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# Greening The Sahel Land Restoration In West Afric

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Politics, Property and Production in the West African Sahel

The Grazing Land Ecosystems of the African Sahel

Achieving Sustainable Natural Resource Management in the Sahel After the Era of Desertification

Biodiversity and agriculture

Greening for the Greater Good

Tony Rinaudo

The End of Desertification?

Informing Future Interventions for Scaling-up Sustainable Land Management

Evaluation of the project "Action Against Desertification in support of the implementation of the Great Green Wall for the Sahara and the Sahel Initiative, the United Nations to Combat Desertification and

Drought action plans in Fiji and Haiti, and South-

Green jobs in agrifood systems

Monitoring Project Impact on Biomass Increase in the Context of the Great Green Wall for the Sahara and Sahel Initiative in Senegal

The Rehabilitation of the Delta of the Senegal River in Mauritania

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Restoration in Action Against Desertification

## **HOLMES CANTRELL**

### Politics, Property and Production in the West African Sahel

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| VII Abbreviations and Acronyms AVHRR Advanced Very High Resolution Radiometer CILSS Comite Inter-Etats de Lutte contre la Secheresse au Sahel |     |

CIPEA Centre International pour l'Elevage en Afrique CNRS Centre National de la Recherche Scientifique CP Crude Protein (N x 6).  
The Grazing Land Ecosystems of the African Sahel BoD – Books on Demand

The review was conducted with the aim to provide guidance for future engagement/investments, in particular in the context of recent AU declarations on agriculture and on land restoration by NEPAD, GEF, TerrAfrica, the Great Green Wall Initiative for the Sahel and Sahara (GGWISS), UN agencies and other donors. This paper provides an abridged summary of the findings for easier access by country policy / decision makers, agencies, development partners and donors, as a basis for informing future interventions for scaling-up sustainable land management (SLM).  
*Achieving Sustainable Natural Resource Management in the Sahel After the Era of Desertification* Springer

The fact that approximately one-third of the world's land mass is arid desert may be congenial for the camel and the cactus, but not for people. Nevertheless, well over half a billion people, or 15% of the world's population live in arid desert areas. If the world's population were distributed evenly over the land surface, we would expect to find about 30% of the population inhabiting arid desert areas. Does the fact that 'only' 15% of the world's population live in an arid desert environment reflect the harshness of the environment? Or is it a testimony to the adaptability and ingenuity of mankind? Do we view the glass as half-full? Or half-empty? The contributors to *Desert Development: Man and Technology in Sparselands* adopt the position that the cup is half-full and, in fact, could be filled much more. Indeed, many arid desert zones do thrive with life, and given appropriate technological development, such areas could support even greater populations. While the dire Malthusian prediction that rapid world population growth exceeds the carrying capacity of existent resource systems has gained popularity (typified by the 1972 Club of Rome book, *Limits to Growth*), there is a growing body of serious work which rejects such pessimistic 'depletion' models, in favor of models which are mildly optimistic.  
*Biodiversity and agriculture* International Water Management

Institute (IWMI). CGIAR Research Program on Water, Land and Ecosystems (WLE).

The author discusses various successful development projects in Africa, with particular reference to food production and conservation of natural resources.

**Greening for the Greater Good** Food & Agriculture Org.

By using a multimethod strategy, we seek to generate more rigorous evidence on landscape restoration and its impacts at the household level. Using pre-restoration remote-sensing data, a machine-learning algorithm is used for the identification of similar pieces of land to Action Against Desertification (AAD) restoration sites. Comparison households were then selected from communities bordering these sites through a replication of the AAD targeting process. Finally, the impact analysis is based on propensity score adjustment techniques, applied to survey data. Overall findings suggest that participation in landscape restoration influenced household-livelihood strategies towards climate-resilient options, including a reduction of crop sales accompanied by an increase in the commercialization of livestock and livestock by-products. Households also planted more trees on their individual land, because of the restoration of communal and public lands. While this occurred without harming food security, we don't observe a substantial increase in food security within treatment households. This suggests that food security support could be strengthened as part of restoration activities and/or that impacts of opportunity-led diversification may need a longer period to accrue. Larger impacts observed within the early takers of the programme reinforce these conclusions. Overall, the analysis also provides an innovative approach to ex-post evaluation settings.

Tony Rinaudo IUCN

Through a number of case studies from the West African Sahel, this book links and explores natural resources management from the perspectives of politics, property and production.  
*The End of Desertification?* Springer Science & Business Media  
This Unasylva issue aims at showcasing forest and landscape restoration (FLR) opportunities and recent developments that

have the power to upscale restoration, in order to achieving the Bonn Challenge pledge and other national and international commitments (Sustainable Development Goals (SDGs), the Convention for Biological Diversity (CBD) Post-2020 Agenda, the United Nations Convention to Combat Desertification (UNCCD) Land Degradation Neutrality, Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC)) and addressing the needs of the UN Decade 2021-2030 on Ecosystem Restoration. The content addresses thematic of relevance to various audiences: i) flagship restoration initiatives that differ from the so-called “business-as-usual” as they channel more funds, better empower local stakeholders and provide enhanced technical assistance through partners’ coalitions; ii) technical advances that can spread FLR and have a huge potential to be mainstreamed for different reasons (low cost, adaptability, relevance to many ecosystems and contexts, ease of implementation...); iii) the enabling factors for restoration, i.e. coordination, policy environment, resources, knowledge and capacities, as these are the enabling conditions for action to take place on the ground.

*Informing Future Interventions for Scaling-up Sustainable Land Management* World Scientific

This edition of Nature & Faune journal explores the science and innovations (technical, social and policy) that can support the achievement of the African dream of restoring 100 million hectares of its degraded land. Articles in this edition share experiences on challenges, opportunities and successful restoration, including farmer managed natural regeneration, improved management of smallholder woodlots, reforestation, evergreen agriculture with intercropped trees, and associated sustainable land management practices such as water harvesting and erosion control. Africa’s Great Green Wall is presented in this edition as a transformative model for rural communities’ sustainable development. In particular the lessons learned from the “Action Against Desertification” programme funded by the European Union and implemented by FAO with partner countries and organizations, are discussed, paving a way towards the implementation of African Forest Landscape Restoration Initiative. Initiatives to address land degradation and desertification trends in Africa, promote sustainable land management, and restoration of degraded forests and landscapes include Africa’s Great Green

Wall initiative, and 2016’s African Forest Landscape Restoration Initiative – AFR100. Most of the articles dwelt on how efforts to this end are being pursued.

**Evaluation of the project "Action Against Desertification in support of the implementation of the Great Green Wall for the Sahara and the Sahel Initiative, the United Nations to Combat Desertification and Drought action plans in Fiji and Haiti, and South-** Food & Agriculture Org.

This open access book on the state of peacebuilding in Africa brings together the work of distinguished scholars, practitioners, and decision makers to reflect on key experiences and lessons learned in peacebuilding in Africa over the past half century. The core themes addressed by the contributors include conflict prevention, mediation, and management; post-conflict reconstruction, justice and Disarmament Demobilization and Reintegration; the role of women, religion, humanitarianism, grassroots organizations, and early warning systems; and the impact of global, regional, and continental bodies. The book’s thematic chapters are complemented by six country/region case studies: The Democratic Republic of Congo, Rwanda, Sierra Leone, Sudan/South Sudan, Mozambique and the Sahel/Mali. Each chapter concludes with a set of key lessons learned that could be used to inform the building of a more sustainable peace in Africa. The State of Peacebuilding in Africa was born out of the activities of the Southern Voices Network for Peacebuilding (SVNP), a Carnegie-funded, continent-wide network of African organizations that works with the Wilson Center to bring African knowledge and perspectives to U.S., African, and international policy on peacebuilding in Africa. The research for this book was made possible by a grant from Carnegie Corporation of New York.

**Green jobs in agrifood systems** Nordic Africa Institute  
Practical examples and data show how past development strategies have contributed to the deteriorating socio-economic and environmental conditions of the Sahel zone of Africa. It also shares some of the success stories, recommending new development approaches and presenting some alternative ways to deal with the present Sahelian situation

**Monitoring Project Impact on Biomass Increase in the Context of the Great Green Wall for the Sahara and Sahel Initiative in Senegal** Springer Science & Business Media

This book presents an important discussion on the

implementation of sustainable soil management in Africa from a range of governance perspectives. It addresses aspects such as the general challenges in Africa with regard to soil management; the structural deficiencies in legal, organizational and institutional terms; and specific policies at the national level, including land cover policies and persistent organic pollutants. This fourth volume of the International Yearbook of Soil Law and Policy is divided into four parts, the first of which deals with several aspects of the theme “sustainable soil management in Africa.” In turn, the second part covers recent international developments, the third part presents regional and national reports (i.a. Mexico, USA and Germany), and the fourth discusses cross-cutting issues(i.a. on rural-urban interfaces). Given the range of key topics covered, the book offers an indispensable tool for all academics, legislators and policymakers working in this field. The “International Yearbook of Soil Law and Policy” is a book series that discusses central questions in law and politics with regard to the protection and sustainable management of soil and land – at the international, national and regional level.

**The Rehabilitation of the Delta of the Senegal River in Mauritania** Univ of Wisconsin Press

The purpose of this report is to assess the current implementation of forest and landscape restoration (FLR) in Africa. It presents the context for FLR on the African continent, highlights major FLR initiatives, and provides an overview of FLR in Africa at the start of the UN Decade on Ecosystem Restoration (2021–2030). It identifies key challenges, opportunities, actors and processes, illustrated with some case studies. Data collection was both primary (interviews) and secondary (extensive desk research). The report contributes to tracking progress on the implementation of AFR100 and other FLR initiatives in Africa on the ground. It provides a baseline for the UN Decade on Ecosystem Restoration and is expected to be updated at regular intervals. The report is prepared under the jointly implemented regional technical cooperation programme by FAO Regional Office for Africa (RAF) and the African Union Development Agency-NEPAD (AUDA-NEPAD) “Support to the implementation and monitoring of the African Forest Landscape Restoration Initiative (AFR100)” and in close collaboration with AFR100 Management Team members and partners. It is also responding to the recommendation of the 22nd Session of FAO African Forestry and

Wildlife Commission<sup>1</sup>, held in March 2020 in South Africa. The report is structured as follows: Chapter 1 introduces the importance of Africa's forests and tree-based landscapes and to the challenges they and their people face, as well as the relevance of restoration and the global policy context. The next chapter presents an overview of FLR and restoration more generally. The third chapter provides a more detailed overview for Africa's subregions of the current status of forests with examples of FLR initiatives (or other relevant ones that may not have the FLR label but are in fact aligned with FLR). Chapter 4 then reviews some key success factors for FLR in Africa. Chapter 5 presents opportunities going forward and remaining challenges. The last chapter is more forward-looking and speculative, highlighting potential priorities for FLR in the UN Decade on Ecosystem Restoration.

*Survival in the Sahel* Food & Agriculture Org.

*Land Restoration: Reclaiming Landscapes for a Sustainable Future* provides a holistic overview of land degradation and restoration in that it addresses the issue of land restoration from the scientific and practical development points of view. Furthermore, the breadth of chapter topics and contributors cover the topic and a wealth of connected issues, such as security, development, and environmental issues. The use of graphics and extensive references to case studies also make the work accessible and encourage it to be used for reference, but also in active field-work planning. *Land Restoration: Reclaiming Landscapes for a Sustainable Future* brings together practitioners from NGOs, academia, governments, and the United Nations Convention to Combat Desertification (UNCCD) to exchange lessons to enrich the academic understanding of these issues and the solution sets available. Provides accessible information about the science behind land degradation and restoration for those who do not directly engage with the science allowing full access to the issue at hand. Includes practical on-the-ground examples garnered from diverse areas, such as the Sahel, Southeast Asia, and the U.S.A. Provides practical tools for designing and implementing restoration/re-greening processes.

*The Untapped Potential of Great Green Wall Value Chains*  
Springer

The question in the title of this book draws attention to the shortcomings of a concept that has become a political tool of

global importance even as the scientific basis for its use grows weaker. The concept of desertification, it can be argued, has ceased to be analytically useful and distorts our understanding of social-environmental systems and their resiliency, particularly in poor countries with variable rainfall and persistent poverty. For better policy and governance, we need to reconsider the scientific justification for international attempts to combat desertification. Our exploration of these issues begins in the Sahel of West Africa, where a series of severe droughts at the end of the 20th century led to the global institutionalization of the idea of desertification. It now seems incontrovertible that these droughts were not caused primarily by local land use mismanagement, effectively terminating a long-standing policy and scientific debate. There is now an opportunity to treat this episode as an object lesson in the relationship between science, the formation of public opinion and international policy-making. Looking beyond the Sahel, the chapters in this book provide case studies from around the world that examine the use and relevance of the desertification concept. Despite an increasingly sophisticated understanding of dryland environments and societies, the uses now being made of the desertification concept in parts of Asia exhibit many of the shortcomings of earlier work done in Africa. It took scientists more than three decades to transform a perceived desertification crisis in the Sahel into a non-event. This book is an effort to critically examine that experience and accelerate the learning process in other parts of the world.

*Moving forward* Food & Agriculture Org.

The Australian agronomist Tony Rinaudo revolutionized reforestation in Africa with Farmer Managed Natural Regeneration (FMNR). His method is based on deploying tree stumps and roots that still grow even in degraded landscapes: thanks to the protection and care of the shoots, the original tree population can be regenerated without major financial costs. The method is now successfully applied in at least 24 African countries. Where the desert was still expanding 20 years ago, farmers reforest large areas with FMNR: in Niger alone seven million hectares of land were already restored in this way. Up to 700 million people will possibly be obliged to leave their homelands during the next three decades because of increasing desertification in the landscapes where they live. In the opinion of scientists, there is only one hope: to convince the local farmers of 'sustainable land

management'. Tony Rinaudo believes that with FMNR he has found the appropriate method for such management - and just in time to stop, or even to be able to reverse the destruction of livelihoods.

*Forest Landscape Restoration* Food & Agriculture Org.

This report analyses the factors which motivate land use by rural populations and provides a context for any policy or strategy which addresses natural resource conservation in the Sahel. The author suggest that production systems in the Sahel have reached or even exceeded their capacity to respond to the needs of a growing population and further that development aid has only had a negligible impact on the trend to over exploit. It offers a different perspective on issues concerning the Sahel.

*Land Restoration* Food & Agriculture Org.

Examining the conditions for land occupation and natural resource use in the Sahel, this book offers a conceptual and practical approach to social organization and environmental management in the face of rapid environmental change.

*The "greening" of the Sahel* Food & Agriculture Org.

This book provides a coherent review of NDVI including its origin, its availability, its associated advantages and disadvantages, and its possible applications in ecology, environmental monitoring, wildlife management, and conservation.

*Desert Development* Academic Press

Populations in the G5 Sahel countries are growing rapidly. Given these large cohorts of young populations, over the next five years 11.4 million youth will turn 16 years old, and most will then start to seek jobs in the region. Although the countries are urbanizing, meaning that future economic growth may be faster in industry and services than in agriculture, in the short and medium run the bulk of new jobs are likely to be created in the agriculture sector and its supply chains. For the five countries of the G5 Sahel - Burkina Faso, Chad, Mauritania, Mali and Niger - this study aims to address the following questions: i) What employment can be created for youth, as agriculture and the agrifood value chains become environmentally sustainable as part of a rural green transition?; and ii) What policies, programmes and investment are needed to create these jobs and ensure that young women and men can access them?

*Agroenvironmental transformation in the Sahel: Another kind of "Green Revolution"* IUCN

The “Action Against Desertification in support of the implementation of the Great Green Wall for the Sahara and the Sahel Initiative, the UNCCD action plans in Fiji and Haiti, and South-South Cooperation in the African, Caribbean and Pacific Group of States” project (AAD) worked with eight countries in Africa, the Caribbean and Asia to tackle the detrimental social, economic and environmental impacts of land degradation and desertification (2014 to 2020). It was implemented by the Food and Agriculture Organization of the United Nations (FAO) and partners, with majority of funding from the European Union and

co-funding from diverse partners. The project contributed to improving the conditions and productivity of agrosilvipastoral landscapes and the capacity to plan land restoration and manage forest and land resources. Livelihood improvements and concrete positive incidence on household income, food security, crops and milk production, and community interactions. It increased awareness and support policy makers developing intervention strategies that address D/LDD. The large-scale, heavy machinery-based technical intervention logic was found appropriate to address desertification/land degradation and drought (D/LDD) in specific conditions and countries. The geospatial study estimated

the contribution of Action Against Desertification (AAD) to carbon sequestration to be between 384 000 and 1.27 million tonnes of carbon sequestered. The evaluation recommendations include further investments in training; building awareness and addressing climate change and land degradation; increasing political and policy coherence; guaranteeing sustainability and buy-in from beneficiaries; building in sustainable financing mechanisms at all stakeholder levels; increasing opportunities; and developing non-timber forest product (NTFP) value chains to create and develop viable markets for the products.