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Reshaping the Terrain
Landscape Restoration in Ethiopia

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Photo by Mokhamad Edliadi/CIFOR

Introduction

Although the need to restore landscapes was emphasized as early as the 1980s, the subject got significant global attention following the Bonn Challenge in 2011 and the New York Climate Summit in 2014. The global community proposed to rehabilitate 350 million hectares by 2030. Ethiopia made the largest pledge - to restore 22 million hectares.

The Climate Resilient Green Economy Strategy (CRGE 2011) aims to make Ethiopia a middle- income country by 2025, and to build carbon neutral economy by 2030. Ethiopia's 2016–2020 five-year development plan is informed by the CRGE strategy, and aims to put 2 million hectares of natural forests under participatory forest management (PFM) while identifying and demarcating 4.5 million hectares of degraded land for restoration, afforestation and reforestation.

Restoration efforts

Ethiopia's landscape restoration efforts are concentrated in the mid- and highland areas of the country where most of the population lives and where deforestation and land degradation are severe. However, large scale land use changes due to commercial farming, bush and desert encroachment are occurring in the lowland areas of western, northeastern and southern Ethiopia where FLR areequally needed.

1. Major approaches of FLR are:

- **Improving management of state owned natural forests** with de facto open access to reduce deforestation and forest degradation by involving the surrounding communities through Participatory Forest Management (PFM)
- **Putting denuded and degraded hillsides and communal grazing lands under area exclosures (AE)** schemes where the land is protected from human and livestock interference, natural regeneration is assisted, and in some cases afforestation or reforestation is practiced

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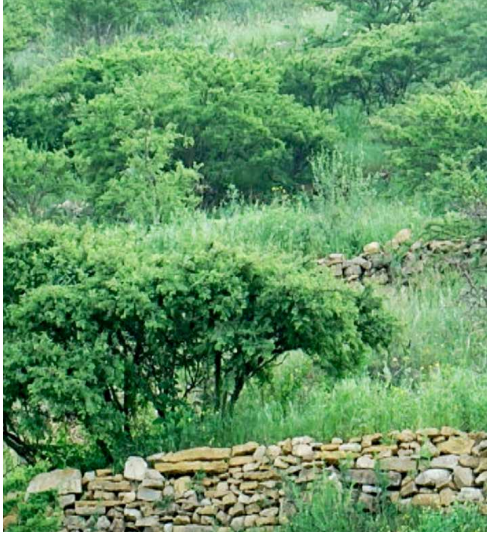

Soil and water conservation work on degraded hillsides (left) and rehabilitated land after being put under exclosure (right) (Source: MEF 2014)

Farmer-led use of Acacia decurrens to rehabilitate degraded lands and meet wood and energy needs in Fagitalekoma district, Western Ethiopia. (Photo by H. Kassa)

- **Soil and water conservation works, and tree planting** activities on degraded agricultural landscapes through a major state led and donor-supported sustainable land management program complemented by government led mobilization of communities. Annually, millions of rural households are mobilized soon after the harvest season to provide free labor for natural resources management work.
- **Smallholder agroforestry systems,** tree planting on landscapes and establishing woodlots. In southern Ethiopia, agroforestry has since long been developed as a traditional land use system, allowing agriculture and forest products to be produced by farm households. Encouraged by improved land tenure security since the mid-2000s, smallholders in the central and western highlands are rapidly expanding woodlots to meet wood demand for subsistence and for markets.

The government of Ethiopia considers PFM and AE as mechanisms for rehabilitating degraded forests and agricultural landscapes. These mechanisms are key elements of the country's strategy for accomplishing its commitment to the Bonn Challenge, a global effort to restore 150 million hectares of deforested and degraded land by 2020, and 350 million hectares by 2030.

PFM is being piloted to improve management of forests and woodlands. Area exclosures supported with soil and water conservation, assisted natural regeneration and enrichment planting are considered strategies for restoring degraded landscapes. Various tree-based restoration options are proposed for improving tree cover in various landscapes – lakesides and riverbanks, buffer zones of natural forests, rangelands and agricultural landscapes (MEFCC 2018).

2. Constraints to FLR

Thus far, the cost of FLR is borne largely by rural communities though a sustainable land management program has been assisted by donor support. The sustainability of community mobilization by the government and donor support for land management programs needs rethinking. Additionally, population pressure, lack of national land use policy and land use plan (to define and demarcate forest lands and govern and influence land use changes on managed landscapes), lack of a clear national strategy to guide the planning and implementation of landscape rehabilitation initiatives at large, low level of use of existing technology and knowledge in informing the process, sub-optimal community participation, persistent tenure insecurity around rehabilitating landscapes, lack of well-defined and agreed upon net benefit sharing arrangements, and poor productivity of restored landscapes are major challenges (Kassa and Lemenih 2014; Kassa et al. 2015). Constraints also include lack of incentives to attract private and public-sector investment in FLR, low technical and managerial capacity of communities and their CBOs, inadequate follow up and support to actors engaged in managing rehabilitated forests and landscapes (Kassa et al. 2017).

3. Enabling conditions for FLR

- Improving availability of preferred tree, shrub and herbaceous species planting materials to better meet agreed upon FLR objectives
- Facilitating the use of available Geographic Information System (GIS) technologies, technical and indigenous knowledge, better species-site matching, and considering the resources of land managers, state agencies and non-state actors in defining FLR options

- Careful assessment of the costs and benefits of alternative rehabilitation options to choose those with maximum returns
- Active engagement of key stakeholders in FLR
- Actively engaging stakeholders and making informed and participatory decisions to select sites for landscape restoration, negotiate and agree on balancing conservation and economic objectives of restoration, set short and long term objectives, and jointly identify the means to achieving those objectives
- Exploring all options to maximize total productivity of rehabilitated landscapes in order to make these landscapes economically competitive with other land uses
- Putting in place and enforcing equitable net benefit sharing arrangements with key actors, notably communities
- Building capacity of CBOs and local level government authorities to manage conflicts through aligning with existing laws, legalizing and enforcing agreed upon community bylaws so they can manage conflicts locally, inexpensively and quickly
- Building systematically the human and institutional capacity of actors in FLR (land managers, research and extension staff, planners and policy makers, etc.) to properly plan, implement, monitor, evaluate and report FLR initiatives.

A child holds a sapling that will be planted in a reforestation area, Ethiopia. (Photo by Mokhamad Edliadi/CIFOR)

4. Steps taken to achieve Ethiopia's restoration commitment

In view of coordinating and leading FLR and accomplish national restoration pledge, the Government is following a two-pronged approach of (i) improving conservation and management of landscapes that need to be conserved and responsibly managed; and (ii) promoting tree based restoration options in landscapes where improving tree cover is needed to restore economic and ecological functions.

Into the first category fall reserved, sacred and dense natural forests; agro forestry systems with >30% tree cover; pastoral areas with > 20 percent tree cover; natural grasslands and wetlands as the existing tree cover in these landscapes is considered optimal. For landscapes where tree-based landscape restoration options are proposed, areas have been identified and potential tree-based landscape restoration maps produced for: establishing buffer plantations around protected areas and national forest priority areas; restocking degraded natural forests; restoring secondary forests; establishment and sustainable development of woodlots, agro forests, and home gardens; establishment and sustainable development of commercial plantations (smallholder and industrial); supporting and strengthening agri-silviculture, agro-silvo-pastoralism and silvo-pastoralism; establishing tree-based buffer zones along rivers, lakes, and reservoirs; and planting trees along road sides, and building parks and other urban green infrastructure (MEFCC 2018).

To identify areas for conservation and for restoration, prioritization criteria used are: deforestation and forest degradation risk; grazing pressure, land degradation and soil erosion risk; wood fuel deficiency; water scarcity, food insecurity; biodiversity hotspots; and likelihood of such hazards as landslides, flooding, etc.

The next step is to address constraints and consider enabling conditions discussed earlier and to put in place implementation modalities, institutional arrangement, stakeholders' engagement and financing mechanisms of FLR to sustain engagement of land managers and positive impacts.

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