özge	Transitional Zone Agricultural Research Institute – Eskisehir, MoAF (GDARP)	Turkey
79	Poudel	Surya	Farm	Nepal
80	Pranee	Srihaban	Land Development Department	Thailand
81	Providoli	Isabelle	CDE	Switzerland
82	Puttajunyawong	Suwimon	Huay Hong Krhai Training Centre	Thailand
83	Rabé	Mahamane Moctar	Sahel Bio	Niger
84	Rady	Alexander	Alexandria University	Egypt
85	Rattanakaew	Totsanat	Land Use Planning Department	Thailand
86	Rose	Nyapolo	Distrif Staff, Omoro	Uganda
87	Rosendahl	Judith	GIZ	Germany
88	Saavedra	Carlos	FAO	Kenya/Bolivia
89	Saiko	Joyce	Neighbours Initiative Alliance	Kenya
90	Sandvoss	Frank	GFA	Ethiopia
91	Schlingloff	Stefan	FAO Rome	Italy
92	Slam	Andrew Ongai	Crop Farmer, Nwoya	Uganda
93	Somsri	Arunin	Land Development Department	Thailand
94	Shumeta Amaled Assefa	Amaled	Ministry of Innovation and Technology	Ethiopia
95	Sisay Nune	Sisay	World Bank	Ethiopia
96	Sunday	Balle Amale	Field Officer ULN	Uganda
97	Tabu	Geofrey	Crop Farmer, Gulu	Uganda
98	Tamene	Lulseged	International Center for Tropical Agriculture (CIAT)	Ethiopia
99	Tchomga	Philippe	GIUB-UNIBE	Cameroon
100	Tesfaye	Chekole	KFW	Ethiopia
101	Teshome	Kebede	Swiss Development Cooperation (SDC)	Ethiopia
102	Thanunchai	Panida	Agricultural Extension Department	Thailand
103	Tim	Sophea	Royal University of Agriculture	Cambodia
104	Karn	Trisophon	Land Development Regional 6, Chiang Mai, LDD	Thailand
105	Tukahirwa	Joy	Uganda Landcare Network	Uganda
106	Van Dalen	Jeroen	UNCCD	Germany
107	Van Weperen	Willem	Agriculture and Livelihood	Netherlands
108	van Lynden	Godert	ISRIC - World Soil Information	Netherlands
109	Vega	Luisa F	Wajari	Colombia
110	Wakulira	Mathias	Landcare Network	Uganda
111	Wiesenhuetter	Juliana	GIZ	Germany
112	Zelege	Gete	WLRC	Ethiopia
113	Zimmerman	Birgitte	Freelance translator	France





