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## **ABSTRACT**

Perspectives on and prescriptions for African rural development are shifting rapidly, fueled by new interest in agricultural investment, new efforts to address widespread land degradation, and the new realities of climate change. Agriculture and ecosystem conservation in Africa have traditionally been addressed through separate sectoral investments and projects. However, many now recognize that food security, energy production, economic development, biodiversity conservation, and climate change are closely linked issues. These issues converge in rural landscapes, where management decisions by diverse stakeholders dictate the degree to which there will be synergies or tradeoffs among multiple objectives, with implications for the wellbeing and resilience of rural communities. In light of this new reality, there is growing interest among policymakers, international donors, and NGOs in landscape approaches that seek to address these issues in an integrated, multi-scale, cross-sectoral manner. To date, however, understanding of landscape approaches has been fragmentary, often anecdotal, and spread widely across several academic fields and communities of practice. In this study, we survey participants in “integrated landscape initiatives” (ILIs) across sub-Saharan Africa to provide the first region-wide portrait of the contexts, motivations, design, participation, and outcomes of such initiatives. We identified 73 ILIs in 32 countries, most of which have begun in the past six years. While a high portion of the initiatives had an “entry point” in conservation or agricultural development, most were motivated by—and were investing in—the achievement of gains in all four “domains” of landscape multi-functionality: agricultural production, ecosystem conservation, human livelihoods, and institutional strengthening. Initiative outcomes were reported in 22 areas; the most prevalent included increased capacity and improved coordination for landscape planning and management; conservation of biodiversity and ecosystem services; and increased agricultural yields, household cash income, and food security. Investments in new landscape coordinating bodies and in capacity building were associated with greater numbers of positive outcomes. The results provide evidence that ILIs are indeed increasing the delivery of multiple goods and services in rural regions, and that they are helping stakeholders mediate the tradeoffs and synergies among these outcomes. Perhaps more interestingly, the findings suggest that integrated approaches may sometimes be a more effective means to achieve specific sectoral aims such as boosting agricultural production or conserving biodiversity.

**Keywords:** Africa, landscape, multi-functional, ecosystem management, agriculture, rural development, governance

## INTRODUCTION

In recent years, African policymakers 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, biodiversity conservation, ecosystem management, and climate change converge. While sectoral approaches to addressing these problems are still common, single-objective ‘solutions’ 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 major recent global assessments and initiatives (e.g., TEEB 2010, IPBES 2012, WAVES 2012)—recognize the importance of healthy ecosystems in sustaining long-term economic growth, and therefore seek to incorporate natural capital considerations into 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 multi-functionality relative to the outcomes listed above. Indeed, there is now growing consensus that agricultural modernization and rural development in Africa cannot and should not follow the same Green Revolution trajectory as it did in Asia and Latin America from the 1960s through the 1990s. Instead, there are growing calls for development approaches that focus much 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, Altieri et al. 2012). However, while more holistic farm-level solutions are important, they rarely are sufficient, given that key ecosystem services underpinning human wellbeing and economic activity are often mediated at larger scales. Landscape, watershed, and sub-regional scales are also the level at which sectoral objectives frequently clash—for instance when increased agricultural water use reduces critical flows for hydropower and urban development, or when land concessions are granted to investors without regard to protected area plans or traditional local land use patterns.

In this context, many contend that integrated (i.e., multi-objective and 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. forthcoming). Yet, 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 experience to date with integrated landscape management in sub-Saharan Africa. In this article, we report the first of two sets of results from this study, providing a region-wide synthesis of characteristics, patterns, outcomes, and lessons learned from past and current experience.

### ***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 the realization that key drivers of biodiversity loss could be

mitigated only by addressing livelihood needs of local communities. Some of the first generation of “integrated conservation and development projects” (ICDPs) from roughly 1985 to 2000 worked at a landscape scale, but this project paradigm has been widely criticized for having weak logical models and token levels of local participation (McShane & Wells 2004). In addition, agriculture and food production were rarely included as a major objectives within ICDPs, but were more commonly viewed as conservation threats to be mitigated. The closely allied concept of community-based natural resource management (CBNRM) has also sought to reconcile conservation and community development aims through management of wildlife, forests, fisheries, and other resources (Adams & Hulme 2001). 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., Rietbergen-McCracken et al. 2007, AWF 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 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, which required upscaling and outscaling (Campbell & Sayer 2004). 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. Now, with improved technological tools (such as low-cost remote sensing imagery, spatial analysis, and decision support methods for planning, monitoring and impact assessment) 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 landscape restoration (to achieve multiple objectives through inter-sectoral collaboration) 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 (UNEP 2012, Milder et al. 2012). On the part of rural development practitioners, concepts of ecosystem-based resilience, which tend to move rural development in the direction of landscape approaches, are gaining currency. These have already been institutionalized within some organizations that focus on rural poverty alleviation, such as the International Fund for Agricultural Development (IFAD 2012) and CARE (CARE

2010). However, outside of large international organizations and NGOs, these ideas have not yet been widely diffused, and are little in evidence in most government or local NGO extension programs.

### ***Prior research on related concepts***

Simultaneously, the past decade has witnessed a proliferation of interdisciplinary research on rural landscapes, examining the interplay between governing institutions, human management decisions, ecosystem dynamics, production systems (e.g., agriculture, forestry, or fisheries), and socio-cultural and economic factors. Such research has associated itself with various terms and concepts such as socio-ecological systems (Berkes et al. 2003, Folke et al. 2005), coupled human-natural systems (Liu et al. 2007), polycentric governance (Ostrom 2010). Frequently these investigations have focused on the institutional factors (e.g., governance structures, negotiation and decision making frameworks, power dynamics, and systems of rules and customs) that influence the ability of multi-stakeholder groups to manage complex landscape dynamics, leading to socio-ecological resilience, collapse, or re-organization.

Results from these prior bodies of work suggest that effective landscape-level management rarely emerges from uncoordinated action. Decentralization of land and natural resource governance systems—a common trend throughout much of Africa—may be seen as a prerequisite for landscape management. But in practice it has often failed to improve resource management or social equity because powers are not actually shifted to local decision-makers, or because decentralized governance is implemented in a nondemocratic or non-evidence-based manner (Larson & Soto 2008). Thus, it is now widely accepted that decentralization should be paired with devolution of relevant powers, together with efforts to increase institutional capacity for effective local management (Andersson & Ostrom 2008).

Yet the capacity of local governments and communities is often quite low, whereas effective landscape management entails numerous complex functions ranging from goal setting and participatory planning to conflict resolution, establishment of rules, and defining of roles for enforcement and monitoring. In this context, new synergies are most likely to emerge through multi-scale and multi-sectoral approaches in which the capacities of diverse stakeholders complement each other, but which in turn require new formal and informal coordination mechanisms. One key goal of such approaches is to build resilience and redundancy in both the social and ecological components of integrated systems such that critical functions and services are sustained in the face of gradual change or abrupt shocks, including climate change and extreme weather events (Olsson et al. 2006, Anderies et al. 2004). Such approaches also facilitate the generation and transfer of knowledge about the social and ecological systems in the landscape, making synergies more likely to emerge (Barrett 2005).

### ***Integrated landscape initiatives: an emerging synthesis***

The simultaneous surge of interest in landscape approaches from the conservation, agriculture, and policy and economic development domains—and from the research community—reflects a convergence around the understand of rural landscapes as a critical nexus at which to understand, mediate, 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 thus a critical moment to take stock of landscape approaches across sub-Saharan Africa, understand 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 and applied throughout sub-Saharan Africa to help solve the region’s complex and inter-related challenges pertaining to agriculture, environment, and rural livelihoods. We define an ILI as a project, program, platform, local initiative, or set of activities that: 1) explicitly seeks to improve food production, biodiversity or ecosystem conservation, and rural livelihoods; 2) works at a landscape scale and includes deliberate planning, policy, management, or support activities at this scale; 3) involves inter-sectoral coordination or alignment of activities, policies, or investments at the level of ministries, local government entities, farmer and community organizations, NGOs, donors, and/or the private sector; and 4) is highly participatory, supporting adaptive, collaborative management within a social learning framework.

In this context, “landscapes” typically consist of land mosaics including crop, livestock, fish, and forest production areas; grassland, woodland, or forest ecosystems; wetlands and water bodies; and human settlements and infrastructure. Formally, landscapes may be described as cohesive land areas defined by common biophysical characteristics, socioeconomic conditions, and/or political demarcations, and typically encompassing approximately 100 to 10,000 square kilometers (Forman 1995; LPFN 2012). In practice, however, many African landscapes are larger than this, as they are defined around river basins, transboundary management areas, or large forest areas. Landscape boundaries may be discrete or fuzzy, and are often defined functionally around particular management challenges (such as watershed protection) or goals (such as agricultural value chain development).

In this article, we use “integrated landscape initiative” as an umbrella term that encompasses numerous existing concepts, approaches, and communities of practice related to integrated landscape management. A recent tally counted more than 70 such approaches, including landscape restoration, biological corridors, bioregional planning, ecoagriculture, and diversified farming systems (Scherr & Shames 2012). As such, ILIs can take a wide variety of forms, while meeting the four criteria stated above. They may be driven by stakeholders internal and/or external to the landscape, and comprise new attempts at integrated landscape management as well as efforts to maintain or strengthen existing integrated land-use systems that arose spontaneously or through traditional practices but now face significant pressures or challenges.

### ***Focus of this study***

This study provides a foundational portrait of the practice of integrated landscape management in sub-Saharan Africa over the past two decades by conducting a structured survey of ILI practitioners and participants across the region. While not exhaustive, the survey takes a systematic approach to identifying, characterizing, and understanding the design and effectiveness of a large, illustrative sample of ILIs from throughout sub-Saharan Africa. This study is part of a broader set of “continental reviews” of ILIs being conducted for several of the world’s continents, following similar methodologies, as part of the Landscapes for People, Food and Nature Initiative (<http://landscapes.ecoagriculture.org>), a global effort to inform and support the effective adoption of landscape approaches to integrating agriculture, conservation, and livelihood objectives. The “Africa review” study includes this article as well as a companion paper that provides more in-depth assessment of a sub-sample of approximately fifteen ILIs across the region, based on multiple semi-structured interviews per landscape.

In this study, we posed six sets of research questions: 1) Where and in what kinds of contexts are ILIs taking place? 2) Why are such initiatives taking place, and what kinds of challenges and problems do they seek to address? 3) What kinds of investments, activities, and governance structures are included in ILIs? 4) What kinds of stakeholders are involved in ILIs? 5) To what extent were the ILIs reported to achieve positive outcomes across the key dimensions of landscape performance, including food production, livelihoods, ecosystem conservation, and human and institutional capacity? 6) What were the most and least successful aspects of each initiative, and are there discernible patterns of effectiveness across the full sample?

## **METHODOLOGY**

We used a multi-step process to identify, screen, and survey ILIs from throughout sub-Saharan Africa. First, we created a database of potential initiatives by drawing on three sources: 1) Internet keyword searches; 2) interviews with staff of civil society, international donor, and research organizations active in Africa; and 3) canvassing individuals active in the Landscapes for People, Food and Nature Initiative, which includes many leading experts on landscape approaches. (For a list of the Internet keywords used, please see the Supplemental Material.)

In creating the initial inventory, we included landscape management activities initiated by grassroots actors and local organizations, as well as those catalyzed or supported by donors, government programs, regional initiatives and platforms, civil society organizations (e.g., in the conservation or rural development sectors), and private-sector actors. We also included traditional, locally developed landscape management systems in instances there were deliberate efforts underway to maintain or adapt these systems to contemporary challenges or needs. We collected basic information on each candidate initiative—including contact information, location, timeframe of the initiative, activities and investments, and stakeholder involvement—to assess its suitability for inclusion in the full survey.

Next, we screened the initial list to eliminate any entries that did not appear to possess the key characteristics of ILIs. This screening was based on the definition of ILIs presented above, and was based on the following criteria:

1. The initiative explicitly seeks to advance goals related to food production, biodiversity or ecosystem conservation, and rural livelihoods.
2. The initiative works at a landscape scale and includes deliberate planning, policy, management, or support activities at this scale.
3. The initiative is developing or supporting multi-stakeholder processes, platforms, or institutions to guide landscape planning, investment, and management. These multi-stakeholder processes include actors from multiple spatial scales (e.g., farm, village, district, national government) and representing multiple interests or sectors (e.g., agriculture, water, forestry, environment/conservation, private business).
4. The initiative has moved beyond the concept stage and includes specific activities such as on-the-ground land use changes or the initiation of multi-stakeholder planning and negotiation processes.

After creating the final screened list of ILIs, we contacted one representative of each initiative to invite him or her to complete the survey, which we administered through the online service Survey Monkey. We selected survey respondents who were broadly familiar with each initiative and the landscape in which it is embedded, usually based on their residence or long-term work in the landscape. We also ensured that the respondents had a broad understanding of activities

and issues spanning multiple scales and sectors in the landscape. In some cases, the initially identified respondent did not meet these criteria, or was unavailable to complete the survey, in which case we identified an alternate respondent.

The survey consisted of a structured questionnaire with a combination of checkbox, multiple choice, and open ended questions. (For a copy of the survey instrument, please see the Supplemental Material.) A draft version of the questionnaire pilot tested on 15 respondents, and subsequently refined to clarify and improve several questions for the final survey instrument. The survey was offered in English and Portuguese. Survey questions focused on characterizing each ILI and its context, covering six areas, which correspond to the research questions posed above: 1) landscape location, size, population, and land use; 2) basic information about the landscape initiative, including motivations, dates, and scale; 3) activities and investments included within the initiative, in the domains of agriculture, conservation, human livelihoods, and institutional strengthening (hereafter referred to as the four “domains”); 4) participation of different stakeholder groups and sectors in the initiative; 5) self-reported characterization of the initiative’s outcomes in the four domains; and 6) most and least successful aspects of each initiative. In addition, the survey requested basic information about the respondent and his or her organization.

We analyzed the survey data to tabulate descriptive statistics and query relationships between different sets of variables. To investigate whether ILIs were indeed “integrated,” we developed indices to characterize the degree to which investments and outcomes addressed all of the four domains.

## **RESULTS**

From among the pre-screened ILIs, we collected survey data on 110 cases. Of these, we excluded 37 from subsequent analysis because the survey information revealed that the case did not meet our criteria for ILIs, or because the data included too many incomplete responses to permit sound analysis. The remaining 73 ILIs were included in subsequent analysis.

Only two of the initiatives began before 2000. Two-thirds of the initiatives began, in their current arrangement, in 2007 or later; however, 52% of these were continuations of previous projects or initiatives in the same landscapes. At the time the survey was conducted, in 2012, 81% of the initiatives were ongoing while the remainder had already ended.

### ***ILI locations and contexts***

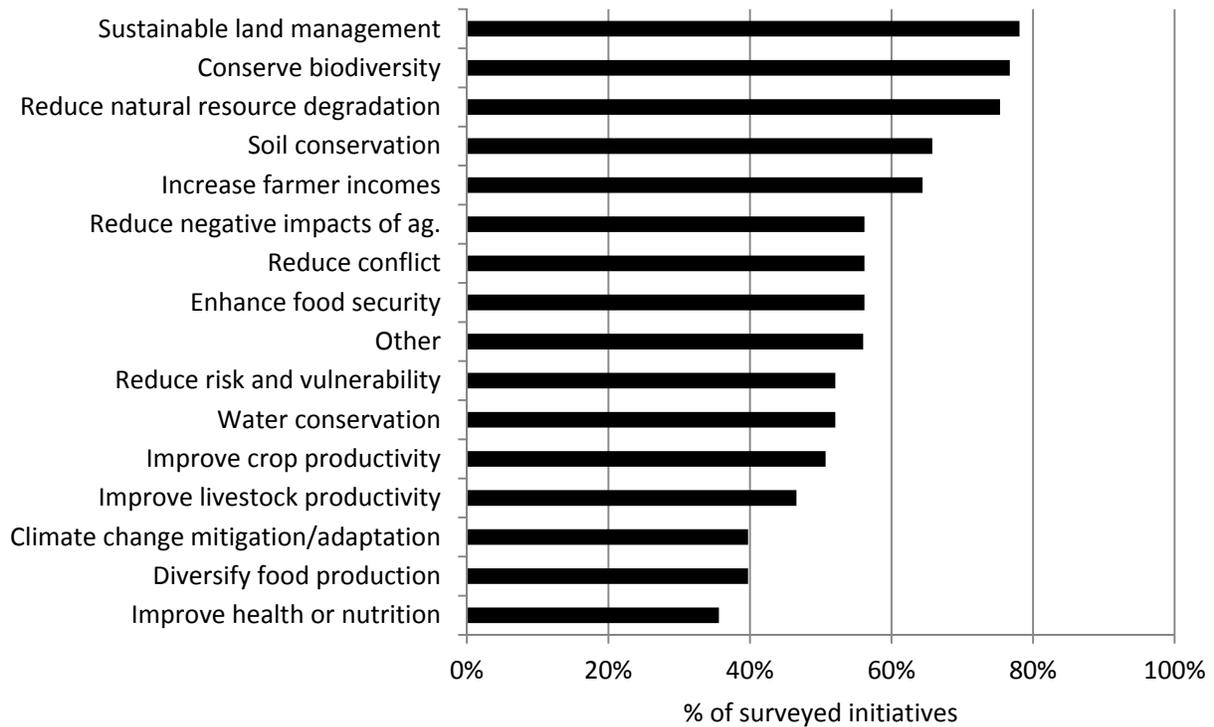
We identified ILIs in 32 countries in sub-Saharan Africa. The greatest numbers were identified in Kenya (13), Ethiopia (7), South Africa (7), Uganda (6), and the Democratic Republic of Congo (6). There were nine transboundary initiatives that spanned multiple countries, typically encompassing large, distinct regions such as the West African Sahel or the Great Lakes region in East Africa.

The surveyed ILIs are generally taking place in “mosaic” landscapes that, on average, include more than four major land uses (each comprising at least 5% of the landscape area) and four minor land uses (each comprising <5% of the landscape area). The large majority of initiatives took place in landscapes that included both agricultural land use (for crops, livestock and/or plantations; 88% of all initiatives) and natural ecosystems (native forest and/or grasslands; 77% of all initiatives). Urban and industrial land use represented a major land use in 51% of the landscapes and was a major or minor land use in all but 10 of the landscapes. Seventy-seven

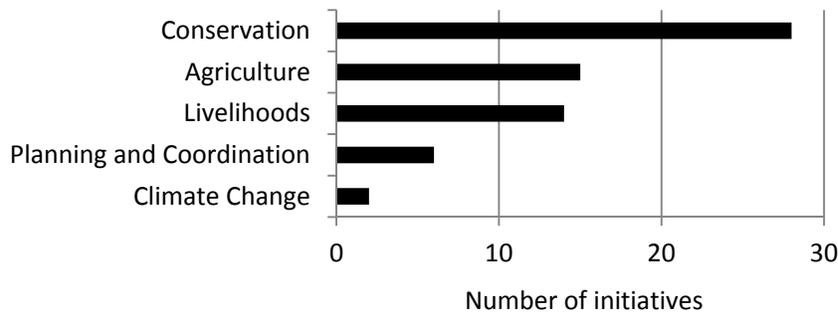
percent of the landscapes had wetlands and lakes within their boundaries, although these areas were more often minor components of the landscape.

**Motivations and impetus**

A variety of challenges and opportunities provided the impetus and guiding framework for the ILIs. Respondents cited a wide range of motivations, with strong representation of both conservation and agricultural interests (Figure 1). Many of the individual motivations spanned agriculture and conservation, such as sustainable land management, soil conservation, and efforts to reduce the negative impacts of agriculture. Although the ILIs were motivated by more than 8 issues each, on average, nearly two-thirds of the respondents (64%) reported that one or two issues were of primary importance in shaping the initiatives (Figure 2). For these initiatives, conservation was by far the most common “entry point” (reported by 30 initiatives) while agriculture and livelihoods were less common (reported by 15 and 13 initiatives, respectively). In six cases, the need for improved landscape planning and coordination—such as new co-management plans or better governance systems for land and resource management—was seen as a primary motivating factor and end in itself.



**Figure 1.** Main motivations reported for the initiatives. The horizontal axis indicates the percentage of initiatives for which respondents selected each of the motivations listed along the vertical axis.



**Figure 2.** Number of initiatives reporting each of five main categories of primary motivations. “Primary motivation” signifies the one or two overriding reasons for the initiative. The five categories were created based on post-hoc classification of open-ended responses for the survey question on primary motivations. Results are shown only for the 47 initiatives that indicated primary motivation(s).

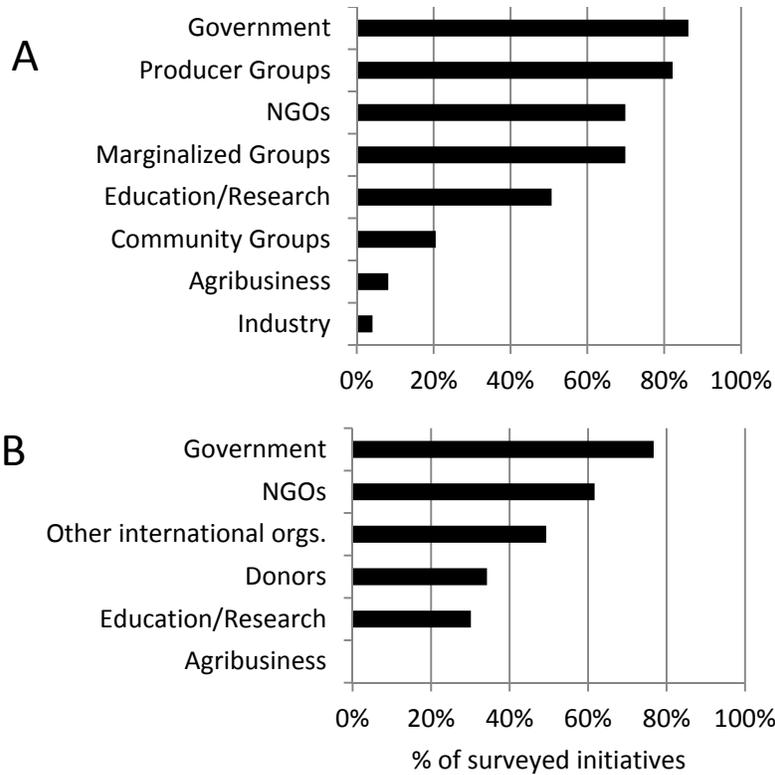
### ***Leaders, participants, and stakeholders***

Multi-stakeholder leadership and participation was clear across the initiatives (Figure 3). An average of more than nine stakeholder groups per initiative was engaged in initiative design and/or implementation. All but four of the initiatives had participation from stakeholders both inside and outside of the landscape. Forty-four percent of initiatives had apparently balanced participation from inside and outside the landscape, suggested by the fact that the number of stakeholder groups from each category was equal or only differed by one. Of the remainder, 38% of the initiatives had higher numbers of stakeholder groups from within the landscape while 17% had participation from more stakeholder groups from outside of the landscape.

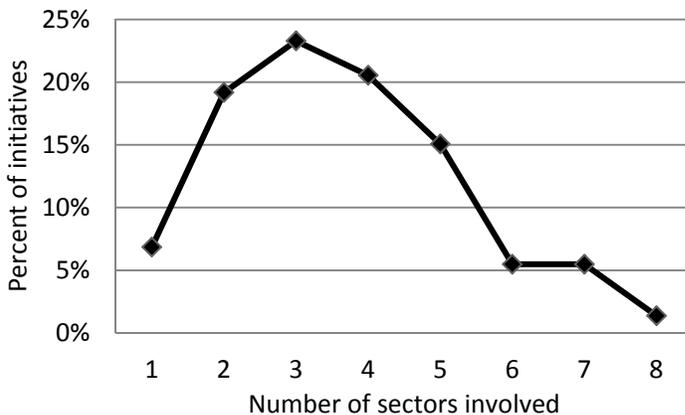
Government entities were the most frequently included stakeholders, present in 93% of the initiatives at some level. Government involvement from within the landscape (local and district level) was slightly more common (86%) than government participation from outside the landscape (state/provincial and national levels) (82%). Non-governmental organizations (NGOs) from inside and outside of the landscapes participated in the majority of the initiatives (Figure 3). Producer groups participated in 82% of the initiatives. However, participation from other private sector actors (such as agribusiness and extractive industries) was rare. All of the initiatives that engaged extraction industries involved a much higher total number of stakeholder groups, about fourteen on average.

Potentially marginalized groups, as self-identified by the respondents (e.g., women, indigenous groups, and landless people), were involved in 70% of the initiatives. This included involvement of indigenous groups in 38% of initiatives and landless people groups in 11% of initiatives. Women were specifically identified as a stakeholder group in 53% of the initiatives.

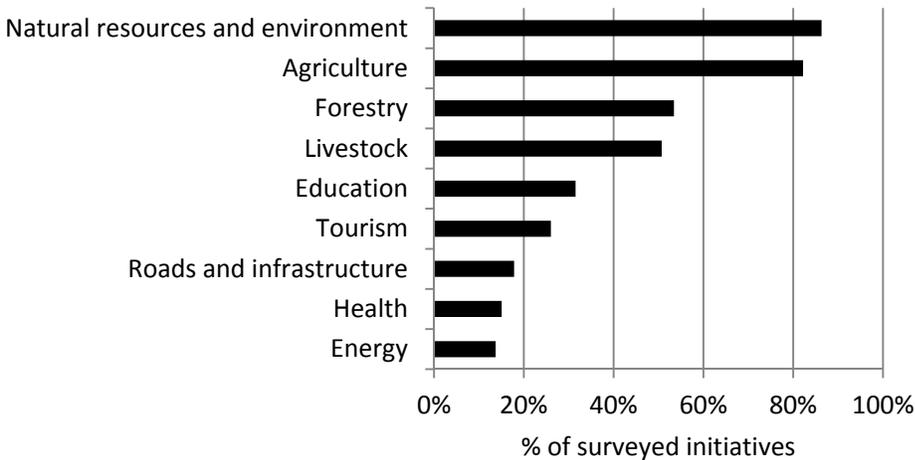
All but five of the initiatives reported multi-sectoral participation, and the large majority of initiatives include three or more sectors (Figure 4). Not surprisingly, the natural resources/environment and agriculture sectors were the most commonly involved, in 86% and 82% of cases, respectively (Figure 5). These were also the only two sectors featured in the five single-sector initiatives. The forestry and livestock sectors, closely linked to natural resources and agriculture, were also each involved in more than half of the initiatives. The education sector was involved in one third of the initiatives. Less frequent was participation by the health, energy, or infrastructure sectors, which were each involved in fewer than 20% of the surveyed initiatives.



**Figure 3.** Percentage of initiatives in which each of fourteen different groups participated. Results are reported for stakeholder groups from inside the landscape (panel A) and outside of the landscape (panel B). Stakeholder groups within the landscape include organizations whose purview is largely the landscape itself or a sub-area thereof (e.g., local NGOs, municipal or district government) as well as local land managers (e.g., farmers, communities, and corporate landholders). Groups from outside the landscape include higher administrative levels of government and several types of national and international organizations.



**Figure 4.** Level of multi-sectorality of the study initiatives, described here by the percent of initiatives involving a given number of the sectors listed in Figure 4.



**Figure 5.** Sectoral participation indicated by the percentage of initiatives involving each sector.

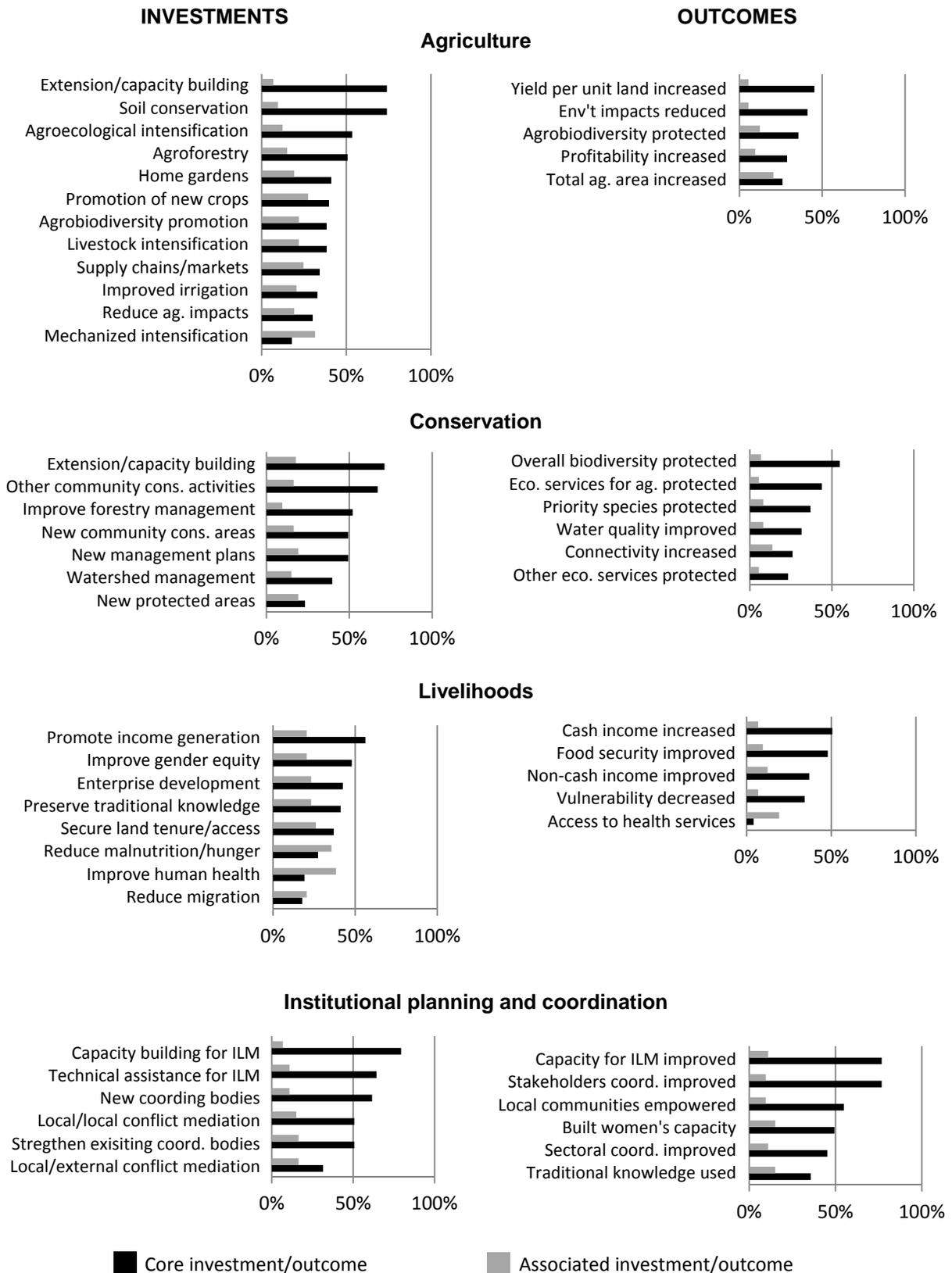
***Investment, activities, and coordination mechanisms***

Figure 6 summarizes the proportion of initiatives that invested in each of 33 possible areas—and that achieved each of 22 possible outcomes—across the four domains of landscape multifunctionality. Investments included support for specific land management practices (e.g., crop, soil, and forest management), capacity building activities (e.g., extension services), infrastructure (e.g., irrigation systems), social development and social equity (e.g., related to health, gender, and land tenure), and policy and governance support.

We compared relative levels of investment and outcomes by calculating a set of summary indices. The “investment index” is calculated by dividing the number of selected investments within each domain (i.e., agriculture, conservation, livelihoods, and institutional planning and coordination) by the total number of investment options in that area (as listed on the questionnaire) and then normalizing this ratio to a 25-point scale. We then combined these domain scores with equal weights to derive a summary investment index with a maximum of 100 points. We used a similar procedure calculate an “outcomes index” based on the outcomes selected by respondents.

Overall, we found that the large majority of initiatives were investing in pursuit of multiple objectives: 94% of initiatives invested in at least three of the domains while 81% invested in at least one activity in all four domains. In the 4% of initiatives that invested in only one domain, the other domains were represented to some degree by associated investments made by other actors in the landscape, outside the scope of the ILI.

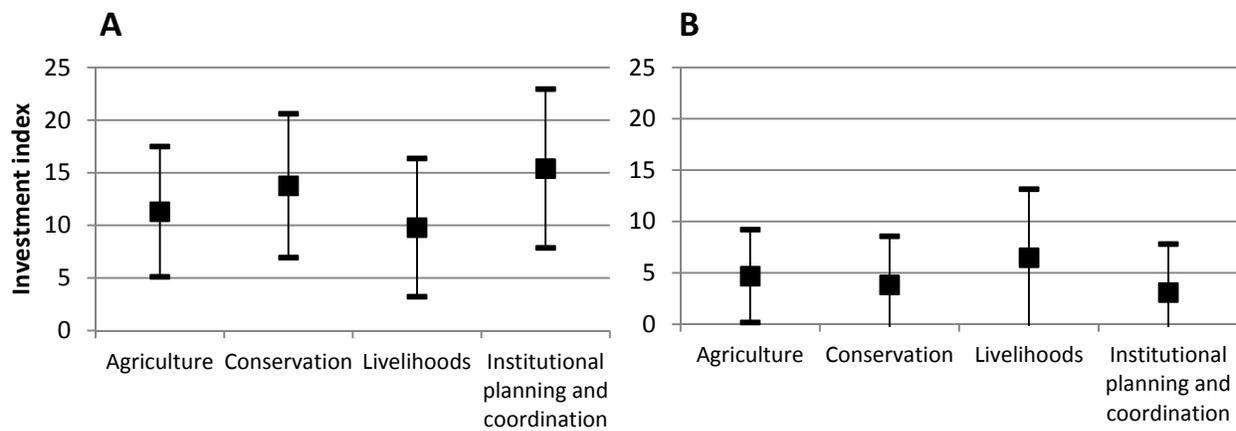
Of the four domains, institutional planning and coordination exhibited the highest mean investment index, indicating investment in many different planning and coordination activities or functions in most ILIs (Figure 7, panel A). For instance, 67% of initiatives invested in creating new landscape coordinating bodies or strengthening existing ones, and 64% provided technical assistance to support integrated landscape management. Many landscape initiatives included efforts to mediate and resolve conflict, including 62% of ILIs that worked to resolve conflict among multiple local stakeholders and 32% that worked to mediate conflict between local and external stakeholders.



**Figure 6.** Proportion of the surveyed initiatives that were reported to include each of 33 investments and activities (left panels) and to achieve each of 22 outcomes (right panel) across the four domains of landscape multi-functionality. Investments included as part of the initiative itself are designated as “core” while those that took place in the landscape outside of the purview of the initiative are indicated as “associated.” Outcomes attributed to initiative activities are designated as “core” while those attributed to other factors are designated as “associated.” Investment and outcome descriptors are abbreviated here to conserve space; please see the survey instrument (Supplemental Material) for the full descriptions.

The other areas of investment matched the trend observed in the main entry points, with investment in conservation being the most common, followed by agriculture. The livelihoods domain showed the lowest relative number of investments, and 12% of initiatives reported no investment in this domain. Associated investments made by other actors in the landscape show the opposite of the trend in core investments, with the largest relative number of investments being made in the livelihoods domain and the least in institutional planning and coordination (Figure 7, panel B). It should be noted that these results indicate the number or variety of investments in each domain (as selected from among the pre-defined set of choices on the questionnaire), but not necessarily the relative cost or intensity of such investment.

Almost all respondents (95%) reported capacity building as a component of their ILIs. This included capacity building related to agricultural practices (74%), forestry and natural resources (71%), and integrated landscape management (79%). Forty-eight percent of the ILIs invested in capacity building in all three areas.

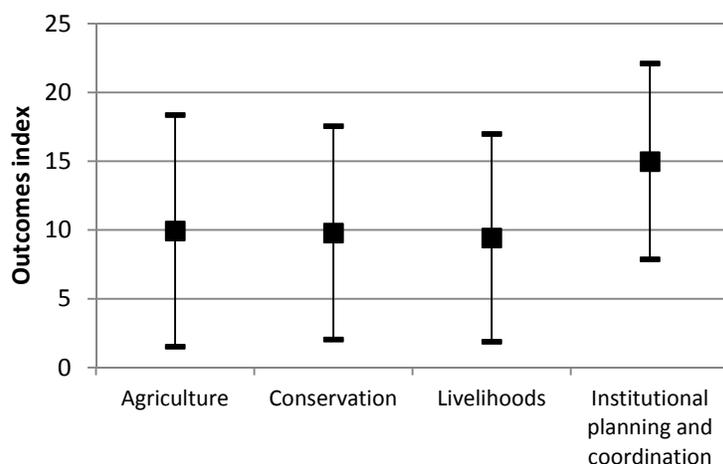


**Figure 7.** Mean investment index plus or minus one standard deviation, by area of investment, for core investments made by the initiatives (panel A) and associated investments made by other actors in the landscape (panel B).

### ***ILI outcomes***

The outcomes data provide insight into the perceived impacts of ILIs, as well as the types of (potentially synergistic) outcomes being achieved by other activities going on in the same landscapes. Outcomes related to institutional planning and coordination (including human capital) were the most consistently cited: more than three-quarters of respondents reported increased local capacity to sustainably manage landscapes and improved coordination and cooperation among stakeholders. In addition, a high proportion of initiatives reported local community empowerment (55%), empowerment or capacity building of women (49%), and improved cross-sectoral coordination (45%) (Figure 6). Across the other three domains, only two other outcomes were reported in more than 50% of the initiatives: overall biodiversity protection (55%) and increase in household cash income for low-income residents (51%).

Overall, the outcome index for initiatives was significantly lower than the investments index (44 out of 100 vs. 50 out of 100, respectively) (paired t-test,  $p=0.04$ ). The trend in relative differences among the four domains observed in the investment index is also seen in the effectiveness index, except that the gap between institutional planning and effectiveness and the other groups is markedly higher (ANOVA,  $p<0.001$ ) (Figure 8).



**Figure 8.** Average outcomes index plus and minus one standard deviation by outcome area.

### ***Regional distinctions***

To identify any key regional differences in the approach, design, and outcomes of ILIs, we compared results for four regions: eastern Africa, southern Africa, central Africa, and western Africa. Although the African continent is highly diverse, we found no significant differences in the number or type of motivations, or in the overall level of investments, among the four regions. When looking separately at each investment domain, only agriculture was significantly different among regions ( $p=0.04$ ), with eastern Africa exhibiting greater numbers of agricultural investments than the other regions. Participation by region was similar in terms of the number of stakeholders; however there were regional differences in the participation of specific stakeholder groups. For instance, women were included in 87% of the initiatives in western Africa but in no more than half of the initiatives in any other region. Indigenous groups were stakeholders in 50% of the central African initiatives and 42% of those in southern Africa, but in relatively few in the other regions. Almost all initiatives that included landless people groups were in eastern Africa.

### ***Relationships among sets of variables***

The correlation between the investment and outcome indices, although not strong, is significant and positive ( $r^2=0.20$ ,  $p<0.001$ ). Given that all the initiatives indicated multiple objectives and almost all invested across multiple domains, it is interesting that initiatives that reported having one or two primary motivations invested in fewer activities and reported fewer perceived outcomes, on average (t-tests,  $p=0.03$  and  $p=0.02$ , respectively). This result is not likely to be an artifact of the index design, which weights investment and outcomes across all four domains, considering that only half of the initiatives with primary motivations reported above average levels of outcomes in the domain(s) related to the primary issue(s) motivating the initiative. Based on a categorization of initiatives into low multi-objectivity (1-5 motivations), moderate multi-objectivity (6-10 motivations), and high multi-objectivity (11-15 motivations), higher levels of multi-objectivity were associated with a higher outcome index score (ANOVA,  $p<0.001$ ).

Initiatives that invested in two or more forms of capacity building reported significantly higher levels of outcomes than those that invested less in capacity building (t-test,  $p<0.001$ ). The establishment of new coordinating bodies was positively associated with higher outcome indices (t-test,  $p=0.02$ ), although the strengthening of existing coordinating bodies was not (t-test,  $p=0.28$ ). Inclusion of conflict mediation activities, either among local actors or between local and

external stakeholders, was positively related to higher levels of outcomes, but this relationship was not significant (t-test,  $p=0.12$  and  $p=0.10$ , respectively).

Participation of certain stakeholders groups was also associated with higher outcome indices: for instance, initiatives involving women reported significantly higher outcome index scores than those that did not (t-test,  $p=0.02$ ). However, the involvement of other potentially marginalized groups (i.e., indigenous groups and landless people groups) was not significantly associated with higher outcome scores. Participation of governmental entities—whether at the local, district, sub-national, or national level—did not predict significantly different outcome scores.

### ***Most and least successful aspects***

Respondents were invited to provide open-ended responses on what they perceived to be the most and least successful aspects of their initiative. These responses provide important insights, including into the potential and limitations for achieving new synergies through integrated landscape management. Improvements in local capacity—not only for technical practice (such as agriculture or natural resource management) but also for participatory decision-making—was frequently listed as the most successful aspect. Improvement of local livelihoods was often cited in conjunction with success in some other area (e.g., increased income due to improved agricultural practices). This result is notable given that livelihoods garnered the lowest average investment and outcomes scores. Improved planning and coordination processes, both at local and regional scales, were also frequently listed among the most successful aspects. Several respondents also noted increased awareness or changed attitudes and mindsets as key successes. Other successes were related to tangible, discrete changes attributed to the initiative, such as the formation of a new protected area, governing body, or set of policies.

Many of the most successful aspects reappeared in other landscapes as being among the most challenging or least successful aspects. Difficulties with coordinating stakeholders, building trust, reducing conflict, and assembling key actors were common challenges. However, the most frequently mentioned challenge was accessing continuous funding to carry out or scale-up initiative activities. Limitations in market access and infrastructure were also cited as key challenges leading to lack of success. This result concurs with the low levels of initiative participation by private sector stakeholders and by the infrastructure sector. Finally, some respondents expressed frustration with challenging contexts in which increasing human pressures on the natural resource base and an inhospitable policy environment made it very difficult to carry out integrated, coordinated action with a view toward broader or longer-term sustainability.

## **DISCUSSION**

At the outset, we note a few important caveats of relevance to the interpretation of the survey data. First, data on the initiatives are self-reported, without independent verification by the research team. Nevertheless, respondents were specifically selected to be individuals who have a broad knowledge of the context, activities, and outcomes of the initiatives in which they participated. In addition, survey responses were carefully screened to identify any irregularities that could indicate a lack of knowledge of the initiative or understanding of the survey questions. When necessary, we made follow-up contact with respondents to clarify their answers. Second, the 73 analyzed initiatives may not be a representative sample of all of the ILIs currently or recently implemented in sub-Saharan Africa. Rather, they represent those that we were able to identify through a network of partners, contacts, or from their Internet presence. This may result in some bias toward initiatives in which larger NGOs, donors, or research organizations were

involved. Third, because the survey instrument was available only in English and Portuguese, the survey certainly reflects more limited representation from Francophone Central and West Africa. Notwithstanding these caveats, however, the survey responses provide a rich dataset to begin to understand ILIs more systematically across sub-Saharan Africa, and to identify key questions for further research.

### ***A new paradigm?***

Overall, integrated landscape management in Africa does not appear to be as widespread or as well-developed a paradigm as it is on certain other continents. For instance, in Latin America, a similar survey turned up a substantially larger number of ILIs—including many more older and longstanding initiatives—as well as a variety of policies and platforms supporting integrated landscape management (N. Estrada et al., unpublished results). However, based on the starting dates of the surveyed African ILIs, there appears to be an exponential rise in the use of integrated landscape approaches over just the past five years, consistent with some of the trends noted in the Introduction.

If ILIs are viewed as merely the sum of their parts, then in many ways they are not novel: most ILIs included many of the same types of investments in agriculture, conservation, and livelihood improvement that have long been central in rural development projects and sectoral government programs. What these initiatives add is an intentional effort to use multi-stakeholder, multi-scale frameworks to plan and implement the activities across an entire landscape, in a more coordinated fashion. In the most comprehensive of these, multi-sector governance, coordination and adaptive management functions become the hub for linking stakeholders, activities and policies. In other instances, ILIs have emerged mainly from the agricultural development or conservation entry points, but have diverged from conventional project models in that multi-objective design and broader thematic and/or spatial frameworks are seen as critical for achieving sustained improvements. In these cases, too, there is a central emphasis on capacity building, participation, and multi-stakeholder planning and coordination, which cannot often be said of earlier, ostensibly integrated, approaches such as ICDPs.

### ***Does a multi-objective approach pay off?***

Although the survey data on outcomes are not detailed enough to draw definitive conclusions about relative effectiveness and its causes, the results do suggest real value in multi-objective approaches to rural landscape management. On average, initiatives with one or two primary motivations achieved lower outcome scores—even in the domain related to their primary objective—than those that without specific sectoral entry points. This result provides a stark rebuttal to the concern of sectoral actors about “mission drift” in project activities. We offer a few explanations for why multi-objective ILIs seem to be achieving a larger number of positive outcomes. First, multi-objective ILIs are more likely to require active participation from a variety of stakeholders, thus increasing the probability of uncovering hidden co-dependencies between social and natural systems that may impinge on several outcome domains. Conversely, initiatives with sectoral entry points may be more likely to exclude important actors, by design or oversight. There is little doubt that sectoral actors and institutions will continue to provide major funding and policy impetus for investment in rural landscapes for some time to come. The question, then, is whether the field-of-view of these investments can be sufficiently broadened to accommodate the additional perspectives that appear to support greater outcomes.

The results also suggest that the investments of ILIs in landscape planning and coordination have paid off in the sense that new coordinating bodies, awareness of inter-sectoral linkages and co-dependencies, and institutional capacity were realized, often within just a few years. Drawing from the broader body of research on socio-ecological systems, these outcomes would

appear to be significant for putting in place institutional structures that can adaptively manage complex systems over time. However, the development of such institutional capacity within the context of an ILI does not necessarily mean that governance processes or key outcomes will be robust and sustainable in the long term, as highlighted by some of the results. One concerning trend is that some key stakeholders—particularly those from the private sector—often appeared to be missing from ILIs. This gap may inhibit the effectiveness of ILIs in addressing weak market linkages, which are a common impediment to sustained economic development of African rural landscapes and were identified as such by many of the ILIs. In addition, private investors in Africa have a long history of circumventing local authority and democratic processes—most recently through a wave of agricultural “land grabs” across the continent. The absence of powerful stakeholders in integrated landscape management processes poses an omnipresent risk that gains achieved through careful multi-stakeholder negotiation could be quickly derailed by influential decisions made outside of such processes.

An additional finding that impinges on ILI sustainability is the tendency of landscape coordination bodies and planning processes to be funded by temporary resources, often from outside the landscape. Although government bodies at multiple administrative levels were usually involved as stakeholders, only infrequently did we find evidence of robust government support or leadership in ILIs. Given that one of the hypothesized benefits of robust “landscape governance” is to help groups of stakeholders respond over time to changing circumstances and novel conditions, such mechanisms must be sustained indefinitely, although their establishment may be catalyzed by time-limited project investments. The lack of ongoing local sources of support (financial and otherwise) for such coordination mechanisms in the surveyed ILIs bodes poorly for long-term sustainability.

In ILIs in Latin America, where landscape approaches have a longer history, stronger government involvement and community volunteerism have often played critical roles in sustaining the work of the coordinating bodies and mechanisms (N. Estrada et al., unpublished results). While such forms of public sector support and social capital can take a long time to develop, in sub-Saharan Africa there is the prospect that shifting trends in foreign aid could jump-start the process. For instance, there is growing interest in targeting new sources of climate finance to integrated landscape projects, while rural development efforts are increasingly addressing ecosystem issues to increase household and community resilience.

### ***Implications for development policy***

The study suggests that ILIs have a significant role to play in recent renewed efforts to strengthen African agriculture. A staggering 23% of Africans are currently undernourished—about 239 million people in total—while grain yields are a mere 37% of those achieved in Asia (FAO 2012, USDA 2010). Given stagnant yields and a rapidly growing population, Africa’s food imports now exceed exports by \$22 billion per year (as of 2007; FAO 2011b). As world food prices remain high and volatile, importation is a risky strategy. Thus, there is an urgent need for Africa to increase food production, but without compromising the often fragile environments upon which development depends.

This situation challenges policy makers to bolster agricultural production in ways that are immediately effective and can be rapidly scaled up. In this context, conventional Green Revolution investments (e.g., improved seed, access to fertilizer and other agrochemicals, and improved market linkages) hold appeal because their impacts on yield and hunger may be rapid and readily documented (Actionaid 2009). For instance, Malawi’s fertilizer subsidy program is often cited by policymakers as a success story because it transformed the country from being

food insecure to being a maize exporter within a few years (Minot & Benson 2009). Without qualifying the importance of this achievement, it is important to note that such reports of success seldom discuss the economic burden that subsidies placed on the country, the ecological implications of this development trajectory, or the possibility of other options that could have achieved similar benefits with fewer tradeoffs.

The question, then, is not whether modern agricultural technologies are needed (they are) or whether such technologies can dramatically boost grain yields (they can), but rather which development trajectories will most effectively and sustainably provide the multiple goods and services demanded of rural landscapes, including sustained high agricultural yields. This survey contributes to the collection of data that will enable policymakers to evaluate and compare alternative rural development trajectories. The results provide suggestive evidence that ILIs can effectively meet the key goals that currently drive agricultural policy—namely boosting productivity, increasing food security, and increasing incomes—while also providing ecosystem services, conserving biodiversity, and managing landscapes for greater resilience.

### ***Future directions***

The results presented here should help inform action around the already emerging interest in landscape approaches in Africa. However, to gain mainstream support, such approaches will likely require a much larger body of evidence, including data more akin to those from the Malawi fertilizer subsidy example that has been so influential. We suggest three needs for new evidence on ILIs: 1) more evidence on quantitative outcomes across multiple areas of landscape multi-functionality, especially food production and poverty alleviation; 2) evidence that more rigorously links key outcomes to landscape management processes (i.e., credible attribution); and 3) research that unravels the specific mechanisms underlying such linkages, including human and institutional factors. The complex nature of socio-ecological landscape systems makes this type of information far more difficult to provide than for a relatively straightforward investment or policy such as a fertilizer subsidy. Nonetheless, we suggest a few ways forward.

First, with greater research investment, it should be possible to retrospectively collect and analyze quantitative data on multiple landscape outcomes within ongoing ILIs. Such work has been done for specific landscapes, but not across a large sample size (akin to the one in this study) that might permit more generalized conclusions. Continuing to monitor changes across all four domains over a ten to twenty year period will be important for assessing long term dynamics and persistence of changes in human and ecological systems in integrated landscapes. In fact, only at the decadal timescale may it actually be possible to determine whether ILIs provide a more sustainable or resilient approach to food security than conventional development approaches.

Second, in-depth mixed methods approaches may be used to better understand the mechanisms by which ILIs function, including key opportunities and barriers. Similar work has been done for other types of multi-scale natural resource governance, but ILIs have some unique traits that merit their own investigation. This work would help clarify the different designs of landscape institutions and their effectiveness in varying social, political, and biophysical contexts. It would also probe the specific dynamics of multi-scale, multi-sectoral stakeholder processes, in which key decisions often lie at the boundary, if not outside, the ordinary purview of many actors. Finally, there is much to be learned from ILI practitioners about key features of the enabling environment and policy context that support or undermine their efforts. All of these

themes will be explored in the companion Africa review paper, which provides in-depth assessments of about 15 of the ILIs from this study.

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## SUPPLEMENTAL MATERIAL

The Supplemental Material includes:

1. Internet search terms (keywords) used to identify potential ILIs for the initial database
2. A copy of the survey instrument

### **Internet search terms:**

- Adaptive governance
- Agroforestry
- Climate change adaptation
- Community-based natural resource management
- Community-based forest management
- Conservation agriculture
- Food security and conservation
- Holistic management
- Initiative
- Integrated landscape management
- Integrated management
- Integrated watershed management
- Landscape management
- Landscape initiative
- Landscapes and livelihoods
- Livelihoods
- Multi-stakeholder
- Natural resource management
- Participatory
- Program
- Programme
- Project
- Resilience
- Socio-ecological
- Territorial development
- Territorial management
- Terroir
- Territory

*plus names of each of the countries in sub-Saharan Africa*

# Ecoagriculture Landscapes and Initiatives - Africa

## 1. Welcome!

Dear respondent,

Thank you for responding to this survey on "ecoagriculture" landscape initiatives in Africa. By sharing your experiences, you will contribute to our effort to document and share lessons learned from landscape-scale initiatives to support food production, ecosystem conservation, and rural livelihoods. The results of this study will contribute to a strategic, international action and advocacy program to expand the use of sustainable ecoagriculture approaches in Africa and beyond.

This questionnaire includes 7 pages, and should take about 20 minutes to complete. The survey asks questions about a landscape initiative in which you have been involved, and about the landscape where this initiative is located. A landscape initiative is defined as a multi-stakeholder project, program, or community-led effort to increase food production, ecosystem conservation, and rural livelihoods through integrated planning, decision-making, and management at a landscape scale. Landscape initiatives can include community-led efforts, government projects or programs, or initiatives supported by organizations from outside the landscape.

In appreciation of your contribution, you will receive an electronic copy of the Africa review study, highlighting key lessons learned, resources, and opportunities for supporting and expanding ecoagriculture initiatives. Also, if you complete this questionnaire prior to January 31, 2012, you also be automatically entered to win one of three Apple iPad computers, which will be awarded to three randomly-selected respondents.

If you have any questions about the survey, please contact Phil Dobie at [pdobie@cgiar.org](mailto:pdobie@cgiar.org). Thank you for very much for your valuable contribution to making this study a success!

The Africa ecoagriculture review study team  
Phil Dobie, ICRAF  
Jeff Milder, EcoAgriculture Partners

## 2. Part 1: Respondent Information

Please provide the following basic information about yourself and your role in the landscape or landscape initiative.

**Title:**

**First name:**

**Middle name:**

**Last name:**

**Email address:**

**What is the name of your organization?**

**What is your position or title within the organization?**

**What is your role in the landscape or landscape initiative? (please describe)**

## 3. Part 2: Basic information on the landscape

Please describe the landscape where you were involved in promoting integrated activities to benefit food production, ecosystem conservation, and rural livelihoods.

### Where is the landscape located? (please fill in as many as relevant)

Country:

State, province or region:

Locality (please list the districts, municipalities or towns within the landscape):

### If the landscape has a name, please provide it here:

### Approximately how large is the landscape (area)? (please answer in hectares or in square kilometers)

hectares

square kilometers

### Approximately how many people live in the landscape? (an estimate is OK)

# Ecoagriculture Landscapes and Initiatives - Africa

**Please provide a general characterization of land use/land cover in the landscape by checking the boxes that apply:**

	Major landscape component (more than 5% of land cover)	Minor landscape component (present, but less than 5% of land cover)
Tropical moist forest	<input type="checkbox"/>	<input type="checkbox"/>
Tropical dry forest	<input type="checkbox"/>	<input type="checkbox"/>
Temperate, upland, or montane forest	<input type="checkbox"/>	<input type="checkbox"/>
Grassland or savanna (without livestock)	<input type="checkbox"/>	<input type="checkbox"/>
Wetland	<input type="checkbox"/>	<input type="checkbox"/>
Lakes and other water bodies	<input type="checkbox"/>	<input type="checkbox"/>
Annual grain crops	<input type="checkbox"/>	<input type="checkbox"/>
Other annual crops (horticulture, etc.)	<input type="checkbox"/>	<input type="checkbox"/>
Perennial crops in agroforestry systems (e.g., shade-grown cocoa or coffee)	<input type="checkbox"/>	<input type="checkbox"/>
Other perennial crops (e.g., fruit orchards, sun-grown coffee)	<input type="checkbox"/>	<input type="checkbox"/>
Pasture (grassland for livestock)	<input type="checkbox"/>	<input type="checkbox"/>
Forestry plantations	<input type="checkbox"/>	<input type="checkbox"/>
Villages / towns / urban	<input type="checkbox"/>	<input type="checkbox"/>
Industry, mining, oil/gas development	<input type="checkbox"/>	<input type="checkbox"/>

**Please list any other land use/land cover that is**

a major landscape component (more than 5% of land cover)

a minor landscape component (less than 5% of land cover)

# Ecoagriculture Landscapes and Initiatives - Africa

## 4. Part 3: Basic information on the landscape initiative

Please tell us about the landscape initiative in which you have been involved. Again, a landscape initiative is defined as a multi-stakeholder project, program, or community-led effort to increase food production, ecosystem conservation, and rural livelihoods through integrated planning, decision-making, and management at a landscape scale. This landscape initiative could be a community-led effort, a government project or program, or an initiative supported by organizations or donors from outside the landscape. In your responses, please describe the initiative as it is currently organized and managed, even though it may have a longer history under previous organization and management.

### Initiative name (or brief description):

### Initiative dates:

Start date:

End date (if still in progress, put 2012):

### Which organizations lead the initiative? (please provide the complete name of the organization if possible)

Please list key organization(s) within the landscape (e.g., farmers' associations, community or indigenous groups, local government, local NGOs):

Please list key organization(s) outside the landscape (e.g., donors, international organizations or NGOs):

### Is this initiative a continuation of a previous project or effort?

Yes

No

If so, please provide the name of the previous effort:

# Ecoagriculture Landscapes and Initiatives - Africa

**What were the main motivations for the initiative? In other words, what problems or challenges was the initiative trying to solve, or what opportunities was it trying to realize? (Check all that apply)**

- |  |   |
|--|---|
| <input type="checkbox"/> Enhance food security   | <input type="checkbox"/> Increase farmer incomes                          |
| <input type="checkbox"/> Improve crop productivity                                       | <input type="checkbox"/> Improve livestock productivity                   |
| <input type="checkbox"/> Diversify food production                                       | <input type="checkbox"/> Improve health or nutrition                      |
| <input type="checkbox"/> Conserve biodiversity   | <input type="checkbox"/> Conserve or increase water quality or water flow |
| <input type="checkbox"/> Conserve soil or increase soil fertility                        | <input type="checkbox"/> Reduce the environmental impacts of agriculture  |
| <input type="checkbox"/> Reverse natural resource degradation                            | <input type="checkbox"/> Mitigate climate change or obtain carbon credits |
| <input type="checkbox"/> Enhance sustainable land management                             | <input type="checkbox"/> Reduce vulnerability to extreme weather events   |
| <input type="checkbox"/> Reduce conflict among different resource users in the landscape |   |
| <input type="checkbox"/> Other (please specify)  |   |

**Of these, were there one or two key issues or challenges that motivated stakeholders to create the initiative?**

- No, the initiative had many different objectives that were considered to be highly important.
- Yes, there were one or two salient issues. Please list these:

**How large an area has been directly affected by the initiative's activities, programs or policies?**

**How many people has the initiative sought to benefit? (please provide either the number of people benefited or the percent of the landscape population benefited by the initiative)**

Number of beneficiaries:

Percent of total landscape population:

**At the beginning of the initiative, was a baseline study, pre-project assessment, project document, or similar material prepared?**

- Yes
- No

## Ecoagriculture Landscapes and Initiatives - Africa

**If so, did this documentation include maps?**

Yes

No

# Ecoagriculture Landscapes and Initiatives - Africa

## 5. Part 4: Initiative activities and investments

Please tell us about the major activities, investments, or other changes that were included as part of the initiative.

Which of the following activities has the initiative included? Also, which of these activities were taking place simultaneously in the landscape, but not as part of the initiative? Please check the appropriate box for each activity taking place in the landscape during the time period of the initiative:

### Investment in agriculture:

	Included as part of the initiative	Taking place simultaneously in the landscape but not part of the initiative
Promotion or introduction of new crops or crop varieties	<input type="radio"/>	<input type="radio"/>
Crop intensification with increased mechanization or application of fertilizers, pesticides, or herbicides	<input type="radio"/>	<input type="radio"/>
Crop intensification with agroecological methods (e.g., organic production, conservation agriculture, no-till, integrated pest management, improved fallows, etc.)	<input type="radio"/>	<input type="radio"/>
Livestock intensification with agroecological methods (e.g. improved grass and browse supply, management of water availability, etc.)	<input type="radio"/>	<input type="radio"/>
Establishment or improvement of irrigation systems	<input type="radio"/>	<input type="radio"/>
Adoption or expansion of agroforestry	<input type="radio"/>	<input type="radio"/>
Programs to adopt or improve home gardens	<input type="radio"/>	<input type="radio"/>
Implementation of laws or incentives to reduce the environmental impacts of agriculture	<input type="radio"/>	<input type="radio"/>
Implementation of soil conservation practices	<input type="radio"/>	<input type="radio"/>
Extension or capacity building programs to support agriculture	<input type="radio"/>	<input type="radio"/>
Establishment of new supply chain or marketing channels (including value addition and certification) for agricultural products	<input type="radio"/>	<input type="radio"/>
Promotion of native food species and agrobiodiversity	<input type="radio"/>	<input type="radio"/>

Other investment in agriculture (please specify)

# Ecoagriculture Landscapes and Initiatives - Africa

## Investment in forestry, conservation, and natural resource management

	Included as part of the initiative	Taking place simultaneously in the landscape, but not part of the initiative
New protected areas established	<input type="radio"/>	<input type="radio"/>
New management plans for existing protected areas	<input type="radio"/>	<input type="radio"/>
Other new reserves or community-based conservation areas (including areas that allow sustainable harvest and use of natural resources)	<input type="radio"/>	<input type="radio"/>
Other community-based natural resource management activities	<input type="radio"/>	<input type="radio"/>
Improved forestry management	<input type="radio"/>	<input type="radio"/>
Extension or capacity building programs to support forestry or natural resource management	<input type="radio"/>	<input type="radio"/>
Watershed management program or activities (e.g., restoration of riparian areas)	<input type="radio"/>	<input type="radio"/>
Other investment in forestry, conservation, or natural resource management (please specify)		
<input type="text"/>		

## Investment in livelihoods and human wellbeing

	Included as part of the initiative	Taking place simultaneously in the landscape, but not part of the initiative
Programs to reduce malnutrition and hunger	<input type="radio"/>	<input type="radio"/>
Programs for improving human health (e.g., improved access to health services)	<input type="radio"/>	<input type="radio"/>
Programs for improving gender equity	<input type="radio"/>	<input type="radio"/>
Programs to help secure land tenure and resource access rights	<input type="radio"/>	<input type="radio"/>
Preservation of traditional knowledge, values, or cultural resources	<input type="radio"/>	<input type="radio"/>
Programs to support enterprise development, savings and investment, or financial education	<input type="radio"/>	<input type="radio"/>
Activities to promote income generation and diversification outside of agriculture or forestry (e.g., handicrafts, ecotourism)	<input type="radio"/>	<input type="radio"/>
Efforts to reduce migration out of the landscape	<input type="radio"/>	<input type="radio"/>
Other investment in livelihoods and human wellbeing (please specify)		
<input type="text"/>		

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## Investment in multi-sectoral coordination and planning

	Included as part of the initiative	Taking place simultaneously in the landscape, but not part of the initiative
Activities to strengthen existing coordination bodies (e.g., inter-jurisdictional councils, public-private partnerships)	<input type="radio"/>	<input type="radio"/>
Creation of new landscape coordinating bodies	<input type="radio"/>	<input type="radio"/>
Dialogue and mediation of conflicts among local communities or resource users	<input type="radio"/>	<input type="radio"/>
Dialogue and mediation of conflicts between local, national and international communities or resource users	<input type="radio"/>	<input type="radio"/>
Capacity building activities to help communities and stakeholders conduct integrated, landscape-scale management	<input type="radio"/>	<input type="radio"/>
Technical assistance to support integrated, landscape-scale management	<input type="radio"/>	<input type="radio"/>
Other investment in livelihoods and human wellbeing (please specify)		
<input type="text"/>		

### Please list any other activities or investments that were

included as part of the initiative:

taking place simultaneously in the landscape, but not part of the initiative:

## 6. Part 5: Stakeholders' roles in the initiative

Please tell us about the roles of different local and external groups in the initiative.

**Which of the following types of groups have participated in designing or implementing the initiative? Please list only those groups that played a role in creating or carrying out the initiative or its component activities. Do not include groups that were merely informed or consulted about the initiative as affected stakeholders. Please check all that apply:**

- |   |  |
|---|--|
| <input type="checkbox"/> Local farmers' or producers' association   | <input type="checkbox"/> Sub-national or national NGO  |
| <input type="checkbox"/> Womens' association  | <input type="checkbox"/> International NGO   |
| <input type="checkbox"/> Indigenous group   | <input type="checkbox"/> Local or national university or research center   |
| <input type="checkbox"/> Group representing rural landless people   | <input type="checkbox"/> Foreign or international university or research center  |
| <input type="checkbox"/> Other local community groups (please list the type of group in the comment box at the end of the question) | <input type="checkbox"/> In-country agribusiness (e.g., large plantation or ranch owners, agricultural land investors, etc.) |
| <input type="checkbox"/> Local government leaders (village leaders, mayors, chiefs, etc.)   | <input type="checkbox"/> Foreign agribusiness (e.g., large plantation or ranch owners, agricultural land investors, etc.)    |
| <input type="checkbox"/> Government extension officers  | <input type="checkbox"/> Logging/forest products industry  |
| <input type="checkbox"/> Other local or district government offices or staff  | <input type="checkbox"/> Mining, oil, gas, or other industry   |
| <input type="checkbox"/> State or provincial government offices or staff  | <input type="checkbox"/> Bi-lateral or multi-lateral donor(s)  |
| <input type="checkbox"/> National ministries or national-level government staff   | <input type="checkbox"/> International organization focused on agriculture   |
| <input type="checkbox"/> Local non-governmental organization (NGO)  | <input type="checkbox"/> International organization focused on conservation  |
| <input type="checkbox"/> Other (please specify)   |  |
-

## Ecoagriculture Landscapes and Initiatives - Africa

**Which sectors have been directly involved in the initiative? Direct involvement could include, for example, providing funding or staff resources, carrying out activities on the ground, or providing extension or capacity building services. Please check all that apply, but do not check sectors that were not directly involved in the initiative, even if they were conducting other activities in the landscape.**

- |  |   |
|--|---|
| <input type="checkbox"/> Agriculture                                     | <input type="checkbox"/> Health                                   |
| <input type="checkbox"/> Livestock                                       | <input type="checkbox"/> Education                                |
| <input type="checkbox"/> Forestry  | <input type="checkbox"/> Energy                                   |
| <input type="checkbox"/> Natural resources, conservation, or environment | <input type="checkbox"/> Roads, transportation, or infrastructure |
| <input type="checkbox"/> Tourism   |   |

Others (please specify)

**Has the initiative established or strengthened any institutions or mechanisms to support integrated landscape management, such as: (please check all that apply)**

- New cross-jurisdictional planning or governance entity (e.g., council of governments or territorial development group)
- Other organization that plays the role of supporting landscape-wide planning and coordination
- Mechanism or process to coordinate plans and investments proposed by different sectors (e.g., agriculture, forestry, infrastructure, irrigation)
- Mechanism or platform to allow different groups of land and resource users to resolve conflict

# Ecoagriculture Landscapes and Initiatives - Africa

## 7. Part 6: Initiative outcomes/results

Please tell us about the initiative's outcomes and results.

### Does this initiative include a monitoring and evaluation component

Yes

No

### Does the initiative use an adaptive management approach? (Note: adaptive management an iterative process that involves monitoring the results and effectiveness of project activities, reflecting on lessons learned from this experience, and then adjusting strategies to respond to this new information or to changing conditions.)

Yes

No

Which of the following outcomes or changes took place within the ten years following the start of the initiative? (If the initiative started less than ten years ago, please indicate changes since the start of the initiative.) For each change, please indicate if the change took place as a result of the initiative or not as a result of the initiative. Please check the most appropriate box for each line:

#### Effects on agriculture:

	This change took place as a result of the initiative	This change took place, but not as a result of the initiative	This change did not take place	I am not sure if this change took place, or it is too early to tell
Agricultural yield per unit of land area (e.g., tons per hectare) increased	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Agriculture became more profitable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Total area under agriculture and pasture increased	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental impacts of agriculture were reduced	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Agricultural biodiversity (agrobiodiversity) was protected or enhanced	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other benefit (please specify)

# Ecoagriculture Landscapes and Initiatives - Africa

## Effects on conservation and ecosystem services

	This change took place as a result of the initiative	This change took place, but not as a result of the initiative	This change did not take place	I am not sure if this change took place, or it is too early to tell
Rare, threatened, or endangered species were better protected	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall biodiversity of the region was better protected	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The amount or connectivity of natural habitats was increased	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water quality, quantity, or regularity improved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ecosystem services that support agriculture (e.g., irrigation water supply, pollination, soil fertility) were restored or protected	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other ecosystems services (e.g., urban water supplies, flood control, carbon storage) were restored or protected	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other benefit (please specify)

# Ecoagriculture Landscapes and Initiatives - Africa

## Effects on livelihoods and the poor:

	This change took place as a result of the initiative	This change took place, but not as a result of the initiative	This change did not take place	I am not sure if this change took place, or it is too early to tell
Food security or nutrition for landscape inhabitants were improved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Household cash income for low-income residents was increased	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Non-cash measures of livelihoods (e.g., greater material assets, cleaner or more reliable water, better educational resources) were improved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communities became less vulnerable to shocks and disasters (e.g., landslides, floods, droughts, epidemics)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Access to health services improved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other benefit (please specify)

# Ecoagriculture Landscapes and Initiatives - Africa

## Effects on governance, institutions, and social capital:

	This change took place as a result of the initiative	This change took place, but not as a result of the initiative	This change did not take place	I am not sure if this change took place, or it is too early to tell
Local communities gained capacity to sustainably manage agriculture and natural resources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local communities became more empowered to negotiate and participate in political decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coordination and cooperation among stakeholders (e.g., local communities, district government, private sector, NGOs) improved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coordination and cooperation among sectors (e.g., agriculture, environment, health) improved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Women gained power or capacity to improve their wellbeing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Traditional and local knowledge on agriculture and natural resources has been preserved and used	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other benefit (please specify)

### What has been the most successful aspect of the initiative?

### What has been the least successful aspect of the initiative?

## 8. Thank you!

Thank you very much for completing this questionnaire! In appreciation of your contribution, we will send you electronic copies of the Latin America review study in English and Spanish to the e-mail address that you provided. This study should be available by the middle part of 2012. You have also been entered to win one of three Apple iPad computers, which will be awarded to three randomly-selected respondents.

For more information about the Landscapes for People, Food and Nature Initiative that is supporting this study, please visit <http://landscapes.ecoagriculture.org>.