RESEARCH PROGRAM ON
Dryland Systems

Publication Review: Lessons learned in sustainable land management in drylands

Submitted by Claudio Zucca on June 13, 2016

Seedlings at a tree nursery in Burkina Faso. Photo Credit: Cheikh Mbow/ICRAF

It's now a well-established fact that land degradation costs the world an estimated US$40 billion annually, according to **FAO** and the **UNCCD**. This figure does not take into account other hidden costs associated with the increased use of fertilizers, the loss of biodiversity and the rapid disappearance of unique landscapes. Extreme weather conditions such as drought and floods, a changing and more variable climate, and the unsustainable use of the natural resources are amongst complex factors that drive land degradation. This in turn negatively affects land productivity, food security, socio-economic stability, health and wellbeing, and the provision of other ecosystem goods and services for billions of people worldwide. In drylands, these negative effects are felt ever more strongly given the already limited natural resources that characterize these regions.

Last year, 195 signatory countries to the United Nations Convention to Combat Desertification (**UNCCD**) agreed in Ankara to set a new environmental target to achieve "Land Degradation Neutrality" by 2030. The concept had already been endorsed by UN General Assembly a month earlier in New York as part of the 2030 Agenda for Sustainable Development Goals (**SDG**) and reflected in SDG 15 for Life on Land. This landmark agreement commits countries, albeit on a voluntary basis, to restore or rehabilitate degraded lands every year and sets in motion a framework whereby this target might be achieved.

The achievement of a degradation-neutral World by 2030 is a huge challenge requiring effective and well-coordinated efforts on the part of many stakeholders, which must be supported by appropriate assessment and monitoring strategies. To date, interventions to halt or reverse land degradation, undertaken at national scales, have often been fragmented or affected by poor integration and limited assessment of impact. The effective scaling up of sustainable land management and restoration practices is vital to achieving this target. Scientific reviews of existing knowledge – both indigenous and technical, and global datasets such as the one amassed by the World Overview of Conservation Approaches and Technologies (**WOCAT**) – which is a top global database recommended by the UNCCD, constitute an important asset that the international community can benefit from.

Therefore, a team of international scientists from several research centers set out to conduct a comprehensive review of scientific papers, as well as case studies from the WOCAT database, in order to:

Document and review best practices of sustainable land management in drylands, and to

Identify the critical success factors for scaling up these practices in an effort to contribute to the wider UNCCD endeavor to achieve environmental sustainability and eventually land degradation neutrality.

The review paper describes and outlines the multidimensional impacts on the overall ecosystem services that sustainable land management strategies, technologies and approaches have under varying natural and social contexts. A typology of sustainable land management interventions and systems is targeted, particularly addressing water and soil management and the rehabilitation of ecosystem services in croplands, rangelands, forests, and coastlands.

What we discovered from this **comprehensive review** is that there are many instances of effective biophysical land restoration or rehabilitation measures in small-scale environmental experiments and scientific projects. However, circumstances such as poverty, weak institutions and policies, or inefficient uptake of scientific knowledge and adaptation can hinder the effective upscaling of such measures, and the long-term maintenance of proven sustainable use of soil and water.

The analysis of diverse natural and social contexts provided a wide perspective for understanding the multifaceted impacts of sustainable land management and the factors that influence the process of effective upscaling.

The main take-way message from our study is that strategies to enhance voluntary adoption by farmers are crucial and require strong community engagement. The provision of the right socio-economic incentives and involvement of farmers and communities from the very first stage of the intervention are key ingredients to scaling up sustainable land management practices, and to monitoring and maintaining these practices in the long run.

Beyond the technical and the socio-economic aspects of sustainable land management, an enabling environment with strengthened institutions and more effective policies in place is crucial for successful adoption. This constitutes the fundamental basis upon which national and local governance structures can promote and

implement well-informed land use decisions. Ultimately, the most effective policy tool for successfully addressing land degradation through the adoption of sustainable land management practices and technologies is public education.

About the author

Dr. Claudio Zucca, ICARDA's Soil Conservation/Land Management Specialist, Integrated Water and Land Management and Ecosystems Program.

Acknowledgment

This research was supported by the EU-funded COST Action ES1104, and the CGIAR Research Programs on Dryland Systems and Water Land and Ecosystems (WLE), with knowledge inputs from the World Overview of Conservation Approaches and Technologies (WOCAT). WOCAT is an established global network which supports innovation and decision-making processes in Sustainable Land Management (SLM).

References

Marquez, M. *et al* (2016). Multifaceted Impacts of Sustainable Land Management in Drylands: A Review. *Sustainability. 8.* 177. doi:10.3390/su8020177

Tags:

- dryland systems- land degradation- World Day to Combat Desertification

- CGIAR website

BLOG CATEGORIES

RECENT NEWS

TAGS

dryland systems climate change drylands land degradation gender food security agriculture sustainable land management SDGs resilience Central Asia Youth

More

Led by:

Partners: