

## **TOOLS FOR ASSESSING AND MONITORING SUSTAINABLE LAND MANAGEMENT/ LAND DEGRADATION AND DECISION SUPPORT TO ADDRESS TODAY'S GLOBAL CHALLENGES**

LADA-WOCAT seminar, Tuesday 16 February, FAO-HQ Rome

Organized as part of an internal WOCAT management meeting and strategy development process for scaling up of LADA/ WOCAT assessment and monitoring tools and methods

### **Opening Remarks**

**Alexander Muller** Assistant Director General, FAO Natural Resources and Environment Department

I am pleased to open this seminar which builds on 18 years of collaboration in the WOCAT partnership between FAO Land and Water Division, the Centre for Development and Environment, University of Berne (which hosts the WOCAT secretariat), and ISRIC, now known as World Soil Information centre (based in Wageningen).

The seminar had two main aims: First, to inform participants and potential partners of WOCAT/ LADA tools and methods and their potential applications and opportunities for networking/ collaboration. Second, and equally important, to obtain feedback / suggestions from FAO Technical Divisions and Partners on opportunities for uptake/adaptation of the tools and methods in global, regional and national programs, processes and actions. It is mainly targeted at FAO Technical Divisions and Rome based agencies, and we are pleased to welcome IFAD, the Global Mechanism representing Drynet, Bioversity International and the FAO/UNEP liaison officer, but also SDC - the core donor of WOCAT, and the EC Joint Research Council.

The **World Overview of Conservation Approaches and Technologies - WOCAT** is a partnership with a common strategy and objectives for Sustainable Land Management both at global level and among national and regional WOCAT members and research partners. WOCAT is managed by 3 lead institutions - FAO, CDE/UBE and ISRIC - but it is its support and networking with those on the ground that is so vital for making a difference and translating knowledge into action for SLM.

The WOCAT/FAO partnership has enabled to bring WOCAT knowledge and experiences into the FAO-led **Land Degradation Assessment in Drylands project (LADA)** that is supported by GEF and UNEP as an important contribution to the **UN Convention on Desertification (UNCCD)**. LADA is a global project, collaborating with Argentina, Cuba, China, Tunisia, Senegal and South Africa and other technical partners, in the development of standard methods and tools for assessing and monitoring Land Degradation (and improvement). The assessment of LD/SLM is an important basis for planning and decision making in the field of land management and territorial development from national to local levels. The tools and methods are applicable not only in drylands but in the range of ecosystems worldwide and

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were recognised by the First Scientific Conference to the UNCCD (October 2009) as an important basis for monitoring not just degradation but also improvement on the ground and results of efforts of country Parties in implementing the convention.

Today's seminar "**Tools for Assessing and Monitoring Sustainable Land Management / Land Degradation and Decision Support for Addressing Today's Global Challenges**" has been organised by the LADA/WOCAT team. As Assistant Director General of FAO's Natural Resources and Environment Department, I am delighted to see the wide interest and participation by such a range of technical experts and Divisions. The issue of SLM is clearly of concern for sustainable cropping, pasture and rangeland, and forestry systems, for the safeguard of watersheds and river basins and the livelihoods of smallholder and commercial farmers' worldwide. But I would also like to remind you of its fundamental importance for enabling us to reverse land degradation, increase productivity, to adapt to and mitigate climate change and to meet the challenges of ensuring Food security for All and to cope with the ever increasing pressures and demands of our human population, in line with the targets of the FAO World Summit on Food Security and the Millennium Development Goals.

### **Yves Guinand** Swiss Agency for Development & Cooperation

I am equally very pleased to also welcome you all in the name of the Swiss Agency for Development & Cooperation (SDC) to today's seminar at which WOCAT & LADA will present their tools and their potential applications & opportunities for networking and collaborating.

The University of Berne, and its **Centre for Development and Environment (CDE)** at the Geographical Institute, is a longstanding and reliable partner of SDC. CDE has proved over the years with its outstanding and innovative work, particularly on environmental issues as well as on sustainable use of natural resources that the substantial financial engagement of SDC was, has been and still is justifiable. And certainly, SDC recognizes the outstanding work that WOCAT, as part of the CDE and the university, has accomplished in the development of tools for sustainable land management. I gladly admit that over the last years WOCAT has evolved into a leading implementation-oriented, internet-based information and knowledge exchange tool world-wide. It is not only used by developing country partners of SDC but increasingly in emerging countries and even in industrialized countries.

SDC, under its Global Programme on Food Security, remains the most important financial partner for CDE and WOCAT. Over the years CDE and WOCAT proved capable to adapt and create new opportunities within SDC to develop new partnerships. This innovative and adaptive capability remains unchanged.

SDC's financing is result-oriented, and long-lasting commitments are not necessarily the most important objective. SDC's financing however is geared towards the involvement of SDC partner countries and the maintenance of the global secretariat as a contribution of Swiss competence to the development community. WOCAT, especially its secretariat, has been and still is under much pressure to open up, widen its funding opportunities and hence decrease dependence from SDC funding. The network character makes it difficult to establish exact figures but it is certain that total investments in the WOCAT network by local partners now exceed the funding stemming from international donors.

Since the publication of the WOCAT book "**Where the land is greener**" in 2007 a sharp increase in interest of international partners is observed.

WOCAT has been successful among many national and international partners in over 40 countries worldwide, but more can and has to be done, specifically among CGIAR institutes, the GEF and particularly the World Bank. If these big institutions do not buy in or only partially, WOCAT's excellent approaches and tools might not have the success they deserve, because WOCAT and its affiliated research institutes have a very limited range of influence in countries. For example in Morocco, at last year's WOCAT annual meeting, where government employees asked why they should be convinced that WOCAT approaches and tools are the

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best? Evidently,, it would be easier to convince these people if a globally recognised institution such as the World Bank or one of the UN agencies would use WOCAT tools as an official standard.

WOCAT has now come to a crucial turning point in its history whereby tools have been successfully developed and also presented and published. From now on focus should be geared towards lobbying at international level. Success stories are already at hand. China for example used the WOCAT assessment tool and published a “Best practices guide for land degradation control in dryland areas of China” using the standard layout for presentation of the various approaches and technologies.

This is a very good start for WOCAT to become the leading service provider in Soil & Land Management approaches and tools. Recently, WOCAT achieved successful integration in the UNCCD process, with much attention given to WOCAT at the Buenos Aires Conference of the Parties, September 2009. SDC witnessed this integration and recognition with great satisfaction.

When we look at the climate change discussions, WOCAT and its Sustainable Land Management tools must be adapted to respond to climate change requirements. Not general requirements per se, but primarily on climate variability with more extremes. The climate change issue is now very much in fashion and hence it might be much easier to attract support of further funding agencies when riding WOCAT & its SLM tools on the climate change horse.

These are some of the thoughts that I want you to take into today's sessions.

### **SESSION 1: LADA – WOCAT tools and methods**

*Chair: Godert van Lynden*

#### **LADA Project overview and Global level LD Assessment**

*by Freddy Nachtergaele (Land and Water Division-NRL/LADA)*

##### **Background of the Land Degradation Assessment in Drylands (LADA) project**

To harmonize land degradation information the Global Environmental Facility (GEF) has funded the LADA, project. It is implemented by UNEP and executed by FAO (2006 -end 2010).

This project has benefited from the support of UNCCD, ISRIC, the United Nations University (UNU), the Global Land Cover Network (GLCN) and other regional and national partners.

Six countries participate: Argentina, China, Cuba, Senegal, South Africa and Tunisia.

The main **objectives** of the LADA approach are:

- to develop methods to assess and quantify the nature, extent, severity and impacts of land degradation on ecosystems in drylands.
- to build assessment capacities that enable the design and planning of interventions to mitigate land degradation through sustainable land use & management.

The LADA project operates at **different levels**:

- Global level: based on modelling of global databases complemented by ground-truthing

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- National level: collects in a participatory and harmonized way land degradation and SLM information at sub-national level in Land Use Systems (together with WOCAT), complemented by detailed Remote Sensing based Land Cover change studies
- Local level: based on field work and local expertise following a standardized manual

Within the LADA-Approach, land degradation (LD) is simply defined as a decline in ecosystem goods and services. Ecosystem goods and services are assessed by LADA in Land use systems (LUS) units at all scales since land use is the key driver of change in land quality.

### **LADA spider approach**

Status and trends of ecosystem goods and services in a specific land use system can be shown on a spider diagram with a rating on axes for biomass production, yearly biomass increments, soil health, water quality and quantity, biodiversity, economic value of the land use, and social services of the land and its use. The diagram shows that it is rare to find win-win-solutions in all aspects (axes) when land use varies or changes. A change in land use /management practices can affect LD, but may also affect other social-, economic-, or cultural-services etc. The changes (negative or positive) on the axes of the spider diagram (i.e. change in form of the spider diagram) show that trade-offs occur. Therefore negotiation with land users is necessary to identify acceptable solutions for different stakeholders. Changes may also be driven by population pressure, market forces (e.g. price fluctuations), change in social conditions of the stakeholder or institutional measures (legislation on natural resource use, subsidies). The diagrams can visualize differences between different land user groups (e.g. smallholder and large commercial farmers) or between a similar land user group in different agro-ecological and socio-economic contexts.

### **Global land use systems classification**

The global land use system classification and map have been developed by LADA. The map shows a simplified visual output, however, behind each pixel are a great variety of different indicators which are used to build the 40 or so land use units shown on the global map. The global LUS classes are subsequently used for developing and mapping national LUS, which forms the basis for the land degradation/SLM assessments.

### **Regional Training Centres**

Regional Training Centres are being established in each LADA country. They are placed within existing institutions, and technically supported by national and international institutions and universities. Some LADA Training in the regions has started at the end of 2009. The main training will take place in 2010; it is expected that about 20 other countries will participate.

### **Land Degradation Indicators Database DIS4LADA**

- A standard description of land degradation indicators, placed in a DPSIR framework, is available in the on-line database DIS4LADA (developed with NRD – University of Sassari)
- A direct link is made with UNCCD indicators.
- It accommodates individual country wishes to add indicators of local importance.

Conventions and donors would like to have one single indicator and figures for LD costs and implications. However, a common approach rather than generic indicators to address land degradation is needed.

Web: <http://www.fao.org/nr/lada/>

## **National and sub-national LD and SLM assessment and mapping (WOCAT – LADA)**

*by Hanspeter Liniger, WOCAT/ CDE*

WOCAT constitutes a framework for documentation, evaluation and dissemination of good SLM practices and decision support. The questionnaires and databases on SLM technologies and approaches can be used at local/ field level for the assessment of case studies, whereas at the national level the WOCAT/LADA mapping tool can be used for the spatial assessment of land degradation and conservation/ SLM.

### **Local level – Questionnaires on SLM Technologies and Approaches**

The local level assessment is based on SLM technologies (QT) and Approaches (QA) questionnaires. All documented case studies can be shown in the global WOCAT databases. The book 'Where the land is greener' contains a selection of 42 case studies from around the world. The case studies in the book are presented in a standard 4 page summary format. This format has been used for further publications, e.g. NEPCAT fact sheets, China best practices, and a shorter version of the summary format is also used for a forthcoming TerrAfrica publication.

WOCAT local questionnaires generate important information also related to cost/ benefits analysis of SLM technologies, even though it is very difficult to receive reliable economic data. Also included are the impacts of SLM on ecosystem services, the tolerance/ sensitivity of a technology towards climate change, and strengths and weaknesses of technologies and approaches.

### **Decision Support**

One of the main challenges in relation to SLM interventions is where to invest. It is increasingly important to distinguish between rehabilitation, mitigation or prevention. Rehabilitation is very often conducted at very high costs, whereas mitigation or especially prevention can be carried out with a much better pay back. The new WOCAT/LADA mapping methodology for capturing land degradation and SLM (green spots) should become a standardised tool for assessing the areas with the best return for investment.

WOCAT has also developed, within the EU-project DESIRE, a decision support system for selection of SLM practices at the local level which makes use of the WOCAT SLM technologies database. While at national level, the WOCAT/LADA mapping approach can build the basis for enhanced decision making.

### **WOCAT/ LADA Mapping Tool**

The WOCAT/ LADA mapping tool provides a spatial overview of degradation AND conservation/ SLM. It can be used to:

- plan and support SLM activities
- set priorities to combat degradation
- monitor SLM activities and their impacts
- combine dispersed knowledge and identifying data gaps

The mapping tool pays attention to issues like biological and water degradation and addresses also direct and socio-economic causes of these phenomena including their impact on ecosystem services. A questionnaire is used to evaluate what type of LD is actually happening where and why and what is done about it in terms of Sustainable Land Management (SLM). Linking the information obtained to a Geographical Information System

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(GIS) permits the production of maps as well as areal calculations on various aspects of land degradation and conservation/SLM.

The WOCAT/ LADA mapping tool is constructed as a participatory expert assessment (PEA) including expert knowledge/ experiences as well as existing documents and thereby reflecting the current stage of knowledge. The tool has been used in the 6 LADA pilot countries at national level and initial maps have already been produced.

Forthcoming products:

- Global Map of SLM: to show good land management practices, more maps that give a basis for helping people decide where to invest.
- Enhance fact sheet (SLM case study) collection for the wide range of SLM measures
- All SLM tools need to be linked with the LADA approach

Web: <http://www.wocat.org/>

### **Assessment of Land Degradation and Sustainable Land Management (SLM) at the local /community territory level**

*by Sally Bunning (NRL/LADA)*

**Objectives** of the Local Assessment of LADA are to develop and implement methods and tools to assess and analyse land degradation and SLM practices at local level, to build capacity for assessment and monitoring and to improve knowledge and understanding (baseline) of LD and SLM at local level. Furthermore, the LADA local should be used to inform on SLM interventions (effectiveness, extent, impacts) and to guide decision making.

#### **Outcomes of LADA-L**

- LADA-Local Manual (Part I Methodology & Part II Tools) to support LD/SLM Assessment, Monitoring and to use results for decision making/action planning at local level (and wider!). Builds on experiences of FAO, University of East Anglia, Visual Soil Assessment (VSA), WOCAT and 6 LADA countries
- Curriculum for training (will be used in regional training centres)
- Local study areas assessed: in 3-6 key areas /pilot country selected from national LUS and LD assessment
- Analysis of LADA-Local data/ findings by stakeholders/ decision makers: →effects of LD, SLM interventions and the policy environment, identification of needs and priorities, targeting support and investments
- Documentation of SLM measures using WOCAT tools (QA, QT), initial efforts to score effects on ES and to capture information on costs and benefits)
- Establish future monitoring sites at which assessment can be repeated some years later.

**Approach:** LADA-Local is a participatory approach comprising an integrated biophysical and socio-economic assessment and joint analysis with local experts from various sectors. (It is work in progress building on experiences e.g. the forest and biodiversity sections, quantitative basis and analytical guidance could still be enhanced in collaboration with pilot countries and drawing on experiences of other FAO divisions/ assessments).

**Local Study Areas:** Selection of geographic assessment areas (GAAs) is based on national assessment, but also on specific interests of the countries. Once a GAA has been selected representative study areas and communities are located. A first characterisation of the study area is done by carrying out systematic transect walks, to understand which degradation

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types/processes are occurring where and which SLM measures on which land uses. By walking along the transect decisions are made by the team on where to collect more detailed site information comparing good and poor management practices in terms of LD/SLM.

**Socio-economic and livelihoods** information are very important in the whole process, which includes discussions in the field with land users, household livelihoods interview with different types of land users and key informant interviews.

**Biophysical assessment:** The LADA-local manual comprises a set of tools for vegetation, water, soil erosion and soil quality assessments. A Visual Soil assessment testing procedure has been developed to analyze a block of soil directly in the field. Comparison of two different situations (e.g. comparison of sites with or without conservation/ SLM) is an important part of the procedure.

**Analytical framework:** The DPSIR framework is used in LADA-Local to analyze causes and driving forces of LD and SLM and to identify impacts and actual responses of stakeholders. Key drivers are population pressures and market forces. The sustainable livelihoods approach is used to show the impacts of land use/management practices and resulting LD/conservation on livelihoods assets. Impacts on ecosystem services - productive, regulating and supporting and socio-cultural - are also analyzed. Up-scaling from land unit to the landscape level is done to analyze effects of land degradation and SLM offsite and on wider ecosystem functions (e.g. land-water interrelations in the watershed or energy or water supply in the community territory).

**Feedback and Validation:** An important issue in LADA-Local which needs more attention is the feedback and discussion of findings with communities and other actors to improve understanding of the impacts of their practices and their capacity to respond to reduce degradation and adopt effective SLM measures. It is important to bring results up to policy makers and concerned national institutions through an interactive multi-disciplinary review process so as to identify required support for local communities and better target SLM strategies and investments.

### Overview of GEF-5 strategies

*by Anna Tengberg, FAO LADA consultant*

LADA is a GEF funded project. To continue the project a new funding application has to be submitted to the GEF-secretariat. The proposal has to respond to the GEF-5 strategy and objectives.

GEF-5 Land Degradation (Desertification and Deforestation) objectives are:

1. Maintain or improve flows of agro-ecosystem services to sustain the livelihoods of local communities; (~\$250 M)
  2. Generate sustainable flows of forest ecosystem services in arid, semi-arid and sub-humid zones, including sustaining livelihoods of forest-dependent people; (~\$25-75M)
  3. Reduce pressures on natural resources from competing land uses in the wider landscape; (~\$170-250M)
    - a) Enhanced enabling environments toward harmonization and coordination between sectors in support of SLM will be achieved by coordinating policy, legal and regulatory frameworks between sectors competing for land area and natural resources;
    - b) Good SLM practices in the wider landscape demonstrated and adopted by relevant economic sectors. The provision of financial resources to rural land users will enable them to sustain and upscale good practices.
- This type of projects can be multi-focal and also use funding from Biodiversity, Climate Change (LULUCF) and International Waters

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4. Increase capacity to apply adaptive management tools in SLM. (~\$25M)
  - Support adaptive management by aiding countries in national monitoring and reporting to UNCCD
  - GEF will also strengthen the scientific basis for effective monitoring and assessment in the LD FA, including tools and indicators for multi-scale application

The most relevant for LADA and WOCAT purposes are objectives 3 and 4.

A possible strategy for accessing GEF funding for a follow-up of LADA could build on a programmatic approach consisting of global umbrella project and various country driven projects. This would involve current LADA-countries as well as new countries. A linkage should be made also to other ongoing SLM programmes such as TerrAfrica, Menarid, CACILM, etc.

### **WOCAT and LADA contribution to SLM upscaling**

*by Dominique Lantieri (NRL)*

**Sustainable Land Management (SLM)** is very broad and cross cutting! It combines many different issues such as water, livestock, land use, etc. SLM is also cross-sectoral addressing food security, environmental aspects, rural development, etc. and provides win-win solutions to many different issues. SLM can be used for multi-scales and territorial planning. It is multi-focus (technical, science, policy, finance, etc.) and addresses multi-stakeholders from private to public.

#### **TerrAfrica**

TerrAfrica is a partnership between Sub-Saharan African countries, donor countries and agencies, civil society and the research community, with the collective goal of scaling up harmonized support of effective and efficient country-driven SLM approaches.

TerrAfrica has 3 activity lines:

- 1) Coalition building: to advocate a common vision of SLM, to share analyses, to strengthen and harmonize policy dialogues and strategies and to improve coordination at all levels.
- 2) Knowledge Management: a platform should be provided to TerrAfrica partners to identify, generate and disseminate knowledge.
- 3) Investments: - GEF/SIP: 40 country and sub-regional operations, for 150 M\$
  - SLM CSIF: 29 countries: leverage from 2 to 7 per country

A country SLM investment framework (CSIF) is used to implement the TerrAfrica approach at country level. The SLM country team is central in building the investment programme, which consists of a national taskforce comprising a variety of technical ministries, sectors, donors, etc. A common vision is developed at the outset, an assessment of bottlenecks for adoption, including technical and scientific aspects is made, and a prioritisation process identifies on what and where to invest.

In Mali, a diagnostic has been made to assess SLM best practices including cost/benefit analysis using the WOCAT questionnaires.

In collaboration with WOCAT a publication is in development on SLM best practices for Sub-Saharan Africa documenting a range of SLM technology groups in the region supported by case studies from different countries.

#### **Contribution of WOCAT and LADA to SLM up-scaling**

- 1) WOCAT: SLM assessment → a simpler assessment tailored to SLM national diagnostics would be useful, also including more multi-media information

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- 2) LADA (phase 2): towards a geo-referenced land assessment and planning tool? for stakeholder negotiations about investment for SLM up-scaling, to be tested in SLM projects.
- 3) LADA + WOCAT: to provide rapid monitoring and evaluation tools and methods.
- 4) SLM world knowledge base and network at international level: what are the best SLM practices in a certain environment (continuation of work done for TerrAfrica, build on WOCAT database, LADA experiences, etc.); targeting main applications/development agendas

Web: <http://www.terrafrica.org/>

### **Discussion on the 5 presentations**

#### **→ How are the different LADA levels and WOCAT tools linked, what are the connections?**

Freddy Nachtergaele: The connection is the close collaboration. Furthermore, through the involvement of WOCAT the two sides of the coins are documented and assessed, which are land degradation and conservation/SLM. Both aspects are analysed at all 3 levels from global to local level. Especially for harmonisation of the national and local level approach an attempt was made to use similar or consistent categories. In the view of LADA, land use is the major driver of degradation and sustainable management.

Hanspeter Liniger: The Mapping approach used within the LADA-project at the national level was jointly developed by WOCAT and LADA. Besides the WOCAT case studies or fact sheets are included in the local level assessment of LADA. All pilot countries are supposed to compile best SLM practices using the WOCAT questionnaires. The LADA-local manual is still in revision and we need to ensure that it becomes more coherent (language, definitions, categories, etc.) to the other LADA and WOCAT tools and to guide robust local assessments.

Many attempts have been made in terms of developing sustainability indicators by UNCCD, GEF, UNCSD, etc. WOCAT and LADA have actively contributed to these discussions. However, the general break through has not yet happened on use of standard assessment methods and tools..

Godert van Lynden: WOCAT / LADA are looking for areas of collaboration, for wider uptake of methods and tools - that is one of the main aims of this seminar. The aim is to build on the very successful collaboration established among WOCAT, LADA as well as the EU-project DESIRE.

#### **→ Are there indicators related to climate change resilience and biodiversity provided in the WOCAT – LADA tools?**

Hanspeter Liniger: in the WOCAT questionnaire on SLM technology a question is included related to tolerance/ sensitive of a specific technology towards climate change. Climate change adaptation and mitigation are very important issues for WOCAT and LADA and further developments to better cover/ address CC-issues are foreseen.

Sally Bunning: In the presentation not all details of indicators were given, there are some indicators related to biodiversity in the LADA local manual, e.g. for grazing land 'change of species composition', 'invasive species', etc. However, the biodiversity and resilience aspects could still be improved with help and inputs from biodiversity/ecology specialists.

#### **→ Knowledge of farmers and participatory approaches are prominently addressed in the LADA-WOCAT tools. Are land users/ communities willing to reveal their indigenous knowledge? What experiences have been made related to land users knowledge?**

Hanspeter Liniger: WOCAT has only made positive experiences and has realized that people are mostly very interested in sharing their knowledge. So far WOCAT has not come across a situation when anybody did not want to share their information. Usually people have a genuine interest to understand what happens at the local level.

## SESSION 2: The Way Forward for SLM Uptake

*Chair: Hanspeter Liniger*

### Introduction to the LADA/WOCAT vision, strategy and opportunities

*by the Chair*

#### WOCAT Strategy

The [WOCAT strategy](#) determines the direction of the WOCAT programme for the period 2008 - 2012, including

- the vision and mission of the programme
- WOCAT's contribution to SLM
- organisation, management and funding
- roles and responsibilities at two levels: global programme and national/regional initiative
- fields of activity

**WOCAT's vision** is that land and livelihoods are improved through sharing and enhancing knowledge about sustainable land management.

**WOCAT's mission** is to support innovation and decision-making processes in SLM, particularly in connection with soil and water conservation (SWC).

Within the strategy WOCAT differentiates between 4 dimensions of knowledge, related to:

- Sustainable land management (SWC/SLM)
- Tools and methods
- Information sharing and networking
- Research, training and education

### LADA and WOCAT at COP9 in Buenos Aires

*by Sally Bunning*

A joint LADA-WOCAT-DESIRE side event was organised on '**Assessing land degradation and sustainable land management – the WOCAT/LADA/DESIRE approach**' at COP9 in Buenos Aires. The side event aimed to further promote the jointly developed set of tools and methods, but also to enhance the collaboration of the 3 organisations. Furthermore, WOCAT made a key note presentation at the First Scientific Conference of UNCCD organised by CST/ DSD on 'Experiences with Monitoring and Assessment of SLM'. LADA was also invited to consult on the implementation of the conventions regarding monitoring of impact indicators related to LD.

The achievements of WOCAT /LADA were highly acknowledged during the DSD conference by different participating institutions/organisations and WOCAT-LADA had great visibility at COP9.

#### Outcomes of the COP9:

- Countries and stakeholders encouraged to implement 10 year strategic plan and framework (2008–2018) using operational guidelines and with GM support
- Revised procedures and efforts to ensure open dialogue of COP bureau and Executive Secretary with CSOs for their inputs to COP deliberations
- Development and implementation of a communications strategy to build efficient KM with support of FAO and other international organisations

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- Stronger relationships encouraged with UNFCCC, UNCBD, international organisations, institutions (e.g. facilitate reporting; synergies DLDD - CCA&M - biodiversity)
- Exchange research, information, traditional knowledge and technology for drylands through regional research centres and networks;
- CST and scientists to prepare independent report on social, economic and environmental costs of DLDD and benefits for combating desertification
- GEF to facilitate access by Parties, especially Africa, to range of funds related to LD.

COP9 brought a very strong mandate for all of us to work more closely on these issues.

**Main vision:** WOCAT and LADA tools and methods used as a standard for documentation and monitoring within international conventions/ organizations. WOCAT and LADA provide standardised tools and methods, but which are still flexible and adjustable to specific needs.

### Group discussion

Three groups were set up and discussed the following questions:

1. What are your needs related to monitoring, assessment and promoting SLM?
2. What are the opportunities to improve WOCAT – LADA tools to make them more adapted to your needs?
3. How to promote the uptake of WOCAT – LADA tools by decision makers at different levels (local, national/ regional, global)?

**Group 1** Led by Sally Bunning, Stefan Schlingloff

**Group 2** Led by Freddy Nachtergaele, Anna Tengberg, Christine Hauert

**Group 3** Led by Dominique Lantieri, Hanspeter Liniger, Godert van Lynden, Riccardo Biancalani

### Question 1: What are your needs related to monitoring, assessment and promoting SLM?

**1. Climate change:** How can the tools be used to answer new questions related to climate change? How to integrate CC mitigation needs?

- National systems to report emissions and mitigation potential from land based systems, progress has been made in forest systems but agricultural systems are very complex (cultivation, technologies);
- Need to think in terms of wider landscapes: and look at resilience and productive capacity.
- Policy support is needed to identify the most efficient way for mitigation. Countries must be able to identify the best options for adaptation and risk reduction. WOCAT data can be useful for both mitigation and adaptation. These are closely linked

**2. A carbon-balance tool (EX-ante Appraisal Carbon-balance)** has been jointly developed by three FAO divisions TCA, TCI and ESA aimed at providing ex-ante measurements of the impact of agriculture and forestry development projects on GHG emissions and Carbon sequestration. → The group would see good opportunities for further collaboration and integration of WOCAT & LADA tools into the carbon-balance tool (the WOCAT SLM technologies database has already been used). Furthermore, specific indicators related to potential for carbon sequestration of different SLM practices would be useful.

**3. CC Adaptation and Disaster Risk Reduction:** prevention/mitigation/rehabilitation

- use existing technologies/SLM practices to adapt
- embed in integrated CC adaptation approach, the response of resource poor farmers most vulnerable to CC
- disseminate information on how agricultural practices/SLM technologies help ensure resilience (is the WOCAT database too detailed for this purpose?).
- need simple descriptions of farming systems and techniques- context in which CC adaptation strategies/SLM measures can be applied
- which classification system is most useful: AEZ, LUS, farming systems?

**4. Policy/development priorities** GM/ IFAD are bringing issues to a higher level of interest to policy makers. Need to show that SLM will respond to political development priorities. How can LADA/ WOCAT findings/ information be used to address/provide evidence for enhancing food security in medium to long term. Need to address market forces, longer term resilience.

**5. Rapid assessment/dynamic monitoring process:** How to ensure more dynamic monitoring to address, not just extreme events but long term development process. Example of Brazil - It has sophisticated monitoring systems of soil, water, forests. A project was set up to address poor farmers however the land use system became destabilised because of market forces (subsistence farming, declining soil fertility and OM). The decision making process was developed but it was slow. Need rapid assessments tools to respond faster, to put in place measures to revert degradation.

**6. Land use classification and planning**

- LUS can be used at various scales for project implementation and up-scaling – to compare what works in other projects
- Link use of LADA/ WOCAT tools with land use/ territorial planning processes in countries e.g. use of data to address issues of land competition, to help communities plan and manage land
- For wider replication need to better show relations between AEZ and LUS e.g. Bangladesh use rather detailed AEZ for disaster risk management (DRM).

**7. Agricultural Biodiversity:** Diversity of crop varieties as well as species should be included in LADA-WOCAT tools, both at local and national level. Provide simple measurements for biodiversity (link to FAO-Biodiversity group), see presentation by Devra Jarvis (individual meeting)

**8. SLM Impacts:**

- WOCAT is very often too 'micro' based on local case studies, which makes it difficult to generalize the impacts of SLM practices, e.g. cost/benefit ratio, crop yield, etc.
- It is difficult to get detailed data on yield response of a specific SLM practice yet crop yield data is a crucial indicator for impact/ benefits assessment.

**9. Knowledge platform**

- Facilitate exchange of experiences between countries.
- **Case studies:** Show what works and what does not, the dynamics why it works, the link with livelihood, better link information with development issues -biodiversity, food security, etc.; how SLM measures respond

**General discussion:**

1. Costs (and time) of the methodologies: for LADA about USD 250,000, depending on the scale of the sub-national assessment and number of local study areas (can also be less for a more rapid assessment). Associated costs need to taken into account → maximum impact with minimal costs! (in Cuba the National Assessment was conducted in only 3 weeks).

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2. Monitoring at national and local levels: How many people are using the tools and methods?  
→ It is a long-term process, monitoring the changes is one thing, but monitoring the uptake by people is another thing and is not covered within LADA and WOCAT.

### **Question 2: What are opportunities to use or improve WOCAT – LADA tools to make them more adapted to your needs?**

#### **1. Tools development and tailoring to clients:**

- Tailor the tools to the various applications, modular /adaptive approach more palatable to various users/clients
- Develop a more rapid assessment e.g. feasible to use for project design (e.g. for IFAD).

#### **3. Opportunities for Integration/collaboration:**

- The Technologies for Agriculture (TECA) database of FAO, set up essentially for disaster response, could be combined with WOCAT, use of Google Earth to locate existing technologies
- Combine resource networks (soil, water, forest, disaster risk management) and
- Mainstream use of tools and methods in all NRM and sustainable agriculture programmes
- Possibility to summarize the various projects and interventions in one common platform → (WOCAT-LADA interface).

#### **4. Ongoing/Planned Projects**

- **Kagera SLM project** (under TerrAfrica): opportunity to use tools and methods in the Kagera basin (TZ, UG, BU, RW). The Global Mechanism is also supporting the government in developing SLM financing strategy in TZ. Uganda is also developing a SLM country strategic investment framework (CSIF)
- **MICCA project:** (see below) multi-donor trust fund programme: Expert consultations among countries: lifecycle analysis for products in different AEZ for policy analysis for mitigating GHG emissions, focus on soil C and biomass, SLM practices, help countries in reporting, pilots in different farming systems - How smallholders can mitigate; How they can be paid for services, support UNFCCC process, build capacities.
- **Spanish climate adaptation and MDGs project:** to see how it could use the LADA/WOCAT tools

#### **5. Development and Disaster response:**

- Can we use LADA/WOCAT tools to respond to natural disasters/ shocks e.g. earthquake in Haiti, need tools to identify where to start first - where most urgent to rehabilitate agricultural production. Attract donors - link rehabilitation and SLM (Challenge short term funding modalities for disaster response)
- Livelihood adaptation in Bangladesh, move into areas affected by climate hazards, salinity, flash floods, use of LADA/WOCAT questionnaires for situation analysis.
- Define/ develop technology options adapted to vulnerable groups: show how it is useful to smallholders as well as better off farmers.

**6. Synergy among Conventions:** Links have been established between UNCBD and LADA/UNCCD for developing a global indicator of area under sustainable ecosystems (as part of BIP2010 process)

**Question 3: How to promote the uptake of WOCAT – LADA tools by decision makers at different levels (local, national/ regional, global)?**

**1. Cost Effectiveness**

- Economic values, cost effectiveness of using SLM is often not very clear for decision makers
- How much does it cost to use the LADA WOCAT tools and how much time is required

**2. Country Promoter:** Local buyer of the tool, the products needs to be sold from the country level to the projects

**3. Advocacy:** Present the tools in decision making fora, use a more policy/decision making language (less technical)

**4. Applicability:**

- Different donors have different interests, should harmonise but not promote only one standard approach.
- Encourage wider uptake because of relevance, effectiveness, adaptability and user friendliness.
- Better visibility of applications and outcomes, how the tools and methods can be used

**5. Decision Support:** Develop clear decision support tools for SLM (land users- farmers, herders, technical, extensions, local policy) different target groups.

**Conclusion**

The group discussion generally showed that the standardised WOCAT-LADA tools are accepted. However, it also seems that many people would prefer to have more simple, fast and robust methods. But still the tools should be able to be used by all kind of different users and should address a range of different issues. → This is quite a contradiction and great challenge for the improvement and further development of the tools.

WOCAT and LADA would like to make their tools as simple as possible, but this is difficult/unrealistic to address all different needs /issues emerging. It makes it difficult to define a core which can be maintained for all. It needs good verification what are the common issues and interest and therefore clear delineation is needed of what belongs in the core and what can be addressed in additional modules to meet specific needs and requests. Furthermore, products and usability should be more tuned to different target groups.

## **Session 3: Relevant Sustainable land management programs, tools and methods and opportunities for partnership**

*Chair: Anna Tengberg and Freddy Nachtergaele*

### **FAO support to National Forest Monitoring and Assessment (NFMA) & Integrated Land Use assessment (ILUA)**

*by Anne Branthomme FAO Forestry Assessment, Management and Conservation Division*

The National Forest Monitoring and Assessment (NFMA) programme is working since 2000 and builds upon long history and experiences in FAO. It was created to strengthen countries capacities for natural forest inventories.

NFMAs main objective is to assist countries in generating information on their national forest and tree resources for policies development and strategic planning (incl. national forest programmes, resources management planning) sectors. Further core objectives and challenges are to strengthen national/ institutional capacity for long term forestry A&M (incl. reporting), to improve and apply cost effective and wide encompassing (integrated) model approach and tools, to address countries' specific information needs for national level monitoring and decision making processes, to facilitate reporting to international processes and to prioritise countries' information needs on a harmonised basis.

During the last decade, FAO has developed a new approach for NFMA which tries to be always in line with the key objective to satisfy country needs through national adaptations, while addressing international requirements.

An important part of the work is to develop guidelines on good practices related to NFI.

Within the current applied methodology field survey and remote sensing are combined. Remote sensing is used to addresses the changes and to produce world map of forest resources and land use change. The method is also flexible to specific country needs as well as cost-effective. It builds on a multi-sectoral and participatory approach.

NFMA also supports data collection to estimate carbon in above-ground and below-ground biomass, in dead wood, litter and soil. There is a strong need for further research to develop national models or use of IPCC guidelines on good practices.

Integrated Land Use assessment (ILUA) compiles data on crops, livestock, water, etc. and provides a better understanding of ecosystem services and helps to study interrelations and contribution to livelihoods conflict objectives between sectors.

Web: <http://www.fao.org/forestry/nfma/en/>

### **Rehabilitation of forest degraded lands**

*by Nora Berrahmouni Forest Assessment, Management and Conservation Division*

**Integrated watershed management:** based on a global review of watershed management a publication on 'The new generation of watershed management programmes and projects' has been compiled. There are various watershed field projects going on in Africa, Asia and Latin America to provide institutional strengthening, introduce management at the landscape level including upstream and downstream linkages and to maintain protective and soil – water related forest services. The integrated watershed management is based on a collaborative

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approach and includes mapping, inventory and restoration of natural resources. Socio-economic benefits are considered and tools developed for new financing mechanism (e.g. payments for environmental services-PES).

**Urban and peri-urban forestry:** There existed no state of the art in most developing countries which covers the linkages between cities and rural areas. FAO has started from zero to develop strategies for countries. Different supporting tools and products are available such as WISDOM (Woodfuel Integrated Supply/Demand Overview Mapping) for the mapping of sustainable resource potential and woodfuel consumption areas in cities.

### **Opportunities for partnerships**

#### **1) Networking, monitoring, assessment and database activities:**

- GEF-funded Fouta Djallon Highlands Integrated Natural Resources Management Project. 10-year project in 8 West African countries (including a regional observatory on the status of natural resources).
- Spanish-funded Inter-regional Project for Poverty Alleviation and Combating Desertification through Collaborative Watershed Management. 2-year first phase in Ecuador, Mauritania and Morocco.
- Support to the Great Green Wall for the Sahara and Sahel Initiative (TCP, EC funding proposal)

#### **2) Fundraising, networking and activities implementation:**

- 10 year programme on rehabilitation of degraded forest lands for food security, desertification control and environmental conservation – 8 sub-Saharan Africa countries
- Participation to *Silva Mediterranea* activities / working groups and projects
- Promotion of knowledge management (data bases, website links)
- Capacity building activities and participation to workshops, conferences
- Guidelines development and their promotion

## **Sustainable crop intensification strategies and conservation agriculture communities of practices**

*by Theodor Friedrich, Plant Protection and Production Division (AGP)*

**Food and Energy** are global issues, and there is an unchanged and increasing challenge to feed the world. Sustainability of crop production is not a desirable but a necessary option. Intensification and sustainability have to be done both at the same time. FAO Strategic Objective A is the need for Sustainable Crop Production Intensification (SCPI), of which Conservation Agriculture (CA) is the core. CA = applied sustainable agriculture

**Principles:** CA is the simultaneous combination of 3 principles: Continuous minimum mechanical soil disturbance, and Permanent soil cover and Crop rotations. These 3 principles are the minimum set needed and can be further combined with additional measures. The principles of CA can also be applied on other land than cropland, e.g. integration of livestock into crop areas or through combination with trees.

CA is more than just no-till. It is a framework for ecosystem management in a number of production systems, facilitating water retention in the ecosystem (infiltration), erosion control, biodiversity, climate change mitigation/ adaptation.

Related to climate change CA has multiple benefits such as adaptation to better infiltration, adaptation to dry weather (drought tolerance), emissions' reduction, build up of soil carbon.

CA is mostly applied in America and Australia and is suitable for large to small holdings.

To conclude, **Conservation Agriculture:**

- integrates production and productivity
- (efficiency) with sustainability
- enhances natural processes
- is a concept for sustainable management
- of productive land resources
- responds to many global problems
- is expanding globally (5.5 m ha/yr)

### **Climate change adaptation and mitigation in agriculture – potential links of NRC led projects/programs with LADA/WOCAT**

*by Claudia Hiepe (FAO Climate, Energy and Tenure Division - NRC)*

Projects for Climate Change adaptation (CCA) are mainly in Asia and the Caribbean region. SLM and NRM are used as a key entry point for developing CC adaptation options.

#### **Approach**

- Assess current vulnerability, risks and local livelihoods by agro-ecological zone
- Assess future climate risks
- Enhance institutional & technical capacities for adaptation
- Identify, validate and test adaptation options
- Design location-specific adaptation strategies
- Up-scaling and mainstreaming in annual (sectoral) development plans

**Guiding principles** are: building on what already exists, gender perspective, participatory process, cross-sectoral coordination and linking bottom to top & vice versa.

The identification, validation and testing of adaptation options builds on WOCAT and different categories of technologies. It tries to blend local and scientific knowledge with farmers and national research institutions as key partners.

Institutional and technical capacity building is important. Key technical training needs are climate risk & vulnerability analysis, integrating/interpreting climate information, adaptation planning process, technicalities of coping/adaptation options, and climate forecast applications for risk mitigation.

#### **Some key lessons**

- Current climate variability is a suitable entry point to mobilize farmers to address current & future climate risks; DRR (disaster risk reduction) /SLM & CCA go together;
- address CCA within the broader vulnerability context/cross-sectoral
- Adaptation is not new! Tools and methods exist - new is anticipatory way of thinking and an iterative learning plus planning process
- There are no “one fits all” adaptation practices; Go for option menus by AEZ! Farmers take only what benefits; framework conditions may change
- Push for doing better on known sustainable land and water management practices (no-regret)

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- Initiate frameworks and processes for adaptation NOW - building in a long-term perspective - based on better impact assessments
- Re-think the role of research + R&D linkages and extension services

### **DRR/CCA projects – potential links LADA/WOCAT**

Within the DRR/CCA project the WOCAT database and the TECA database have been verified and used. The WOCAT database is a bit too sophisticated for their needs, whereas the TECA database does not fulfil all the requirements.

- global/national WOCAT databases/case studies as source for adaptation technologies/ approaches in local/national context incl. adoption potential
- may adopt parts of WOCAT/LADA questionnaires for better understanding of land degradation (status, trends) and SLM practices
- may provide ideas for the development of CCA module
- learn from national/local LADA/WOCAT methods (technology description, monitoring)
- exchange methodologies regarding local situation assessment for CCA
- capitalize on overlaps between existing FAO CCA projects and LADA/WOCAT countries e.g. Philippines
- possibly develop future projects linking CC and land degradation
- simplified quick assessments/easy and widely replicable methodologies and indicators?

### **Mitigation of Climate Change in Agriculture (MICCA) Project**

This 5 year multi-donor trust fund project is running since February 2010 (3.9 million \$ for 2yrs secured, 60.7 million \$ envisioned). It is led by FAO Climate change, environment and land tenure division (NRC, MarjaLiisa Tapio-Bistrom) in collaboration with other divisions (AGA, ESA, AGP,...). The outcome should be better realization of opportunities in agriculture mitigation of climate change by developing countries.

MICCA aims to:

- produce a better knowledge base for mitigation in AG by life cycle analysis of major products in different farming systems
- consolidate and systematize data on emissions and mitigation potential through expert consultations supporting the IPCC
- pilot test in practice concepts and modalities for integrating small farmers into CCM
- support UNFCCC negotiation process with information on mitigation potential and options in agriculture
- build developing countries capacity on institutional requirements and options for mitigation (3-5 pilot countries)

### **Potential links LADA/WOCAT**

- tap WOCAT knowledge base to identify most promising SLM technologies incl. adoption potential for targeted assessment of mitigation potential
- learn from national/local LADA/WOCAT methodologies (technology description, monitoring & assessment, policy decision support)
- may add mitigation component to existing national/local LADA/WOCAT pilots, build on research links
- carbon sequestration module for LADA/WOCAT?

## **Institutional support for participatory negotiated/ territorial development**

*by Thomas Lindemann (NRC) and Paolo Groppo (NRL)*

Tropical Andes are responsible for environmental stability of South America, subcontinent/region.

**Challenges:** 1) global warming: affecting glaciers which have key roles related to water sources, 2) pollution: mainly from mining; 3) poverty

The methodologies applied are based on local governance with participatory approach.

**Local governance:** municipalities are the key to promote messages to address CC. They are close to local populations, political-financial (are normally very limited) and - administrative capacities. For community empowerment, participatory budgets are available at local level but challenge is to use them on the needs of local people.

**Management of natural resources:** using a watershed approach addressing upstream – downstream conflicts/ relations. Communities living upstream provide numerous environmental services to the downstream users e.g. related to agricultural production, minerals, etc.).

**Land use and land tenure:** Like a bridge over troubled water: To deal with two dimensions: legality (formal/ informal rules) and legitimacy (social deals between actors). Attention is needed on the role of institutions (assess capacities for intervention on land tenure issues and on how to promote inclusiveness among stakeholders to improve LUS **and** LT together (participatory and negotiated approach).

## **Adopting a livelihoods approach to target water-related interventions in support to smallholders**

*by Guido Santini, NRL*

### **Key questions**

- What is the link between access to water and rural poverty?
- Where is water a limiting constraint to agricultural production and a priority for sustainable rural livelihoods?
- How can water-related interventions contribute effectively to boost livelihoods in rural areas?
- Who are the target beneficiaries of the interventions?

**Scales:** Mapping livelihoods is applied from regional to local scale.

At regional level a basement assessment to identify priority areas conducted. Maps developed show the main livelihood zones, the distribution of the rural poor or poverty reduction potential across livelihood zones in SSA. Regional level activities are financially supported by IFAD.

At country level options for water-related investments in support of rural livelihoods are identified and located. The country level focuses more on investments, identifying options for investments. Gates Foundation is supporting the country levels activities.

**Livelihoods mapping:** Participatory approach is used to map livelihood at country level to assess which interventions could be suitable. Participatory mapping includes the following:

- Gather an interdisciplinary team of country experts
- Map out and analyze the major livelihood zones

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- Identify criteria and areas where water interventions have highest impact on poverty reduction
- Matching potential water interventions with livelihood conditions

**Investing in water to support rural livelihoods:** Areas where water interventions could have the highest impact:

- Water is a major factor affecting rural people's livelihoods: as basic human need and major production factor
- Context-specificity: water-related interventions must be adapted to livelihood situations
- Need to focus on smallholders
- Interventions in water primarily focusing on increased resilience of rural farmers
- Water investments to be done in conjunction with a series of complementary investments in agriculture and infrastructure

### **Innovative funding mechanisms: Green Water Credits**

*by Godert van Lynden, ISRIC*

**Green and blue Water:** Why do we use the term 'green water'? Blue water is the liquid water that is pumpable. Green water is the rain water which enters the soils, and returns to the atmosphere in vapor form (evapotranspiration). The term was introduced in 1994, and directly accepted by a large audience as a term to attract attention from policy makers. Through a better green water management the amount of blue water available can be improved. The attention to improved soil water management in rainfed agriculture is a core aspect of the Green Water Credits (GWC). The second key aspect is facilitating farmers to do this.

**Incentives:** Upstream land management is linked to downstream water availability. A lot of policy makers do not realize this. To increase the amount of water downstream the use of upstream water needs to be improved. However, even though the land users are aware of the benefits through improved green water management poverty is a limiting factor and therefore land users need incentives to cover the costs/their labour by changing the land management. Green Water Credits bridge the incentive gap by introducing a scheme for regular compensation by water users to water providers for specified water management services.

**Green water credits (GWC)** is a financial facility to support farmers to make: 1) Initial investments (ST); 2) Maintenance investments (LT) for proper green water management. GWC financial mechanism is based on the benefits for downstream users.

Demonstration basins of GWC are the Tana basin in Kenya and the Sebou basin in Morocco. The Kenya case studies show that the benefits will be much larger than the investments made upstream. For detailed information see 7 reports and a policy brief, all downloadable.

Web: [www.isric.org](http://www.isric.org)

### **Identifying synergies and trade offs between food security and agricultural mitigation & adaptation**

*by Leslie Lipper and Giacomo Branca, FAO Development Economics Division ESA*

**Context of the work:** realized that there is interest in investing into smallholder agricultural systems to improve food security and address rural poverty. Need to increase the capacity of

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agricultural systems to adapt to unreliable/extreme weather events and CC, most agricultural practices that improved food security adaptation also have a mitigation impact.

SLM practices that contribute to FS also contribute to adaptation and mitigation and can attract funding. However, we need to document evidence of changes on yields, estimates of mitigation potential, and the costs of adoption of practices, this are key aspects for developing policies for adoption and mitigation.

**Relation with WOCAT data:** Different SLM practices are categorised according to their carbon sequestration potential and their food security potential. SLM practices with both high potential to increase C-sequestration and food security are for instance: restoration of degraded land, change from bare to improved fallow, agroforestry options that increase food or incomes, conservation tillage, etc.

The case studies from the WOCAT database on SLM technologies as well as case studies from the WOCAT book 'where the land is greener' have been used to estimate the impact of different SLM technologies on yield as well as the impact of extreme weather events on the yield variability. Furthermore, a cost estimation of different SLM technologies has been compiled out of the WOCAT data as well.

**EX-Ante Carbon-balance Tool:** The EX-Ante Carbon-balance Tool (EX-ACT) is a tool developed by the Food and Agriculture Organization of the United Nations (FAO). It is aimed at providing ex-ante measurements of the mitigation impact of agriculture and forestry development projects, estimating net Carbon (C) balance from greenhouse gas (GHG) emissions and C sequestration. The main output of the tool is an estimation of the C-balance that is associated with adoption of alternative land management options, as compared to a 'business as usual' scenario. EX-ACT has been developed using primarily the IPCC 2006 Guidelines for National Greenhouse Gas Inventories, complemented by other existing methodologies and reviews of default coefficients where available. EX-ACT helps project designers to integrate climate response activities in agriculture projects and can help to identify the mitigation impacts of various investment project options (from [Ex-ACT Technical Guidelines \(pdf\)](#)).

### Use of WOCAT data

- Provides data on relative net benefits (food security) and adoption costs of SLM technologies
- Provides baseline for EX-Ante Carbon-balance Tool (C sequestration potential)

### Findings

- Synergies/trade offs differ across localities: need to identify where they occur in specific cases
- Benefits and costs of adoption/ implementation also vary by geographical area and farming systems

### Inputs for integrating work wit WOCAT/LADA

- WOCAT database: interest to have a wider geographical coverage, better comparison among practices and costs and more economic data on opportunity costs of adoption, integration of and implementation of these practices
- Household survey: useful to integrate some questions on implementations of SLM practices
- WOCAT database provide an in-depth evaluation of SLM projects and understanding of the adoption process – any way to harness this knowledge in designing household-survey sub-modules on adoption?

## **Carbon Benefits Project: Modelling, Measurement & Monitoring**

*by Marieta Sakelian UNEP/FAO liaison officer*

### **Current problem faced by GEF**

Natural Resource Management projects claim carbon as a Global Environmental Benefit (GEB), but GEF has no standardized cost-effective tool for assessment. Therefore a methodology is needed that is comprehensible, standardized and robust and applicable to ALL GEF projects

**The Carbon-Benefits project (CBP)** was approved by the GEF and formally launched in UNEP, Nairobi, on 11 May 2009. The total costs of the project are US\$ 9.16 million (of which GEF contributes US\$ 5.53 million and rest is co-finance) UNEP coordinates the project in line with GEF Focal Area strategic priorities.

A consortium of different research groups and institutions/ organisations is involved such as: UNEP/DEWA, Colorado State University, ISRIC, ODG-UEA and a group of national (KARI, CENA) and international research partners (ICRISAT, ADB) from existing GEF projects, WWF-USA, ICRAF, CIFOR & Michigan State University.

### **Objective of the CBP**

To help the GEF promote and prove carbon as a global environmental benefit in SLM interventions by providing a cost effective, user-friendly, yet scientifically rigorous methodology for modelling, measuring and monitoring carbon and GHG mitigation benefits in GEF projects dealing with natural resources in all climate zones and land use systems. The system will:

- Estimate and model carbon stocks and flows and GHG emissions under present and alternative management
- Measure and monitor carbon changes under specified land use and management

**Sub-components:** The project has strong science-oriented and capacity-building sub-components.

- 1: Development of standardized and integrated tools for quantification and assessment of Carbon (including C accounting) and GHG Benefits
- 2: Test Cases and capacity building (developed and tested CBP protocols using existing GEF projects in five countries)
- 3: Best practices project design (to strengthen carbon and socio-economic impacts of GEF activities)
- 4: Web portal design (global access to tools for GEF agencies and project partners)

**Carbon benefits M&A:** The system developed will be:

- Easy to use but also have the capacity for complex carbon & GHG accounting if needed
- Applicable to projects with a wide range of soil types, climates and land uses
- Able to help projects with little data, and projects with lots of data, to monitor C benefits
- Produce estimates that are suitable for use in C markets if desired

The system will build on a data-rich, detailed watershed study in western Kenya which has a multi-scale assessment framework for GHGs as well as on RS technologies and land based inventory methods developed by Michigan State. The project will also build on modelling tools for assessment of above and below ground C stocks developed for GEF and other funding agencies.

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Existing GEF projects which are currently trying to measure C benefits will be used as test cases in the project to develop the system.

### **The Economic of Ecosystems and Biodiversity (TEEB)**

The TEEB study is being led by UNEP with financial support from the European Commission, German Federal Ministry for the Environment, and the UK Department for Environment, Food and Rural Affairs. It is a major International initiative to

- draw attention to global economic benefits of biodiversity
- highlight the growing cost of biodiversity loss and ecosystem degradation
- bring together experts from the field of science, economics and policy
- enable practical actions moving forward

Outputs: series of reports and guidelines for policy makers for practical actions

Website: [www.teeweb.org](http://www.teeweb.org)

### **Discussion points from Session 3**

Hanspeter Liniger: A variety of opportunities and possible collaborations for WOCAT and LADA have been shown

Sally Bunning: while developing the LADA phase 2, we should think about further collaborations and developing a good integrated programme. There is a huge potential for collaborations and linkages available.

Katia Medeiros: Assessment should involve a control group. LADA-WOCAT should be used more as a monitoring tool

Anna Tengberg: Monitoring will become more important in next LADA phase.

Yves Guinand: How can WOCAT/ LADA tools being used by others? SDC would like to see: WOCAT core tools with additional flexible tools to address specific needs. Harmonize donor funding, going more and more into a harmonized system.

## **SESSION 4: The Way Forward- Potential Partners**

### **World Atlas on Desertification, Land Degradation and Drought and Improvement, Adaptation**

*by Michael Cherlet EC-Joint Research Council (JRC)*

**Collaboration:** For the next 'World Atlas' there is already an effective partnership with between JRC and WOCAT-LADA. The collaborative initiative for the new World Atlas of Desertification (WAD) launched by JRC and UNEP will provide a framework for monitoring and assessment, based on a set of indicators selected through and supported by conceptual models and linking to relevant ecosystem services.

**Scope:** The Atlas on Desertification, Land Degradation and Drought (DLDD) will also address improvements and adaptation of SLM.

The atlas is planned to be a living digital platform that will support direct and timely data update. The atlas framework will support the possibility for regular revisions of the assessments on the state of DLDD and improvements. Under the WAD it is planned to compile baseline information relative to the year 2010, to be published during 2011/12.

**Partners and Funds:** There are not yet funds available to support the WAD related activities. So far 2 meetings have been conducted in 2009. The coordination and harmonization of the

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data and information compilation will be done by JRC. UNEP has published the previous version of the Atlas of Desertification and are therefore also involved as a main partner.

**Local knowledge:** Basic knowledge for the Atlas will come from local knowledge which will be based also on WOCAT and LADA tools and methodologies. WOCAT and LADA will provide information on case studies showing local examples of global phenomena.

### **Building civil society networks to address Dryland degradation and poverty**

*by Paule Herodote (Global Mechanism/UNCCD)*

**Drynet Initiative:** In order to contribute to countering dryland degradation, 14 Civil Society Organisations (CSOs) from all over the world joined forces in 2007 in the Drynet programme. Local organisations and communities living in drylands should be at the heart of the effort since their involvement in national and international arenas of decision-making is often very low. By directly reaching out to local groups, Drynet intends to redress the current imbalance.

Drynet is financed by the European Union, the Global Mechanism and the project partners themselves. By involving civil society groups in local and national development and planning processes Drynet builds a foundation for civil society across the world to strengthen its position in the struggle to sustainably manage drylands (Web: [www.dry-net.org](http://www.dry-net.org)).

**Objectives:** Drynet's objective is to build CSO instruments and capacities to get drylands higher on the political agenda through information exchange, increased collaboration, specialised training, and dialogue facilitation and policy influence.

The main pillars of Drynet are:

- Strengthen national CSO platforms and build alliances
- Articulate local concerns in national & international policy processes
- Provide channel for capacity building support to CSOs
- Act as hub for local knowledge and research

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### **Improved communication and awareness raising for SLM – Sum-up**

*Facilitated by Hanspeter Liniger, CDE*

**Challenges and opportunities:** There are many challenges on the way forward for WOCAT and LADA. Several projects/ programmes would like to make their knowledge available and show the impact achieved. Common standardized tools to assess the impacts of LD and SLM are appreciated and everybody would like to use the tools and methods, but preferably without any financial contribution. This seminar has shown that: i) the WOCAT / LADA tools are appreciated and acknowledged; ii) WOCAT tools (especially SLM Technologies database) are used without our knowledge; iii) there is a common request for even more simple, but robust tools and methods. However, SLM and its impacts is complex and it is difficult to cover all aspects within one method. Therefore it is so important to go for good standardised core tools and methods with additional modules addressing specific aspects and needs (e.g. watershed module, climate change module, biodiversity module, etc.).

**A common platform of knowledge** has been mentioned several times and is highly appreciated by the participants. This is also a very important aspect which WOCAT / LADA have to keep in mind on the way forward. The database on SLM practices can build a main

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pillar of this common platform of knowledge. However, the KM platform should be further enlarged and improved with good quality data.

**Joint products** are important aspects of the further collaboration between WOCAT and LADA. Of high priority especially for WOCAT, is to enhance inventories of SLM addressing impacts, resilience to CC, cost/ benefits analysis, etc. Maps at local or national levels as well as decision support tools for different users are also a major concern of WOCAT / LADA. Furthermore, more work and research is needed showing the role of SLM in view of global issues e.g. climate change adaptation and mitigation, food security, biodiversity, energy, water, disaster prevention, .

**The way forward for WOCAT / LADA:** There is a need for more efforts related to awareness raising and communication. This involves a clear definition of different target groups for local, national and regional levels. The demands, needs and opportunities for certain products need to be verified. At local level this can include the documentation of SLM practices in fact sheets or participatory video, whereas at national and regional level this could include documentaries, articles in scientific papers, etc.

- Strengthen joint SLM KM and enhancement of knowledge base
- Promoting synergies → joint programs/projects?
- Developing joint funding proposals?

**Discussion:** Hanspeter asked about interest to continue/start working with LADA/ WOCAT → There was a high confirmation from participants interested in collaboration/ involvement in LADA/ WOCAT activities.

### **Closing remarks**

Sally Bunning thanked participants for their excellent and focused presentations and the rich discussions. She invited participants to a reception in the office of the Director, Land and Water Division, who expressed sincere regrets not to be able to attend due to duty travel in India. She noted that the WOCAT management meeting would continue the next day and follow up meetings with the WOCAT secretariat with interested officers/Divisions on areas of collaboration and for peer review of TerrAfrica SLM sections. Finally, a meeting would be held with Mr Mueller, ADG/NRD to share and discuss outcomes of the management meeting and one day seminar and obtain guidance for follow up.

## List of Participants

### Organisers

**FAO-NRL, WOCAT management and LADA project** Sally Bunning,  
Freddy Nachtergaele  
Riccardo Biancalani

**CDE, University of Bern** Hanspeter Liniger  
WOCAT management & secretariat Christine Hauert

**World Soil Information (ISRIC)** Godert van Lynden  
WOCAT management

### External Participants

**Swiss Agency for Development and Cooperation (SDC)** Yves Guinand

**IFAD** Laria Firman, Technical Advisor - Environment & NRM  
Sheila Mwanundu  
Rudolf Cleveringa

**EC-Joint Research Council (JRC)** Michael Cherlet

**Bioversity International (IPGRI)** Devra Jarvis

**UNEP** Marieta Sakalian, FAO/UNEP liaison officer  
**Global Mechanism** Paule Herodote, on behalf of Drynet coalition

### FAO Departments/Divisions

**Natural Resources Management and Environment Department (NRD)** Alexander Mueller  
MarjaLiisa Tapio-Bistrom  
Christine Seeberg Elverfeldt

**Land and Water Division (NRL)** Stefan Schlingloff  
Hubert George  
Anna Tengberg, LADA consultant  
Janie Rioux, LADA consultant  
Dominique Lantieri  
Paolo Groppo  
Jean Marc Faures  
Domitille Vallée  
Guido Santini  
MaryJane de la Cruz  
Antonio Martucci  
Renato Cumani  
Nicoletta Forlano

**Climate, Energy and Tenure Division (NRC)** Claudia Hiepe  
Daniela Morra  
Stephan Baas  
Thomas Lindemann

**Agriculture Department (AGD)** Theodor Friedrich  
Cornelis Vanduijvandijk

**Forest Assessment, Management and Conservation Division (FOM)** Nora Berrahmouni  
Anne Branthomme  
Thomas Hofer  
Jesper Tranberg

## LADA/WOCAT Seminar, Tuesday 16<sup>th</sup> February 2010

	Michelle Gauthier Hubert de Foresta, consultant (IRD) Jean-Marc Boffa, consultant
<b>Development Economics Division (ESA)</b>	Giacomo Branca Bernardette Neves Leslie Lipper
<b>Emergency Operations and Rehabilitation Division (TCE)</b>	Claudia Martinez- Mansell
<b>Office of Corporate Communications and External Relations (OEKR)</b>	Estibalitz Morras-Dimas
<b>Investment Centre Division (TCI)</b>	Katia Medeiros Jean Risopoulos