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Author: Fleskens, Luuk

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Sustainable Land Management (SLM) in Practice in the Kagera Basin: Lessons Learned for Scaling Up at Landscape Level. By FAO

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Luuk Fleskens
luuk.fleskens@wur.nl

Department of Soil Physics and Land Management, Wageningen University and Research, Wageningen 6700 AA, The Netherlands

This book, documenting lessons learned from the Kagera Transboundary Agro-ecosystem Management Project (Kagera TAMP), aims to provide guidance on strategies for scaling up sustainable land and water management techniques at farm, catchment, and landscape scales, using a bottom-up approach integrating both local stakeholder and scientific knowledge. The Kagera river basin is shared by Burundi, Rwanda, Tanzania, and Uganda, all of which were covered by the project; the book includes case studies from across the 4 countries. The Kagera basin encompasses various agroecologies, including extensive agropastoral systems, intensive mixed banana and annual cropping systems, and mixed coffee-farming systems, as well as natural and planted forests. Apart from documenting experiences with approaches to scale up sustainable land management (SLM), the book also seeks to identify specific technologies to enhance productivity and reduce climate-related crop and livestock production risks, which were adapted and tested in these agroecologies. The authors envision that the on-the-ground experiences documented in the book will inspire and assist other project and program designers in planning restorative soil and agroecosystem management initiatives.

The book is organized around 5 themes: (1) the farmer field schools (FFS) approach for learning and successful adaptation of SLM technologies; (2) catchment planning and local governance for integrated land resources management; (3) agroecosystem management for multiple benefits; (4) diagnostics and impact assessment at farm household, catchment, and ecosystem scales; and (5) inter-sectoral cooperation, planning, and policy for addressing transboundary land resources management. The preface, essentially introducing the rationale for the book, lists the key challenges for promoting and scaling up SLM experienced during the project, and how they were overcome through an 8-point SLM strategy. The book's 5 themed sections document this experience. Each section consists of a series of short chapters documenting case studies or experiences. These are placed in context by introductory and concluding chapters that enable the reader to grasp the main lessons and pick the key chapters to read depending on their point of interest. The book also provides a helpful glossary of key terms.

The first theme expounds experiences with FFS as a vehicle to increase the capacity and knowledge of stakeholders at all levels to promote SLM or SLaM—for sustainable land and agroecosystem management—as used extensively throughout the book to emphasize integrated agroecosystem management. FFS positions local stakeholders as active agents engaging in adaptive learning to overcome specific challenges they encounter. Various examples are provided of the implementation of FFS, with emphasis alternating between improved technologies validated through participatory testing and social mechanisms to facilitate and spread adoption of such practices. It becomes clear that an FFS approach tailors knowledge and technology development to specific groups of interest (sometimes within the same region) and therefore needs careful planning. Prospects of awareness raising through creation of a common vision and transformation of FFS groups into cooperatives are interesting outcomes from the FFS approach.

The second theme zooms out to the catchment level. Project activities started with an assessment of land resources status and threats in intervention areas. Entry points for the organization of the process differed between countries and followed participatory integrated watershed management (in microcatchments) or participatory village land use planning approaches. A key element of the catchment approach was the implementation of participatory land degradation assessments using the FAO Land Degradation in Drylands (LADA) approach. The 6 case studies present the key problems and interventions in the project areas. The processes that led to the interventions are less well covered, with the exception of the Ugandan case study, which provides a rich overview of the process. Some pathways to concrete microcatchment-level outcomes are also presented, such as the stabilization of river banks with bamboo in Burundi.

The third theme covers the key knowledge gap of insufficient data and knowledge on the short-, medium-, and long-term benefits from SLM practices at farm and wider catchment scale identified at the outset of the project. Highlighting the multiple ecosystem services supported by enhanced agroecosystem management, the case studies focus on agroforestry, improved cook stoves, erosion control, and soil fertility management practices. Most benefits are just described, with data restricted to activity monitoring of the number of areas treated, trees planted, etc. The Rwandan case includes the greatest quantification but still does not address the knowledge gap satisfactorily. The Ugandan case attempts to estimate long-term carbon sequestration benefits, but the reliability of model results is unknown. The conclusions to the theme also present requirements for a payment for watershed services scheme based on

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downstream benefits of improved land management upstream, but this has been neither implemented nor piloted.

The fourth theme details the deployment of several tools, such as the above-mentioned LADA methodology and World Overview of Conservation Approaches and Technologies (WOCAT) mapping that were implemented in the participatory processes described in themes 1 and 2 as well as impact assessment tools, such as cost–benefit analysis and the FAO EX-ACT tool, to estimate project-wide climate change mitigation benefits. The degradation mapping tools were found useful for guiding interventions and facilitated uptake of technologies—if targeted stakeholders took part in the process and were sufficiently trained. The cost–benefit analysis of a single technology—contour bunds stabilized with lemon grass, pineapples, mulch, and farmyard manure—is not supported by observed productivity data and signals a lack of data on the temporal evolution of benefits. It therefore merely serves to illustrate the high upfront costs for land users in adopting the technology and reiterates the need for long-term monitoring of impacts.

Finally, the fifth theme looks at transboundary dimensions of land resource management, which are mainly related to cattle trekking for various purposes. The 3 chapters in this theme present findings from studies looking into the main conflicts arising and opportunities for addressing them through improved pasture management, harmonization of policies and rules, and conflict resolution approaches.

The conclusions stress the similarity of findings between the Kagera TAMP project and wider SLM programs in the region. This seems to suggest that the wider community of project and program planners targeted by the book, at least those in the region, are already aware of the lessons. From a personal perspective, I very much welcome the documentation of project lessons, as this is often not done, and seldom done in a dedicated book. As a researcher, however, I miss a stronger evidence base for claims made and see a continuing gap in data and knowledge of impacts of SLM technologies. A stronger engagement of academics in participatory experimentation could help fill this gap. For practitioners, the know-how question might not yet be fully clear after reading the book, but they will find rich materials on how approaches were tailored to national institutions and policies, and how location-specific technologies were selected and implemented. Above all, the book visually testifies to the project outcomes through superb photography.