



THE ROLES OF TREES ON FARMS IN UGANDA

Current status and policy recommendations for future development

Introduction

With about 90% smallholder farmers reporting planting, growing, and protecting trees on their farms in Uganda (UBOS, 2014), Trees on Farm (TonF) have an important role to play socially, economically, and ecologically. Despite their importance, there is no established mechanism to report on Trees on Farms in national environmental statistics as well as natural capital accounting and valuation of ecosystem services; thus their contribution is least appreciated.

Because of institutional separation of forestry and agriculture sectors, policy support for TonF remains insufficient. Consequently, agribusiness value chains associated with TonF, are least developed, and their contribution to household economies is overshadowed by products and services from natural forests and forest

plantations. This brief therefore presents a case for TonF, justifying the need for stronger policy recommendations and actions, the inclusion of TonF into natural capital accounts and valuation of ecosystem services, appreciation of their contribution to food security, and resilience to climate catastrophes.

Specifically, the policy brief has three objectives:

1. Present the extent, coverage and adoption of tree growing on farms in Uganda.
2. Illustrate the contribution of TonF to biodiversity conservation, mitigation/adaptation actions and improvement of livelihoods.
3. Provide policy recommendations for enhancing TonF and the increased integration of trees in agricultural fields.

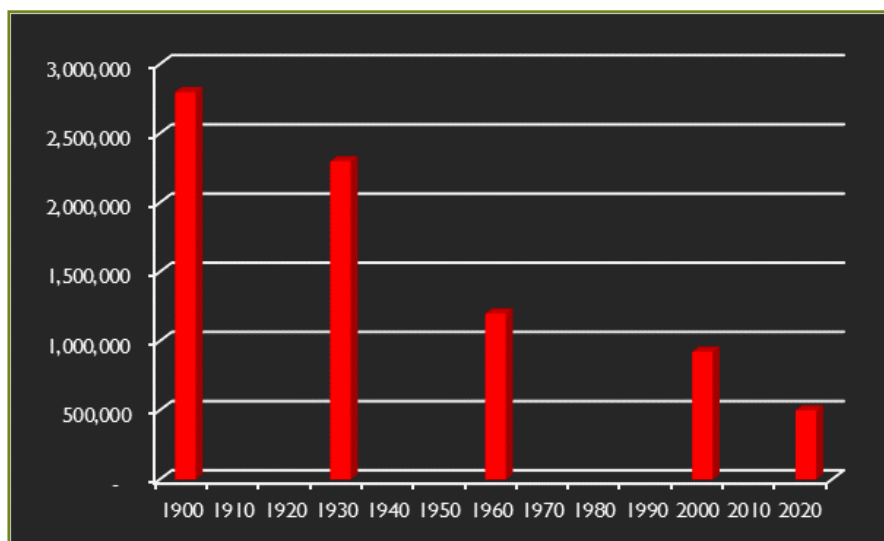


About TonF in Uganda

TonF is the integration of woody perennials in agricultural systems (World Agroforestry Centre, 1993). It encompasses trees in animal husbandry farmlands and trees on cultivated fields. The Uganda Forest Policy (2001) recognizes trees in farming systems as part of 'farm forestry'. In Uganda, TonF are managed under smallholdings within the 72% of the total land area under agriculture. Management of TonF in Uganda lacks policy support as forestry and agricultural sectors consider particular components of farm forestry in their areas of jurisdiction as opposed to an integral system.

The contribution of TonF to social, ecological, and economic development is under-looked and knowledge of geographical coverage and related attribute information remains limited. Although capturing tree-related information is comprehensive, there are no summaries for TonF in the Uganda Bureau of Statistics and the National Forest Management System. Analysis of TonF in national environmental statistics, natural capital accounting, as well as ecosystem valuations, is missing. As noted by Acharya, 2006, their role in ensuring the sustainability of agricultural production, climate resilience and biodiversity conservation in agricultural landscapes is therefore equally understated. Yet, there is a decline in forest cover in

Figure 1. Decline in forest cover in Uganda over the years.



protected areas (Figure 1), with the Ministry of Water and Environment, in 2019, predicting no forest cover by 2030, if the current trend continues. Engaging farmers to grow TonF is an important strategic option as emphasized by government programs such as the Sawlog Production Grant Scheme, the Farm Income Enhancement through Forest Conservation Project, the National Agricultural Advisory Services (and its related Operation Wealth Creation initiative) among others.

It is important that data and information to illustrate the coverage, contribution and value of TonF to livelihoods, contribution towards biodiversity conservation, and building resilience towards climate impacts, is collected to illustrate the social, economic and ecological contribution of TonF to development.

Extent and coverage of TonF

Uganda is predominantly an agro-forestry establishment. Approximately 72% (equivalent to 14.4 million hectares) of the total land area of Uganda (19,981,000 hectares) is



Shade trees in a coffee plantation.
Photo by: Phillip Kihumuro / ICRAF

agricultural land, with TonF, planted as either woodlots (for poles, fuel wood), windbreaks (for homesteads and crops), boundary planting, live fences, home gardens, orchards and in hilly landscapes as contour planting for soil and water conservation. A Living Standards Measurement study by the Uganda Bureau of Statistics, in 2010, based on a sample of 3,200 households, shows that 30% of the respondents had trees on farm. The share of smallholders that had fruit trees was 5.6%, those with tree cash crops stood at 27.2% while timber and/or fuelwood stood at 2.5%. These statistics serve to confirm that trees are grown on the farm at varying scales and for different motives.

Contribution and value of TonF to livelihoods

Firstly, TonF are lessening the looming scarcity of timber in the country. There is a big demand for timber both in the “informal” sector (sold by the roadside and within timber shades) and formal sector for construction and furniture. The Sawlog Production Grant Scheme (SPGS), from 2016 to 2020, recruited 520 eligible tree farmers to plant 6,000 hectares (for large scale) and 17,000 hectares for the small and medium-scale farmers. Approximately 93% of the grantees are small scale farmers, planting trees on their agricultural plots as woodlots. Annually, the District Forest Services across the country distributes over 3.6 million seedlings among farmers for tree growing on farms and the survival rate is estimated at 60% (Ministry of Water and Environment-Sector Performance Report, 2019). These will form important sources of forest products and services in the near future.

Approximately 27% of the most common type of trees found on farms is tree cash crops. In the financial year 2017/2018, coffee contributed export earnings of USD 489 million and cocoa earned USD 73 million (UCDA, 2018). In addition to export earnings, they contribute to household welfare, with some consumed locally (see Figure 2). However, their production is increasingly threatened by climate change. As such, farmers are encouraged to plant companion trees on farms to adapt to climate change.

Over 92% of Ugandan households depend on biomass in the form of firewood and charcoal (MWE, 2012). The National Charcoal Survey, 2016 indicates that 43% of the charcoal produced is from privately owned forests while 20% of the charcoal is from on-farm trees. If Uganda produces 2,144,338 Metric tonnes of charcoal per annum, it means 20% (equivalent to 428,867 metric tonnes of charcoal) of this is from TonF. If the 2,144,338 metric tonnes were to earn Value Added Tax at a rate of 18%, then charcoal would generate UGX 204,291,427,170 (equivalent to approximately USD 56 million) per annum. Of this, 20% (equivalent to USD 11.2 million) would be from TonF. In addition, TonF also meet the biomass demand for commercial activities such as the production of bricks and generation of electricity in some factories, which currently is not known. Annually Uganda requires 35 million bags of charcoal valued at USD 479 million. If 20% is from farm lands, then net worth

of charcoal produced from TonF is approximately USD 95 million annually.

The National Food Security Assessment Report, 2017, shows that 69% percent of the total population in Uganda is minimally food insecure and 26% of the total population is facing stressed food insecurity. With a population of 42.7 million people (UBOS, 2017), Uganda’s food demand will continue to grow. Through agroforestry, TonF have been earmarked as having strong potential in addressing problems of food insecurity through enhanced soil and water conservation, improved yield and direct nutrition provisioning of fruits and nuts among others. A recent study on agro-forestry and conservation farming (MWE, 2019) shows that there is an appreciation of the linkage between TonF and the wide menu of livelihoods associated with them. This is illustrated in Figure 3.

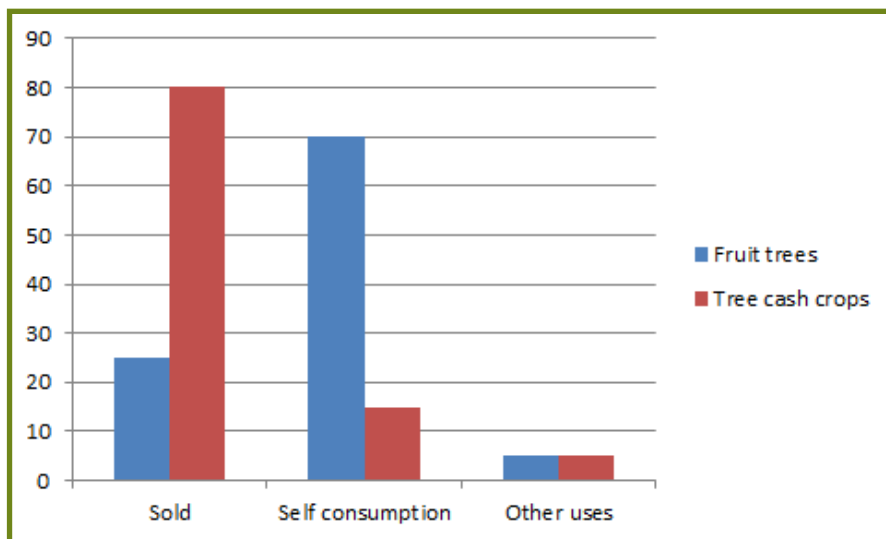


Figure 2: Proportion of trees on farms either sold consumed. Source: World Bank

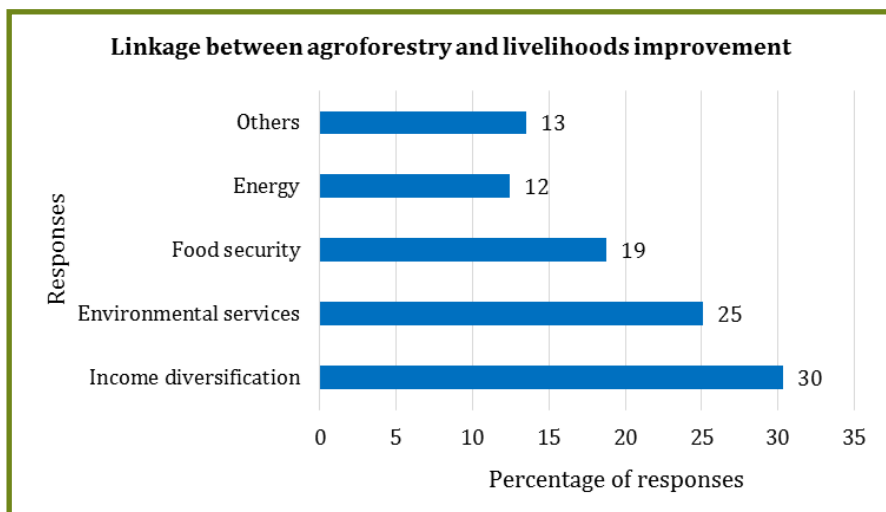


Figure 3: Linkages between TonF and livelihoods improvement. Source: MWE, 2019

Contribution towards biodiversity conservation and enhancement of carbon stocks

In a study conducted by Boffa et al., 2005, 25% of the 324 woody species found in Bwindi Impenetrable National Park, were encountered in the agricultural landscape, with 50% of these deliberately planted because of their conservation and ecosystem service provisioning value.

Since its establishment in 1999, ECOTRUST*, has worked with thousands of farmers, purchasing carbon credits accumulated out of growing TonF. This has helped diversify and increase income for rural farmers and their families whilst enhancing biodiversity conservation on farm. To date, over 6,200 hectares with TonF have been planted with potential to hold about 1.2 million tons of carbon dioxide, a big contribution to Uganda's Nationally Determined

*ECOTRUST is a Conservation Trust established in 1999 and deals in carbon sequestration with rural livelihood improvements through small-scale, farmer-led, agroforestry projects and ecosystem services by linking rural farmers to the international ecosystem service markets

Contribution under the Paris Agreement. In addition, TonF, under this project contribute to food and fuel security at household level. The payments for carbon credits serve as credit security for loans through established Village Saving and Loans Associations, which helps improve their quality of life.

Currently, there is growing interest in trees on farm demonstrated by government of Uganda funded project on farm income enhancement through forest conservation projects (MWE, 2019), specifically through capacity building for agroforestry and conservation farming and investing in agroforestry systems for a wide range of multiple benefits. The other contribution of TonF include among others fodder, shade, soil erosion control, soil fertility improvements, watershed management, medicine, windbreaks, crafts, among others, which have various value chains.

Barriers to adoption of tree growing on farms

Whereas TonF have social, ecological and economic benefits, there are limitations to the adoption of tree growing on farm. A recent training needs assessment conducted by the Ministry of Water and Environment for agro-forestry and conservation farming (MWE, 2019), targeting 185 respondents selected from 5 irrigation catchments of Wadelai, Mubuku, Ngenge, Doholl and Tochi, show that there was limited awareness about planting of trees on farm (50%) alongside limited awareness about institutions promoting agro-forestry. The other factors, representing percentages of respondents, that are considered, and may hinder adoption of TonF are shown in Figure 4.

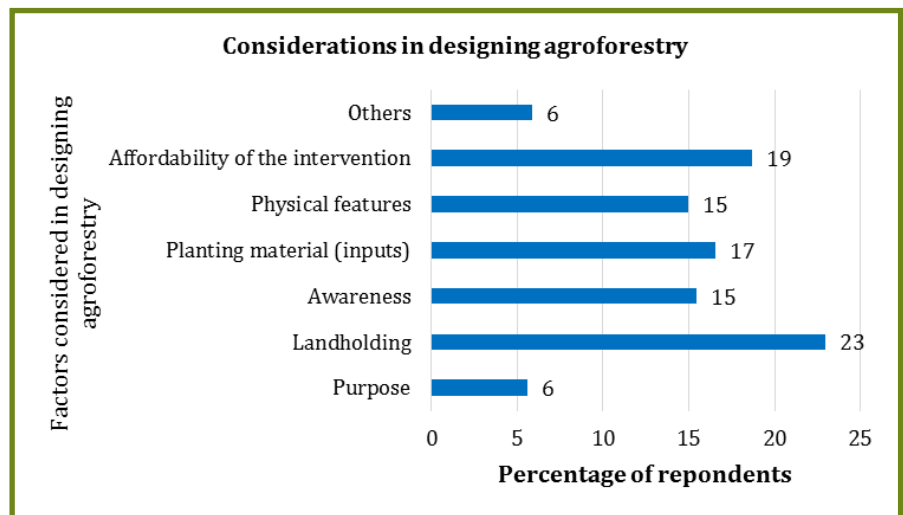


Figure 4: Factors considered before growing TonF



Tree nursery for Indigenous trees.
Photo by: ICRAF

Policy recommendations

Considering the above stated facts and figures that illustrate the importance of TonF, the following is recommended:

1. Integrate the importance of TonF in the forestry policy and legislation. An opportunity exists in the on-going process to review the current forestry policy and legislation.
2. Finalize the national agroforestry policy and related strategies that enhance the importance of trees on farm. Currently a draft exists but has not been driven through structures of government for endorsement.
3. Collect data on TonF and synthesize it for public use. Opportunity lies in national census conducted by the Uganda Bureau of Statistics, the National Forest Management System that is under development and the national capital accounting processes.
4. Incentivize the planting, growing and protection of trees on farm. Opportunities exist through the Sawlog Production Grant Scheme, the Farm Income Enhancement Project and the National Agricultural Advisory Services and related agricultural extension services.
5. Embrace TonF as both mitigation and adaptation actions in a changing climate. Opportunity lies in the finalization of the Climate Change Bill, the rollout of the National REDD+ Strategy and Nationally Determined Contribution towards the Paris Agreement.
6. Avail public information, education and demonstration of TonF. The opportunity is in the existing extension services delivery structures that go up to farmer level.



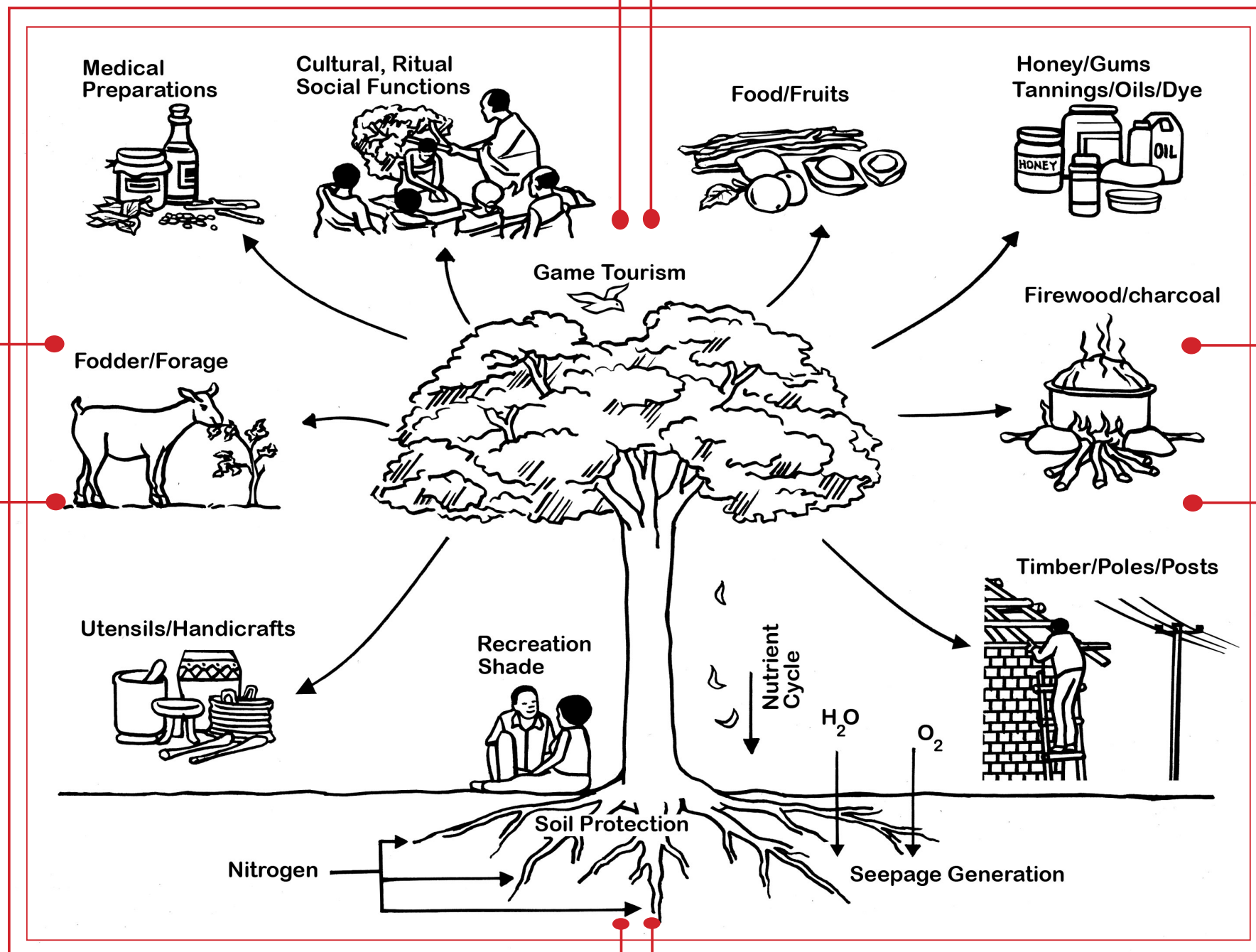
Trees on farmlands supporting livelihoods. Apiculture in Manafwa.
Photo by: Phillip Kihumuro / ICRAF

Mainstream the TonF agenda into central and local government structures through a National TonF Strategy, influencing national and district development planning process to embrace trees on farm.

Ministry of Water and Environment, and the Ministry of Agriculture, Animal Industry and Fisheries advance the TonF agenda through joint planning and rollout of projects and programs relating to TonF coordinated by Agro-forestry Coordination Unit.

Enhance data collection and analysis to demonstrate the usefulness and contribution of TonF to national, local and household incomes; including natural capital accounting, environmental statistics and ecosystem valuations

Engage the private sector to enhance and promote the business sense of TonF using selected value chains and exploring agribusiness opportunities for trees on farm.



Enhance the role of TonF in biodiversity conservation, ecosystem services and provisioning, livelihoods improvement and building resilience towards climate change catastrophes and impacts at community level

Maintain meaningful, productive and successful research networks aimed at engagement of researchers and dissemination, and translation of research on TonF to targeted research recipients.

Engage the National Agricultural Advisory Services, the Operation Wealth Creation, Civil Society Organisations and extension services delivery structures at sub-county level to deliver extension services for TonF to farmers.

Rollout a national evidence-based communications and awareness campaign, supported with relevant research data and information, premised on demonstration sites, which encourages farmers to integrate trees on farm.

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Cover photo: Trees on farms essential for
landscape restoration - Bududa, Uganda.
Photo by: Phillip Kihumuro / ICRAF