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World Development Vol. 54, pp. 68–80, 2014

0305-750X/$ - see front matter

http://dx.doi.org/10.1016/j.worlddev.2013.07.006

Integrated Landscape Initiatives for African Agriculture, Development, and Conservation: A Region-Wide Assessment

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Summary. — Recent years have witnessed increased investment in African rural landscapes for agriculture and food security, poverty alleviation, climate change adaptation, and ecosystem conservation. While such investments historically tended to be made independently under sectoral programs, a new wave of integrated landscape initiatives (ILIs) is promoting integrated, multi-objective management of rural landscapes. We surveyed leaders and managers of 87 ILIs in 33 African countries to provide the first region-wide portrait of contexts, motivations, design, participation, and outcomes of such initiatives. Results suggest that ILIs are promoting "multi-functionality" of rural regions, while aiding stakeholders in mediating tradeoffs and synergies among multiple outcomes.

Key words — Africa, landscape, ecosystem management, agriculture, rural development, governance

1. INTRODUCTION

In recent years, many African nations and the international community have begun to place increased emphasis on agriculture and rural land use as important domains for investment, economic development, and mitigation of poverty and conflict. To a growing degree, the discourse around this shift recognizes rural landscapes as the nexus where the linked challenges of food security, energy production, economic development, ecosystem conservation, and climate change converge. While sectoral approaches to addressing these problems are still common, single-objective strategies are now increasingly seen as futile or unsustainable, while awareness about potential synergies is growing. For instance, concepts such as the Green Economy (UNEP, 2011)—supported by several global assessments and initiatives (e.g., IPBES, 2012; TEEB, 2010; WAVES, 2012)—recognize the importance of healthy ecosystems in sustaining long-term economic growth, and therefore seek to manage natural capital as part of development planning and policy. Similarly, best practice in agricultural and rural development is increasingly recognizing the centrality of climate change adaptation and natural resource management in ensuring resilient rural livelihoods, as embodied in contemporary concepts such as "climate-smart agriculture" (FAO, 2011).

At a local level, these considerations create a mandate to manage rural landscapes in ways that achieve greater multifunctionality relative to the outcomes listed above. Nearly a quarter billion Africans are currently undernourished, while grain yields in Africa are a mere 37% of those achieved in Asia (FAO, 2012; USDA, 2010). Yet, while the need to increase agricultural productivity in Africa is clear, there is a growing body of opinion that the Green Revolution trajectory of Asia and Latin America from the 1960s through the 1990s will not provide the multiple benefits that agriculture must deliver in Africa (DeFries & Rosenzweig, 2010). Instead, there are calls for development approaches that focus more strongly on social and environmental outcomes by intensifying food production in ways that sustain the natural resource base and enhance agroecosystem and livelihood resilience (De Schutter, 2010; WRI, 2008). However, while more holistic farm-level solutions are important, they rarely are sufficient, given that key ecosystem services underpinning human wellbeing and economic activity often function at larger scales. Landscape, watershed, and sub-national scales are also the level at which competition and conflict among different sectors or

* The authors thank the survey respondents for taking the time to share information about their experiences with integrated landscape initiatives, and J. Buchanan, S.J. Scherr, and W. Willemen for input on the project and manuscript. We acknowledge financial support from TerrAfrica and USAID. This study is a contribution of the Landscapes for People, Food and Nature Initiative (http://landscapes.ecoagriculture.org). Required disclaimer: "This project was made possible by the generous support of the American people through the United States Agency for International Development (USAID) under the terms of Cooperative Agreement No. RLA-A-00-07-00043-00. The contents are the responsibility of the Africa Biodiversity Collaborative Group (ABCG) and do not necessarily reflect the views of USAID or the United States Government. This publication was produced by the authors on behalf of ABCG." Final revision accepted: July 23, 2013.

stakeholders over scarce resources may arise. For instance, water resource allocation may pit upstream agricultural users against downstream hydropower, urban, or industrial water users. Similarly, there are many documented instances of land allocation processes in which one sector (e.g., agriculture, forestry, or mining) develops new land-use plans or grants land concessions to investors without due regard to existing conservation plans, traditional land use practices, or other conflicting designations.

In this context, many contend that integrated (i.e., multi-objective, cross-sectoral) management of rural landscapes will frequently be the best—if not the only—way to ensure that human needs are met, and conflict is mediated and mitigated, as growing human demands for food, bio-energy, and ecosystem services collide with limitations on land, water, and other natural resources (LPFN, 2012; Sayer et al., 2013). Yet, current understanding of such integrated landscape approaches is fragmentary, often anecdotal, and spread widely across several academic fields and communities of practice. To help fill this gap, we conducted a systematic assessment to take stock of the practice of integrated landscape management in sub-Saharan Africa. This assessment provides a region-wide synthesis of characteristics, patterns, outcomes, and lessons learned from past and current experience.

(a) *Prior experience with landscape approaches in Africa*

Landscape management approaches are not entirely new to Africa, but the scope, breadth, and design of such approaches has progressively shifted in some important ways. Many of the earliest integrated landscape management efforts in Africa emerged from the conservation sector, in response both to the emerging sciences of ecosystem management and landscape ecology (Noss, 1983) and to a recognition of the linkages between the livelihood needs of local communities and key drivers of biodiversity loss. The first generation of "integrated conservation and development projects" (ICDPs), from roughly 1985 to 2000, included some landscape scale projects. However, the ICDP paradigm has been criticized for having weak logical models and token levels of local participation (McShane & Wells, 2004). In addition, improvements to agricultural production and food security were rarely included as major objectives of ICDPs; rather, because of its apparent connections to deforestation and land degradation, agriculture was more commonly viewed as a conservation threat to be mitigated. In the past decade, however, the conservation sector has increasingly begun to target its work to landscapes where agriculture is an important land use, with the aim of simultaneously addressing conservation and livelihood needs through ecosystem restoration, reduction of human-wildlife conflict, enhancement of ecosystem services, and climate change adaptation and mitigation activities (e.g., African Wildlife Foundation, 2013; Egoh et al., 2012).

Key antecedents in the realm of agricultural development can also be traced back a few decades. Beginning in the 1970s and 1980s, methodologies such as farming systems, integrated rural development, and *gestion de terroirs* in West Africa sought to address agricultural development in a more holistic and often participatory manner (Batterbury, 1998; Cleary, 2003). But these approaches were generally limited to farm or village scales and did not address broader ecosystem management issues or their feedbacks to food security and rural livelihoods. A later concerted attempt to align food production, livelihood security, and ecosystem management was the cross-cutting program on Integrated Natural Resource Management (INRM), launched within the Consultative Group on International Agricultural Research following its 1998 systemwide review. INRM research attempted to bridge the need for communities and other actors to devise suitable localized solutions, with the need to achieve broader ecosystem management goals (Campbell & Sayer, 2003). But translating INRM research into action proved challenging, as the development community found INRM concepts complex to manage and expensive to implement through conventional projects. Nonetheless, there have been some compelling examples of INRM over the past decade, which illustrate the potential of this approach (German, Mowo, Amede, & Masuki, 2012). Now, with new technological tools (such as low-cost remote sensing imagery, spatial analysis, and decision support methods), improved understandings of effective multi-scale participatory governance, and new commitments by donors and governments to address multiple interests in rural landscapes, the time for widely applying INRM-type approaches may finally be ripe.

Indeed, in just the past few years, integrated landscape thinking has begun to be incorporated into mainstream development practice and policy in Africa, albeit still on a limited basis. For instance, one of the four core "pillars" of the Comprehensive African Agricultural Development Programme (CAADP) is sustainable land and water management—an integrative, ecosystem-based approach to agricultural development (World Bank, 2008). This pillar is being implemented in 28 African countries with support from the Global Environment Facility through the TerrAfrica platform, with increasing emphasis on landscape approaches. At a national level, efforts are now underway to mainstream multi-objective landscape restoration strategies in Rwanda and in several of the Sahelian countries through the Great Green Wall initiative. Green Economy policy frameworks that address rural landscape management are being designed in several African countries, while Green Growth approaches to agricultural corridor development—oriented around integrated landscape management—have also recently been proposed (Milder, Buck, Hart, & Scherr, 2013; UNEP, 2013). Within rural development organizations, concepts of ecosystem-based resilience, which tend to move development in the direction of landscape approaches, are gaining currency. These have already been institutionalized within some poverty alleviation organizations, such as the International Fund for Agricultural Development (IFAD, 2013) and CARE (CARE, 2013). However, beyond certain policy circles and international organizations, these ideas have not yet been widely diffused, and are little in evidence in most government or local nongovernmental organization (NGO) extension programs.

(b) *Integrated landscape initiatives: an emerging synthesis*

The simultaneous surge of interest in landscape approaches from the conservation, agriculture, policy, and economic development domains reflects a new appreciation of rural landscapes as a critical nexus at which to understand and manage synergies and tradeoffs among multiple objectives at multiple scales. The factors that have driven this convergence—including climate change, increased land and water scarcity, renewed concern about food security and interest in agricultural investment, and increasingly sophisticated understandings of the role of ecosystems in human wellbeing—are likely to persist if not strengthen in the coming years. Now is therefore a critical moment to take stock of landscape approaches across sub-Saharan Africa, assess patterns and trends, synthesize best practices and lessons learned, and make this information available to the designers, implementers, and supporters of the next generation of activities.

In this study, we inquire systematically into the ways in which "integrated landscape initiatives" (ILIs) are being developed