Voluntary Guidelines for
Forest Landscape Restoration Under AFR100

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1. INTRODUCTION

Participants at the first AFR100 annual meeting in Addis Ababa in October 2016 requested guidance on forest landscape restoration (FLR) from the AFR100 Secretariat. This white paper seeks to introduce important concepts regarding the restoration of deforested and degraded landscapes and to provide an overview of guiding principles for FLR implementation.[1]

Nearly two-thirds of Africa's land is degraded. This results in millions of people facing hunger, malnutrition and poverty; to survive, they have to further deforest and overexploit the continent's natural resources. These actions not only intensify the effects of climate change, but they also severely hinder economic development. However, this also means that Africa has the largest restoration opportunity of any continent: more than 700 million hectares (1.7 billion acres) of degraded landscapes that can be restored.

Degraded land has a cost both to local people and national economies, promoting natural disasters like flooding and erosion and furthering social conflict as people seek better access to food and water. In Africa, the cost of on-going soil erosion from croplands alone is estimated to be USD 4.6 trillion over the next 15 years, while costs to restore these croplands is estimated to be USD 244 billion over the same period (ELD Initiative and UNEP 2015). In Rwanda, it is estimated that for every RWf 1 invested in restoration, it would create RWf 1.20 worth of ecosystem goods and services. Clearly, the cost of inaction is high.

Landscape restoration, when supported by national policies, has been shown to be achievable in many countries of Africa, as demonstrated in the three case studies in this document. For example, across large areas of the Sahel (Case Study 1), farmer-managed natural regeneration has restored large areas, while in Eastern Africa, working on food and water security in a watershed has begun to transform livelihoods and ecosystems (Case Study 2), and in the humid tropics, agroforestry helps farmers to restore the productivity of their fields and transform their livelihoods (Case Study 3). Thus, landscape restoration increases food, nutrition and water security; promotes local business and social justice; and builds resilience to disasters and climate change. Recognizing this opportunity, the African Union set an ambitious target to initiate restoration on 100 million hectares of degraded land by 2030.

Case Study 1. The Great Green Wall of Sahelian West Africa: farmer-managed natural regeneration

Since 2000, 16% of the Sahel is found to be "re-greening" with increased tree cover. Although rainfall has increased over several decades, this re-greening is thought to be due to increased tree growth and soil and water conservation achieved as farmers reclaim centuries-old techniques for

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[1] See companion AFR100 white paper on FLR and Monitoring.

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restoring and maintaining trees and woody plants on their arid croplands. Such methods, including farmer-managed natural regeneration, have resulted in the restoration of 200 million trees in more than 3,000 km^2 in the Maradi and Zinder regions of Niger. Importantly, this process has also enabled local people and institutions to make participatory decisions, helping them adapt their ecosystems and livelihoods to be resilient to climate change and disaster. These FLR actions contribute to the Great Green Wall initiative, which seeks to increase sustainable land management in the northern Sahel.

Based on Pye-Smith 2013.

2. WHAT IS FOREST LANDSCAPE RESTORATION?

FLR is the long-term process of regaining ecological functionality and enhancing human well-being across deforested and degraded landscapes. FLR is implemented using a landscape approach, combining natural resource management, restoration opportunities and livelihood considerations across jurisdictional boundaries with an aim to restore a mosaic of land uses, including forests and woodlands, pastures, croplands, wetlands and more (Fig. 1). For this reason, FLR is best implemented through a cross-sector approach that engages multiple ministries and levels of government.

Fig. 1. A restoration landscape with many land uses and stakeholders (IUCN and WRI 2014).

FLR's importance is underscored by numerous African countries' commitments to AFR100 as the regional contribution to the Bonn Challenge, and the restoration components of several international conventions (Table 1). FLR is a way for countries to simultaneously implement their commitments to international agreements on the environment and national development.

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Table 1. How FLR relates to international conventions and approaches to sustainable development.

United Nations Framework Convention on Climate Change (UNFCCC)	United Nations Convention to Combat Desertification (UNCCD)	Convention on Biological Diversity (CBD)	Sustainable Development Goals (SDGs)
FLR enhances ecosystem services and increases carbon stocks to mitigate climate change impacts. FLR strategies are designed to ensure adaptation to climate change.	FLR goes beyond counterbalancing land degradation to achieve land degradation neutrality (LDN); LDN is a zero-net effort, FLR is a positive-net effort.	The CBD calls for the restoration of 15% of degraded ecosystems. FLR is recognized as one way to achieve conservation and restoration of biodiversity.	FLR addresses the SDGs on poverty, hunger, gender, water, energy, sustainable production and consumption, climate change and life on land.

FLR interventions are identified through consultations with national government, local communities and other stakeholders. A step-wise and iterative process is carried out to account for the national and local context and sustainable development objectives, to assess and prioritize restoration opportunities, and to scale up FLR. Key indicators are identified to monitor progress and desired impacts, and provision is made for adaptive management for successful implementation of FLR. Restoration can be misconceived to take too long or remove land from production; however this is not the case. For example, when FLR is implemented across a watershed in collaboration with farmers and industry, restoration, increased productivity, and cleaner water can be achieved within a few years (Case Study 2).

Case Study 2: Restoring water and food security in the Uluguru Mountains of Tanzania

Approximately 150,000 people live in the upland Uluguru Mountains, where forest cover has been declining since at least the 1950s. 31% of this population lives below the poverty line and depends on subsistence agriculture. At the same time, the area suffers from high soil erosion and decreased water flows in the Ruvu River, the latter of which costs USD 300,000 per month for beverage companies to treat. In one catchment of the Ruvu River, a payment for ecosystem services (PES) scheme between Coca Cola, Dawasco and the Kibungo Juu community was developed and fostered by the World Wide Fund for Nature and CARE. It focused on ensuring a clean water supply for the beverage industry while also encouraging the farmers to adopt soil conservation measures to benefit production.

Since 2012, more than 1,200 farmers have participated (42% women) resulting in more than 300,000 trees being planted to restore agroforestry systems, supported by extension services. Farmers intercrop with annual crops such as beans and groundnuts. By 2010, 134 participating farmers and 3 institutions were paid approximately USD 1,000. Due to restoration, the production of annual crops significantly increased (totaling USD 13,000) and the river has less sedimentation. More than 67% of participants said that the intervention had improved their harvest, income and food. Local ownership was high, with strong involvement from farmer groups and a wider group which linked the farmers with the water users and government agencies (e.g. water, forest, environment and agriculture authorities).

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Although PES can be hindered by tenure, historical factors of land eviction, and lack of technical investments, it can be successful when combined with high-value crops, increased production, technical training, and continuous consultation and negotiation with all stakeholders.

Based on Lopa 2012 & Lokina and Innocensia 2016.

The FLR approach is centered on stakeholder engagement and human well-being; without meeting the needs of local people FLR will fail. This engagement is critical since FLR works across densely populated landscapes in which negotiated solutions are needed for restoration. Multiple stakeholders participate in restoration interventions across a wide geographic area or landscape (Fig. 1), where multiple land uses are considered. In these landscapes, complementary services such as pollination, erosion reduction, and watershed security are critical for the success of restoration within the landscape, and in many cases these services have been degraded and are in need of restoration themselves. Site-by-site restoration cannot deliver this range of services alone, and so restoration needs to be perceived in different ways across the landscape and in the contexts of land-use policy and historical and cultural factors.

To enable restoration, both public and private finance must be considered. Investment packages to address these issues across multiple land uses can include how public and private sector actors can be incentivized to invest in FLR and its associated products, including timber, non-timber forest products (NTFPs), agricultural products, emission reductions, and other value chains that are linked to FLR activities. The redirection of domestic funds to restoration strategies should also be considered.

3. AFR100 GUIDING PRINCIPLES FOR RESTORATION IN AFRICA

These guiding principles for FLR[2] build on those developed by the Global Partnership on Forest Landscape Restoration (GPFLR 2016) and take into consideration the needs of decision-makers working in the African context and with AFR100 pledges.

1. RESTORING MULTIPLE ECOSYSTEM FUNCTIONS

FLR is achieved by accounting for and restoring multiple landscape functions (e.g. reducing erosion, increasing agricultural productivity), and managing the trade-offs to improve the well-being of people and the planet.

The FLR approach does not focus on restoring a landscape back to a pre-existing state. Rather, it restores "forward" to meet the capacity of managed landscapes to provide a range of ecosystem goods and services. These services also provide a range of consumable and marketable products that can support local livelihoods and global markets.

2. INTEGRATED MANAGEMENT OF LANDSCAPES

FLR must work across the whole landscape and its associated land uses, not just individual sites.

The solutions that FLR provides to issues such as food and water security and biodiversity require addressing restoration at a scale that encompasses multiple land uses and ecological

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[2] These principles could be expanded to include other elements not specific to FLR, such as rights, governance, and long term commitment.

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functions. Integrated management of restored landscapes encompasses small and large settlements and can be organized within and across administrative units, biomes, and other jurisdictions.

3. RESTORATION STRATEGIES SUPPORTING MULTIPLE INTERVENTIONS

FLR can be implemented using a range of restoration strategies and improved natural resource management practices, from natural regeneration to soil and water conservation as well as tree planting.

Restoration across a landscape requires the simultaneous deployment of several restoration interventions, including those related to the improved management of trees, soil, water and other natural resources for agricultural, forestry, watershed and water management, conservation of biodiversity and other land uses.

4. PARTICIPATORY DECISION MAKING

FLR includes active negotiation and collaboration among stakeholders through inclusive processes and in promoting effective governance institutions.

In a landscape, multiple stakeholders and a diversity of partners is typical, including the private sector, governmental bodies and communities, women and youth. Stakeholders will have diverse values, interests, and views on which specific ecosystems or their associated services are important to maintain or restore.

5. PROTECTION OF NATURAL ECOSYSTEMS TO ENHANCE RESILENCE

FLR avoids further degradation or conversion of natural forest cover and other ecosystems.

FLR should consider how to avoid a loss of biodiversity and reduction in the diversity of land types. Intact ecosystems should be conserved where possible. FLR should incorporate measures to restore the resilience of ecosystems and associated rural communities to facilitate their adaptation to climate change.

6. MONITORING, LEARNING AND ADAPTING

FLR is a process of continuous improvement based on learning and adapting to local conditions. FLR interventions need to include provisions for robust monitoring systems to assess and report on progress and to facilitate learning and adaptive management.

FLR is a long-term restoration process. Adapting restoration goals and continuing engagement with stakeholders are part of that process, especially as stakeholders, policies, and techniques may change over the course of the restoration process.

7. POLICY COHERENCE AROUND NATIONAL COMMITMENTS AND LAND USE

FLR outcomes are shaped by, and therefore need to address, the interactions among multiple land-use and other sectoral policies and national and international commitments.

Land-use policies may conflict with restoration commitments, creating a barrier to achieving a country's pledge to the AFR100. Countries may need to resolve conflicting policies that block the effective implementation of FLR. This may include changing policies and introducing meaningful cross-ministerial collaboration.

8. NATIONALLY OWNED AND DRIVEN

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FLR implementation should be based on a coherent national restoration strategy, equipped to guide and prioritize public and private sector investment in FLR. Strategic guidance for FLR investments will need to be integrated into related programs to capitalize on opportunities for synergies. This can reinforce logical linkages between FLR and other concerns (Table 1).

FLR ideally supports national policies and restoration commitments across a variety of land uses and with respect to multiple types of sustainable development commitments and program funding streams. To achieve AFR100 objectives and ambitious restoration targets, financing from a single source is insufficient, and FLR needs to be mainstreamed into overall economic development planning and budgeting.

4. SCALING UP FLR AT LOCAL AND NATIONAL LEVELS

In a given country there may be many smaller restoration efforts, however they likely will remain limited in impact. Operationalizing FLR at scale, a key issue for achieving the AFR100 targets, requires moving from a site and the stakeholder interests therein to those of the wider landscape.

Restoration of the ecological system is closely linked to the restoration of the economic, social and climate systems (Fig. 2), whereby restoration of one system impacts all others. Governance is a key part of the enabling environment which can impact restoration success across these systems and at the local, national and international scales. Scaling up from a site to a landscape requires enabling conditions such as leadership, long-term stakeholder engagement, a shared vision, good governance, funding, monitoring progress, expertise, inclusiveness, and clear goals. However, there will always be trade-offs as land users and owners negotiate restoration options across a landscape.
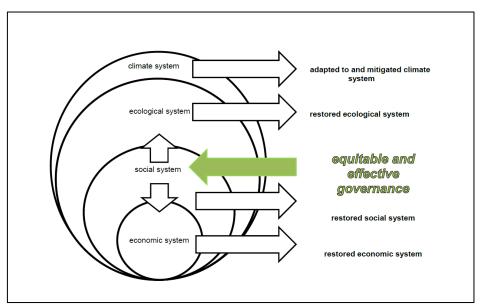

Fig. 2. Governance is key in restoring systems at multiple levels, linking climate, ecological, social and economic systems (Walters & Wild 2016).

To enable the landscape approach across a variety of land uses, a range of restoration options is required. These options can be identified throughout a landscape by applying the Restoration Opportunities Assessment Methodology (ROAM). The move from pledge to implementation often (but not always) involves a ROAM process, an adaptive and iterative analysis at the national or sub-national level where restoration approaches are suggested. This analysis provides critical

information, using stakeholder consultation to identify the types of restoration interventions that are required, and to supply analyses related to cost-benefit, success factors, and restoration finance packages. The ROAM process creates a space where decision-making on FLR opportunities and trade-offs can be discussed and negotiated among the different stakeholders.

A variety of restoration interventions will be proposed, including plantation forests, natural regeneration, agroforestry, watershed protection or erosion control among others (Fig. 3). These can be implemented using the landscape approach to address multiple needs, such as water and food security (Case Study 2).

The FLR options framework			
Land Use	**Land sub-type**	**General category of FLR option**	**Description**
Forest land Land where forest is, or is planned to become the dominant land use → **Suitable for wide-scale restoration**	If the land is without trees, there are two options:	1. Planted forests and woodlots	Planting of trees on formerly forested land. Native species or exotics and for various purposes, fuelwood, timber, building, poles, fruit production, etc.
		2. Natural regeneration	Natural regeneration of formerly forested land. Often the site is highly degraded and no longer able to fulfil its past function – e.g. agriculture. If the site is heavily degraded and no longer has seed sources, some planting will probably be required.
	If the land is degraded forests:	3. Silviculture	Enhancement of existing forests and woodlands of diminished quality and stocking, e.g., by reducing fire and grazing and by liberation thinning, enrichment planting, etc.
Agricultural land Land which is being managed to produce food → **Suitable for mosaic restoration**	If the land is under permanent management:	4. Agroforestry	Establishment and management of trees on active agricultural land (under shifting agriculture), either through planting or regeneration, to improve crop productivity, provide dry season fodder, increase soil fertility, enhance water retention, etc.
	If it is under intermittent management:	5. Improved fallow	Establishment and management of trees on fallow agricultural land to improve productivity, e.g. through fire control, extending the fallow period, etc., with the knowledge and intention that eventually this land will revert back to active agriculture.
Protective land and buffers Land that is vulnerable to, or critical in safeguarding against, catastrophic events → **Suitable for mangrove restoration, watershed protection and erosion control**	If degraded mangrove:	6. Mangrove restoration	Establishment or enhancement of mangroves along coastal areas and in estuaries.
	If other protective land or buffer:	7. Watershed protection and erosion control	Establishment and enhancement of forests on very steep sloping land, along water courses, in areas that naturally flood and around critical water bodies.

Fig. 3. Typology of common restoration interventions (IUCN and WRI 2014).

For FLR to be scaled up to wider landscapes and taken up at a national level, decision-makers and stakeholders need to be equipped to do so. Capacity development is critical to putting in place appropriate methodologies and tools, and the generation of information is essential. FLR trainings, train-the-trainer programs, and fostering national and sub-national champions of FLR are important elements to be considered in equipping FLR decision-makers and stakeholders (Case Study 3).

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5. CONCLUSION

Restoring degraded and deforested land helps ensure food, water and livelihood security for vulnerable communities, generates economic opportunities for businesses and governments, and preserves biodiversity. And decision makers are taking notice in Africa and around the world – joining the restoration movement, with AFR100 and the Bonn Challenge providing an important framework for FLR action. As AFR100 nears its goal, strategic and streamlined implementation is the path forward. This white paper is just the beginning. The AFR100 secretariat partners and countries will continue to travel this road together, learning and restoring along the way.

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