October 2011

Briefing Note

Putting knowledge into action:

Managing knowledge to combat desertification

To harness the latest research alongside local knowledge, we need to learn how to manage our knowledge more effectively. This paper holds recommendations for effective knowledge management systems, specifically for the UNCCD

Background

It is often said that "knowledge is power". The pursuit of knowledge has built civilisations and also led to their downfall. Governments around the world are now seeking to stimulate the 'knowledge economy', as they recognize the key role knowledge and technology can play in economic growth.

There is no shortage of scientific and local/traditional knowledge on how to manage desertification. Much of this information is relevant to those charged with implementing the UNCCD and its associated National Action Plans, yet little of the knowledge generated by researchers, affected communities and civil society organisations (CSOs) seems to reach this destination.

When so much information is being generated every day, it is important to understand how we can filter out misleading ideas, - and harness the power of increased knowledge to combat desertification more effectively

This Briefing Note draws on research from the Sustainable Learning Project (funded by the UK Government's Research Councils) and the EU-funded DESIRE Project, as well as the WOCAT knowledge management system. It asks how the UNCCD can build more effectively on a combination of the most recent, cutting edge research, and the wealth of evolving local knowledge from affected communities and CSOs.

Through stakeholder participation DESIRE aims to:

- Combine local and scientific knowledge to select feasible, effective and socially accepted sustainable land management (SLM) options

The Sustainable Learning Project is: Analysing knowledge exchange processes in environmental management to develop theory and practice that can facilitate more effective knowledge management from local to global scales

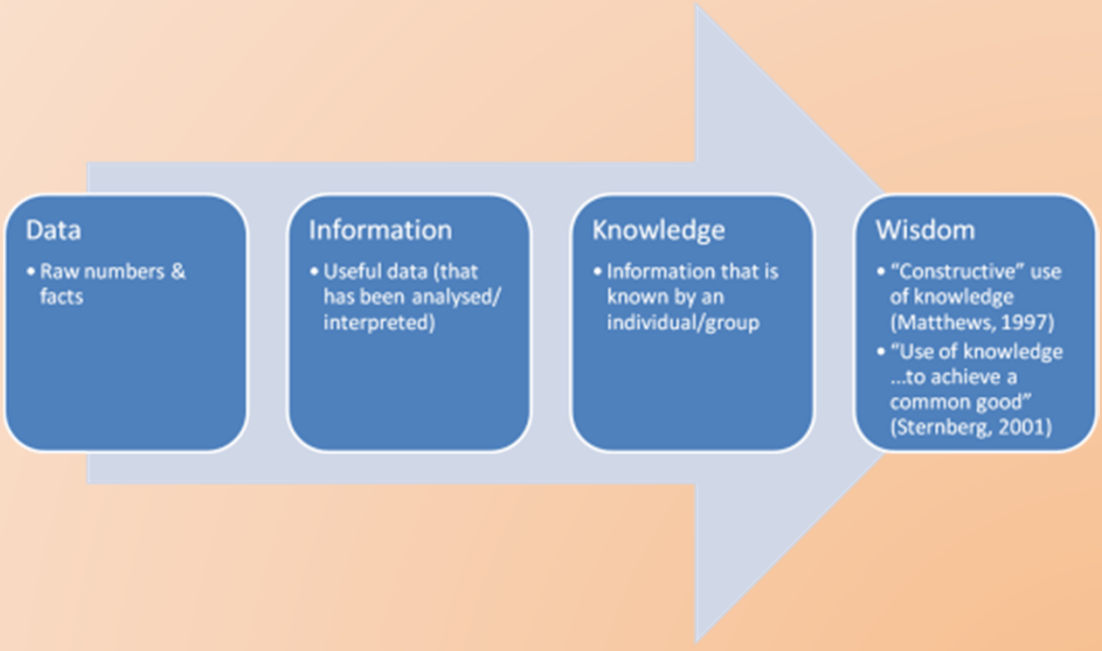
DESIRE study sites around the world, threatened by desertification

1. Knowledge Management

Knowledge management is increasingly seen as a critical tool for combating desertification, and creating new sustainable outcomes and behaviours. Knowledge management focuses on how knowledge is generated and shared, rather than the data and information upon which that knowledge is based, or how this knowledge is then applied (which is normally the domain of policy-makers).

What is knowledge management?

Knowledge management is a process that does not just involve the generation and exchange of data or information; it also requires mechanisms that promote a change in understanding of the individuals involved and the cogeneration of new knowledge through the participation of a wide range of individuals and organisations. Knowledge management involves maintaining stocks or "reservoirs" of knowledge. It may also prevent outdated knowledge from leading to counter-productive responses to land degradation. Knowledge management requires sustainable and efficient means of access and/or knowledge brokerage. When carefully designed, such processes have the potential to change basic understandings of key issues. They can also facilitate changes in the higher order thinking that influence the broad strategies that are used to achieve desired outcomes, such as improved monitoring, assessment and management of land degradation.



Based on: Reed MS, Fazey I, Stringer LC, Raymond CM, Akhtar-Schuster M, Begni G, Bigas H, Brehm S, Briggs J, Bryce R, Buckmaster S, Chanda R, Davies J, Diez E, Essahli W, Evely A, Geeson N, Hartmann I, Holden J, Hubacek K, Ioris I, Kruger B, Laureano P, Phillipson J, Prell C, Quinn CH, Reeves AD, Seely M, Thomas R, van der Werff Ten Bosch MJ, Vergunst P, Wagner L (2011) Knowledge management for land degradation monitoring and assessment: an analysis of contemporary thinking. *Land Degradation & Development*

2. Why do we need an improved approach to knowledge management?

There is a growing emphasis on finding ways to improve the communication, accessibility, and the potential impact of research findings. This has led to an abundance of approaches and methods for communicating and exchanging knowledge, most of which have yet to be properly evaluated.

Knowledge management is rarely evaluated, so we don't learn lessons about what works and what doesn't work

Knowledge management processes are rarely founded on current understanding of how knowledge is generated, exchanged and transformed in complex socio-ecological systems. It is rarely recognised that the way knowledge is perceived and constructed will affect the process and outcomes of knowledge management. This has implications for the co-generation, acceptance and use of knowledge, and ultimately, how complex sustainability problems are approached and knowledge is managed.

New advances in our understanding of how knowledge is generated, exchanged and transformed as it passes from person to person need to be reflected in the way we design knowledge management processes

3. What can influence how effectively we exchange knowledge?

Key influences on the design and implementation of knowledge management include the personal beliefs that persons designing the knowledge management process hold about what constitutes knowledge.

The prevalent view of western institutions, including the majority of organisations funding knowledge management, is that knowledge is something that can be given and received. This view tends to result in processes that focus on one-way knowledge transfer rather than a two-way exchange of knowledge.

The assumption that information can be transferred largely unchanged between individuals underlies many existing knowledge management systems. But, this view does not acknowledge the complexity of how knowledge is actually generated, exchanged and transformed through social interaction.

The way that people understand what knowledge is, significantly affects the way knowledge management processes are designed, and their outcomes

4. How do *you* approach knowledge?

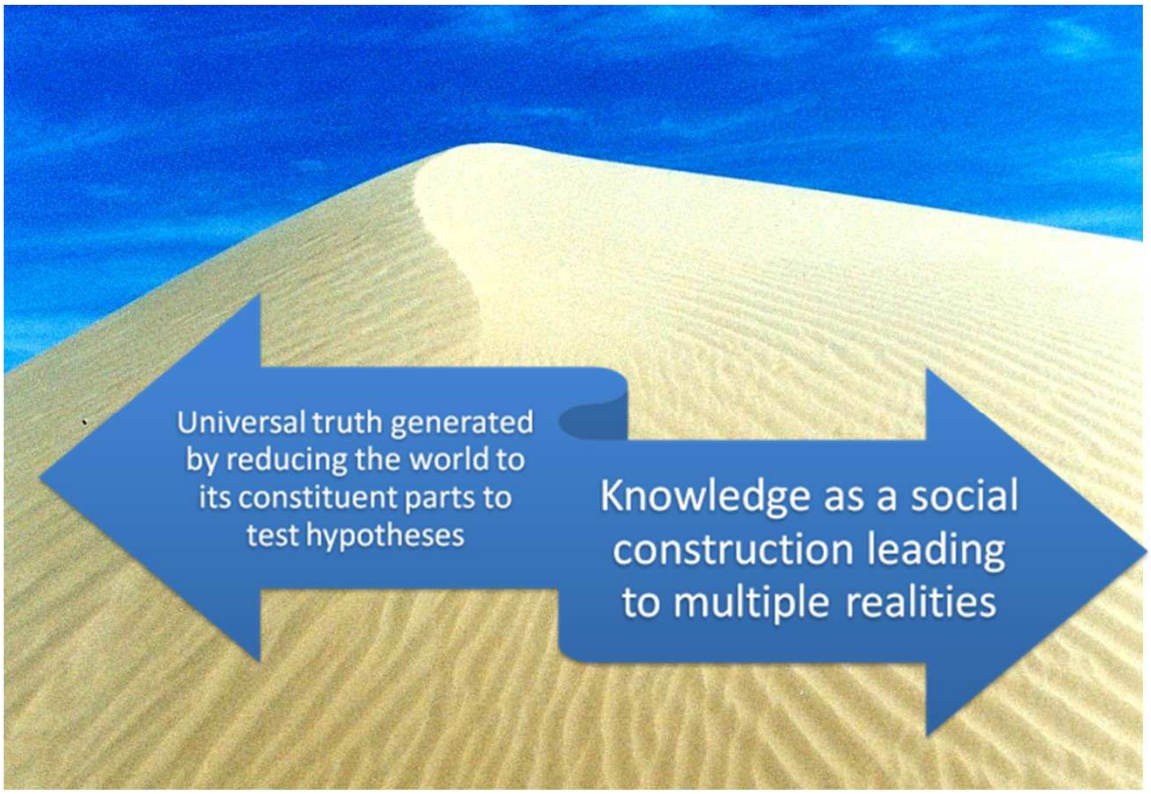
The way that people approach knowledge (for example, what they consider to be "valid" evidence, and the types of knowledge they are prepared to take into account or learn from) influences knowledge management in a number of ways:

1. **Power balances in a knowledge management process can be shifted**
2. **Different types of knowledge can be accessed**
3. **Local and scientific knowledge may be considered and integrated to different extents**
4. **Responsibility for the process may be shared between the providers and users of knowledge to different extents**

You need to think about what sort of approach *you* take to understanding what constitutes knowledge before you can design the kind of knowledge management process that will really work for you.

Question:

Where on this spectrum do you feel most comfortable?



Question:

Which of these types of knowledge do you typically consider?

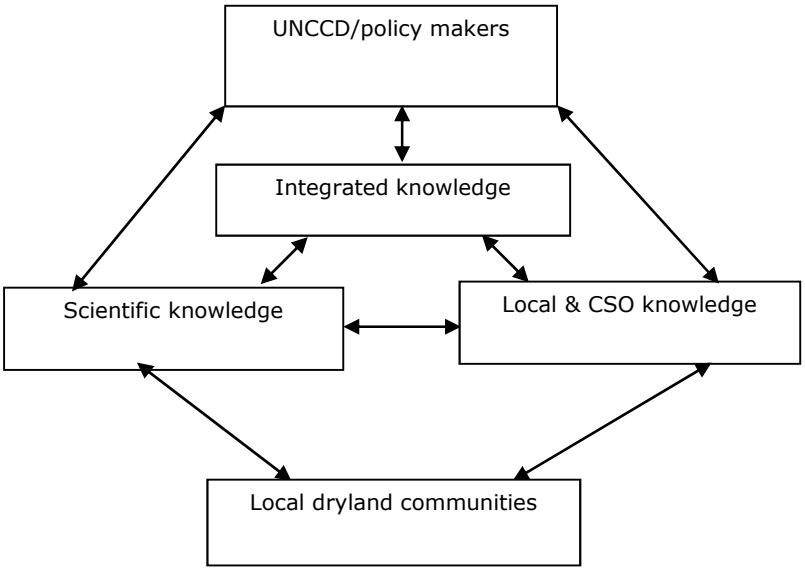
Knowledge Type			
Local	⟷	Generalised/Universal	*Extent to which knowledge is locally generated/relevant versus universal*
Informal	⟷	Formal	*Extent to which knowledge generated via formal, codified processes*
Novice	⟷	Expert	*Extent to which those generating knowledge are regarded as experts*
Tacit (cannot be articulated) ⟷ Implicit (not yet articulated)	⟷	Explicit (articulated)	*Extent to which knowledge is articulated and accessible to others*
Traditional	⟷	Scientific	*Extent to which knowledge is embedded in and reflects traditional cultural values/norms, or in the scientific method*

Based on: Raymond CM, Fazey I, Reed MS, Stringer LC, Robinson GM, Evely AC (2010) Integrating local and scientific knowledge for environmental management: From products to processes. *Journal of Environmental Management* 91: 1766-1777

5. What does this mean for the UNCCD?

The UNCCD's 10-year Strategic Plan emphasises the need to integrate knowledge between researchers and CSOs (Operational Objective 1, Outcome 1.3). The Plan draws together different kinds of knowledge mentioned in the Convention itself.

Several mechanisms already exist to bring scientific knowledge into the UNCCD, and proposals for an Intergovernmental Scientific Panel will be discussed at the 10th Conference of the Parties to the Convention. However, there is no formal mechanism for local and traditional knowledge to enter the UNCCD processes and negotiations. Civil Society Organisations can, and do, play an important role in bringing local knowledge to the Convention. However, the way that this is carried out, in particular the integration of local and scientific knowledge, could be greatly improved.



6. Managing local and scientific knowledge in the UNCCD

Perception of the need for the UNCCD as a global force grew out of a recognition that the prevailing top-down, science-led technology transfer paradigm was inadequate for combating desertification. It was argued that by tapping into local and traditional knowledge, more complete information could lead to more robust solutions to environmental problems. There is now empirical evidence that this is indeed the case.

However, local knowledge cannot be unquestioningly accepted, as it might be too site-specific, for example. Instead, a growing body of literature suggests that a combination of local and scientific knowledge may empower local communities to monitor and manage environmental change more easily and accurately.

Scientific knowledge is typically understood to be explicit, systematised, decontextualised and hence widely transferable. This is sometimes referred to as ‘‘know-why’’, since scientific knowledge partly attempts to understand the underlying principles and theory behind observable phenomena. This contrasts with the ‘‘know-how’’ of local knowledge, that is primarily tacit, implicit, informal, context-dependant, and results from the collective experience of generations of observation and practice.

By combining these different types of knowledge, researchers and local communities, with their different understandings, can interact to produce more relevant and effective policy and practice to combat desertification. In a growing number of cases, this has involved researchers, CSOs and communities working together from proposal development through fieldwork to analysis and action.

This is happening in practice in the EU-funded DESIRE project, that includes WOCAT methodology to select approaches and technologies to combat desertification. The following sections provide explanation.

7. The DESIRE/WOCAT/LADA approach to knowledge management for drylands

The DESIRE project has developed a comprehensive approach to knowledge management that has been tested in drylands around the world. It builds on approaches previously initiated or developed by:

- UN Food & Agriculture Organisation's Land Degradation Assessment in Drylands (LADA),
- World Conservation Approaches and Technologies (WOCAT) programme
- Dryland Development Paradigm (DDP)

DESIRE presents a new methodology in which existing WOCAT tools have been integrated with a stakeholder learning approach and a decision support system. The result is a methodological framework that has global relevance that remains adaptable and flexible enough to cater for the variation of local situations.

For more information, see the UNCCD White Paper from Working Group 3 on "Monitoring and Assessment of Desertification, Land Degradation and Drought: Knowledge Management, Institutions and Economics" or see further reading below.

DESIRE provides a global framework that is adaptable and flexible enough to cater for local situations

Steps in the DESIRE/WOCAT/LADA approach to Knowledge Management for drylands

1-2 **The starting point**: Identify system boundaries, stakeholders and their goals. Describe the socio-cultural, economic, technological, political and environmental context and drivers of change

3 **Assessment with indicators:** Determine current land degradation status, future land degradation risk and existing soil/water conservation

4-5 **Potential strategies:** Identify, evaluate and document existing land degradation remediation options. Prioritize remediation options with stakeholders

6 **Implementing field trials:** Trial and monitor remediation options in the field

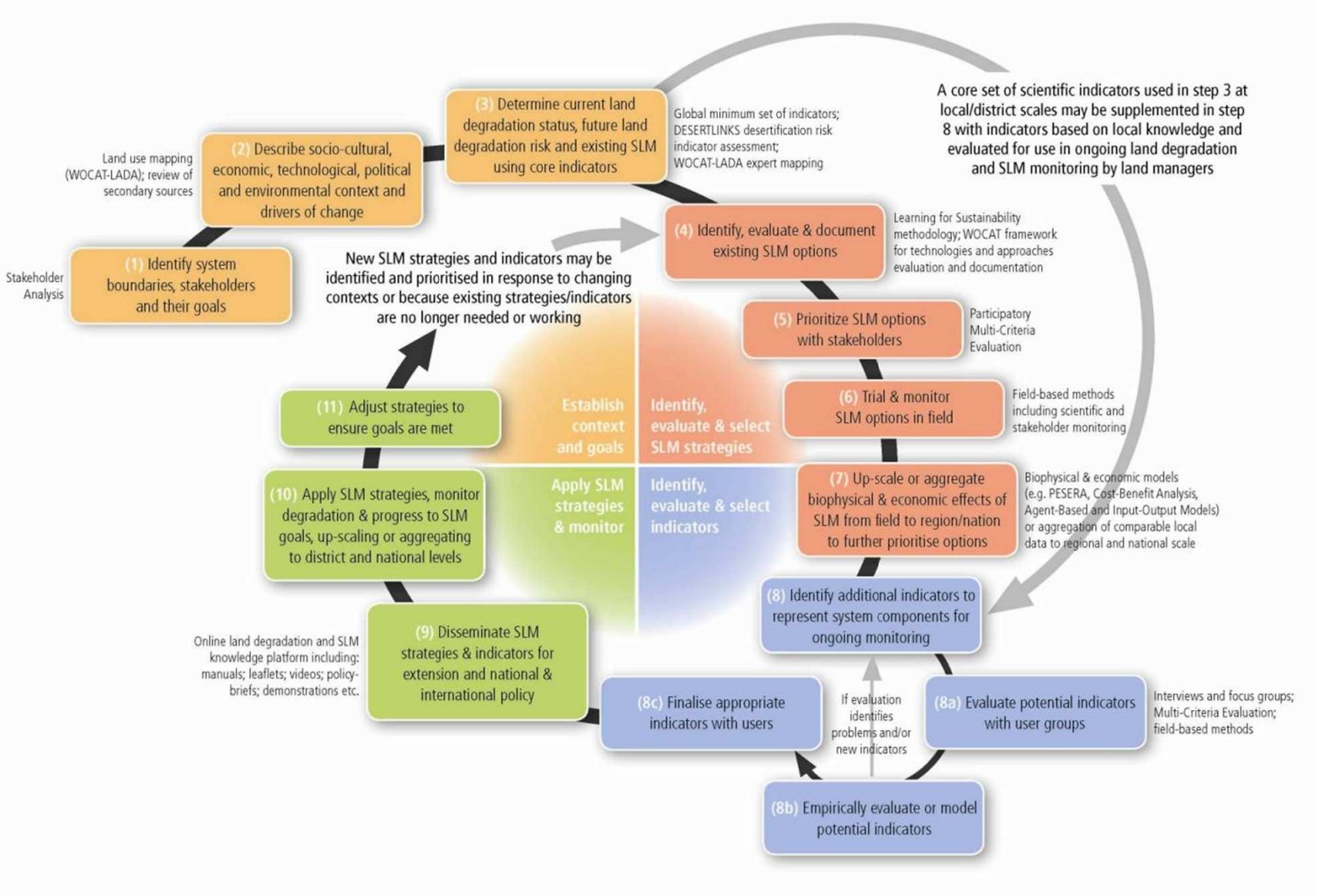
7 **Regional scale solutions:** Model biophysical and economic effects of remediation options at field and regional scale

8 **Identify, test and select additional indicators where necessary:** to enable land managers to continue monitoring land degradation themselves, as they apply remediation options

9-10 **Facilitating dissemination:** Disseminate strategies for extension and national and international policy-makers. Apply remediation strategies, and monitor degradation and progress to sustainability goals

If the stakeholders involved with DESIRE have been impressed by the research results, then the ideas and application of strategies should in theory spread beyond the study sites.

To adjust (11) or adapt to new situations (such as new agricultural policies) the research cycle may be followed round again. This model of linked methods of assessment, strategy selection, trial and evaluation can now be used as a standard procedure as part of combating desertification.



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8. How can we achieve a common global knowledge management platform for the UNCCD?

WOCAT (World Overview of Conservation Approaches and Technologies) is both a framework for standardised documentation, evaluation and dissemination of knowledge on sustainable land management (SLM), - and a open consortium of partners using these tools and methods for knowledge management and decision support.

WOCAT tools comprise, among others, questionnaires for documentation and evaluation, a global database for storage, searching and exchange of SLM practices, a scale-independent mapping tool for local and regional assessment of degradation and SLM, and a decision support tool for selection and up-scaling of SLM practices.

Harmonizing WOCAT and PRAIS 2 through a joined template will allow policy recommendations and decision support rooted in ground experiences

WOCAT can offer the following to the UNCCD in order to have one joint knowledge management and decision support system for all different agencies involved in the UNCCD, and have a collective overview of WOCAT and UNCCD best practices and reporting results:

- Joined-up national SLM reporting in an extensively tested format
- SLM mapping
- A database to store and retrieve information
- Joint global knowledge and data platform, with the UNCCD
- Training and capacity building
- Science based inputs, thanks to a strong link to research
- Analytical capacity for reporting and showing impact of the Convention

Furthermore, WOCAT can contribute to defining UNCCD impact indicators

Key Messages

1. All current cross-fertilisation between scientists and CSOs depends on the initiatives of individual scientists or CSO representatives. **A more formal mechanism to foster integration between local and scientific knowledge for the UNCCD** would mark an important step forward. For example, CSOs and leading scientists could be included together in CST discussions, on the roster of experts, in the proposed Intergovernmental Scientific Panel, and/or via a more standardized and easily accessible knowledge management system (see 3 below)

2. Methods now exist for combining local and scientific knowledge in land degradation monitoring and assessment and the selection of sustainable land management options. It is important that **more programmes and projects use this sort of approach to co-generate new knowledge that can help meet the Strategic Objectives of the UNCCD's 10 year Strategic Plan**

3. In a step-wise approach, **a single joint knowledge management and decision support system based on the WOCAT format could replace PRAIS 2** and form the UNCCD's, and other SLM programmes,' platform for standard reporting and impact assessment. This can be an open access platform, building on existing wealth of knowledge, with attractive and user-friendly output formats. Such a platform facilitates upscaling of SLM options, the building of partnerships and synergies of experts and institutions, and the harmonisation of efforts at all levels.

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Further Reading:

Reed MS et al. (2011) Knowledge management for land degradation monitoring and assessment: an analysis of contemporary thinking. *Land Degradation & Development*

Evely A, Fazey I, Reed MS, Stringer LC (under review) Designing knowledge exchange for resilience: how people view and construct knowledge matters. Ecology & Society

The Sustainable Learning project is funded by the Rural Economy & Land Use and Living with Environmental Change programmes. The DESIRE project (2007-2012) is funded by the European Commission, VI Framework Program, 'Global Change and Ecosystems' and brings together the expertise of 26 international research institutes and non-governmental organisations (NGOs).

www.sustainablelearning.org.uk

http://www.desire-project.eu

http://www.wocat.org/

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