Landscape Restoration for Achieving Community and Environment Resilience: the experience from Ethiopia

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June 2021

Innovative water solutions for sustainable development
Food·Climate·Growth

Context

- Hot spots of land degradation cover about 29% of global land area.

- Many forms – affects all kinds of land resources.

- Impair livelihood, biodiversity and the planet's ability to combat climate change.

- Affecting the well-being of about 3.2 billion people – 10% AGGP.

- Impact - spatially variable – severe in SSA.

- **Ethiopia** – ¼ the total land is degraded – affecting nearly one-third of the population (ca 40 million).

Degraded landscape in the Ethiopian highland (Photo: Wolde Mekuria)

Sources: Le et al. 2016; Chirwa 2014; Gebreselassie et al. 2016

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Measures to Restoring Degraded Landscapes in Ethiopia

- Since the 1970s and 80s, several national programs have been implemented to restore degraded landscapes.
  - SLM I, II;
  - The Productive Safety Net Program (PSNP),
  - Community based watershed development.

Goals

- Reducing land degradation,
- Improving agricultural productivity, and
- Protecting or restoring ecosystem functions and diversity in landscapes.

Integrated watershed development activities in Ethiopia (Photo: Wolde Mekuria)

IDA, GEF, GIZ, and the World Bank provided financial support for the SLM programs.

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Contributions to Achieving Resilient Community and Environment

- Restoring degraded landscapes through water and land management practices boosts landscape productivity *(Mekuria et al. 2017, 2018, 2020).*

- Landscape restoration measures improves soil health, animal health and biodiversity *(Mekuria et al. 2015; 2017).*

Food security, & Resilient community & environment.

Vegetation and soil sampling for assessing impact (Photo: Wolde)

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Continued …

- Restoring degraded landscapes supports livelihood diversification while marinating or improving the environment.

- Restoring degraded landscapes through establishing exclosures (Picture) enabled the integration of income generating activities such as livestock fattening **(Mekuria et al. 2020).**

Restored landscapes increase grass production and enable the integration of livestock fattening (Photo: Wolde Mekuria)

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Continued …

- Play Vital role in the **Hydrological cycle.**

    - Reducing soil erosion.
    - Increasing dry season water flows.
    - Decreasing runoff and sediment load.
    - Increasing groundwater recharge & number of springs.

*Increase the life span of water infrastructures (irrigation and hydro-dams) – increase access to water for multiple use – increase agricultural productivity of smallholder farmers (Food secured community; **Tamene et al. 2005**).*

Automatic rain gauge installed in a watershed (Photo: Anwar).

Continued …

- Landscape restoration enables low carbon development and creating green jobs.

- Youth can engage in income generating activities.

- Restored landscapes are better able to adapt to and mitigate climate change and strengthen the resilience and adaptive capacity of communities.

- Increase the supply of non-timber forest products (NTFPs) that are an important source of food and income for rural communities.

Example of a restored landscape in Ethiopian highland (Photo: Wolde Mekuria)

Sources: Beatty et al. 2018, IUCN 2019, etc.

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Role of Policies in Watershed Management

Watershed management works best when there is a supportive policy and legal framework.

- Watershed management activities (watershed & political boundaries); conflicting each other – having an appropriate policy supports to achieve greater integration of the two points of view (***Reconcile the conflicts between natural and political boundaries***).

- Policies have a role in harmonizing economic development and environmental protection (creating collaboration between upstream and downstream communities).

- Policies provide for public investments, regulations, incentives, and taxes that recognize the links between upstream and downstream water and land use activities.

- Policies are also key to achieving equitably distribute costs and benefits among political units, communities, and individuals according to who pays for and benefits from watershed management policies and resulting actions.

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Relevant policies in Ethiopia

The Government of Ethiopia has increased its focus on sustainable environmental management and development in recent years.

This is reflected in the adoption of various policies, strategies and proclamations.

Policies:

- Environmental Policy of Ethiopia (1997);

- Forest Development, Conservation and Utilization Policy (2007);

- Water Sector Policy (2001)

- National Land Use Policy (2019).

Regulatory approaches

- Climate Resilient Green Economy (CRGE) Strategy (2011);

- Growth and Transformation Plan (2016 Conservation Strategy of Ethiopia (CSE)

- Environmental Impact Assessment Proclamation (2002)

- Guidelines for Gender Mainstreaming in Agricultural Sector (2020),

- Gender Equality Strategy for Ethiopia's Agriculture Sector

- Ethiopia's Climate Resilient Green Economy - National Adaptation Plan (2019).

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International Initiatives for Landscape Restoration

- Some of the global initiatives such as the Bonn challenge, AFR100, etc.

- Seen as a unifying mechanism to help countries to implement landscape restoration at scale in support of achieving the **different international agreements (IUCN 2019)**.

- Bilateral collaboration in landscape management are also keen in sharing knowledges and build the capacity of local level practitioners.
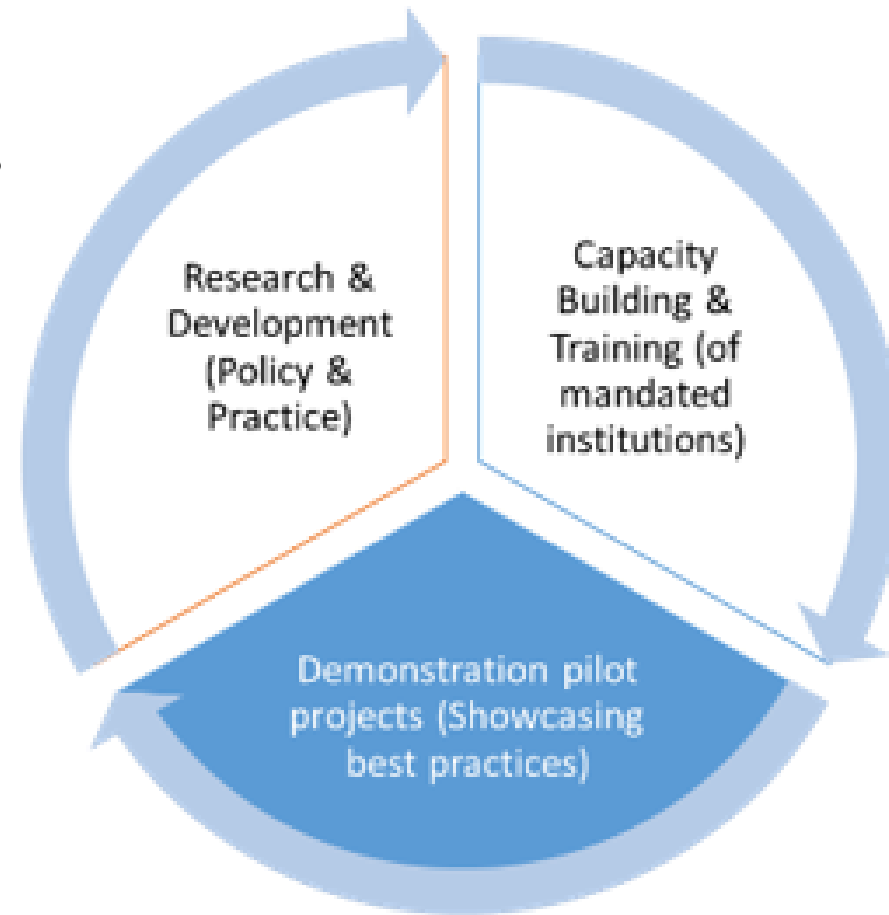

Convention on Biological Diversity

Land Degradation Neutrality (LDN) Fund

Global Landscapes Forum
London, 10 June 2015

UNITED NATIONS PARIS CLIMATE AGREEMENT SIGNING CEREMONY — 22 APRIL 2016 —

SUSTAINABLE DEVELOPMENT GOALS

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SIWI-IWMI Bilateral Collaboration for Landscape Management

- Keen in sharing knowledges and build the capacity of local level practitioners.

- SIWI-IWMI brings several actors and creates opportunities to work together – facilitate knowledge and experience sharing.

Research & Development (Policy & Practice)

Capacity Building & Training (of mandated institutions)

Demonstration pilot projects (Showcasing best practices)

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Business Model Approach to Sustaining Landscape Restoration Measures

- Conservation/restoration measures are generally beneficial in the long-term.

- Sustaining long-term conservation measures is still a challenge.

  - Hamper poor households and communities from continuing their existing activities,
  - Lack short-term economic benefits.
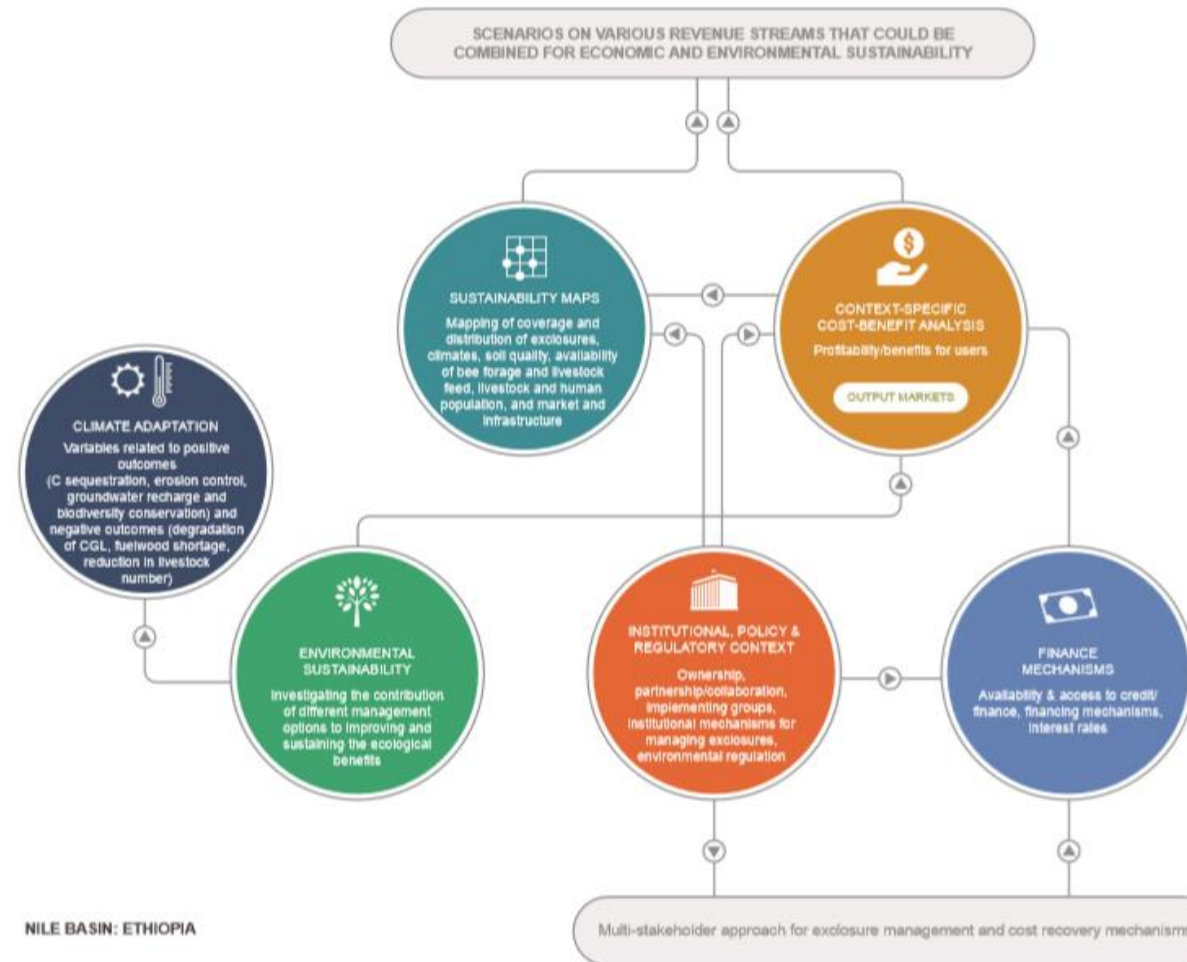
- Revenue streams

- Suitability mapping

- Environmental suitability

- Institutional, Regulatory and Policy context

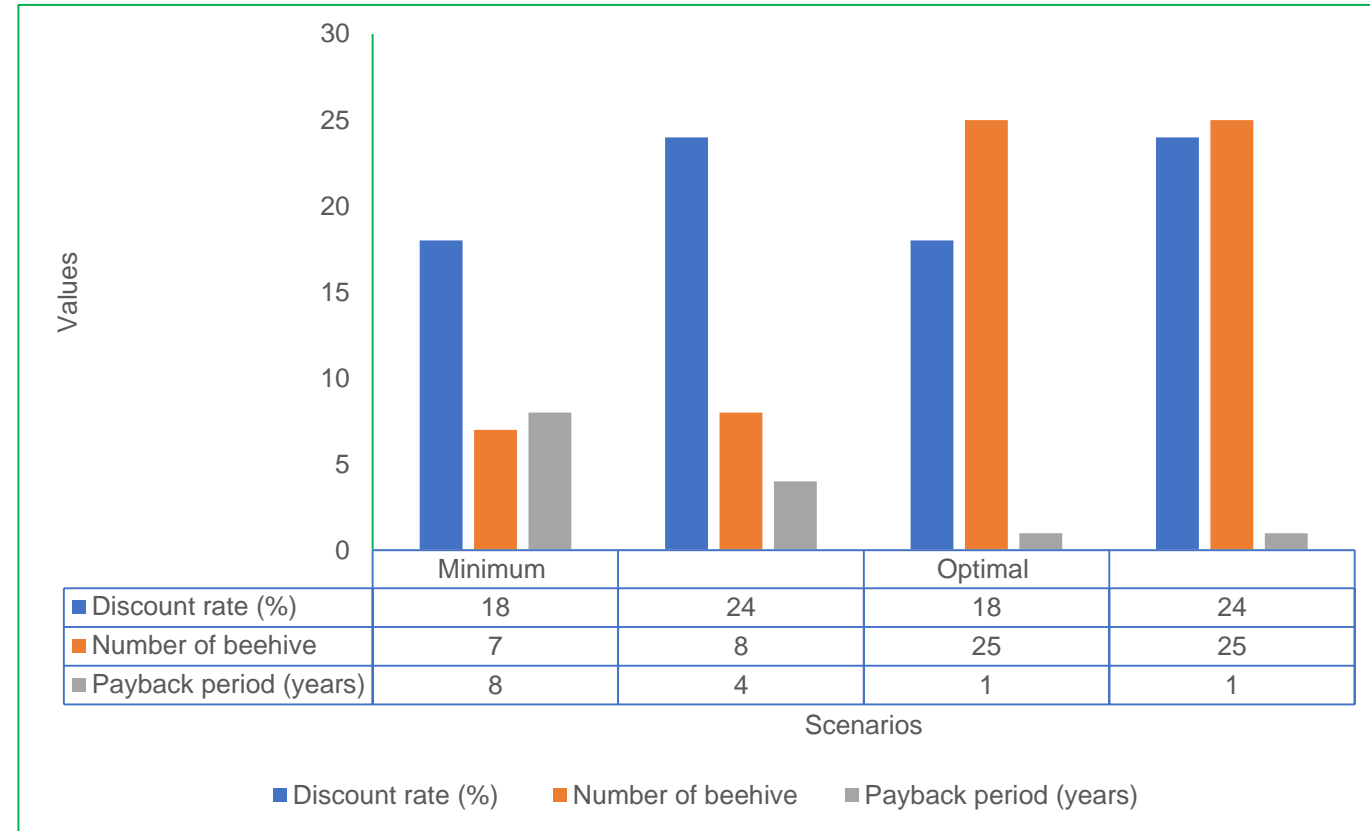- Financing mechanisms

- Cost-benefit analyses

Balance - short-term economic losses with longer-term economic and environmental gains (Mekuria et al. 2020).

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Continued …

- The adoption of a business model approach could be effective in bridging the gap between landscape restoration and ecosystem services in the long term and local economic losses in the short term.

Two actions are critical for the success of this approach.

- Initiatives that boost revenue flow to smallholder farmers managing exclosures (e.g.. mobilizing financial resources for purchasing inputs and meaningful local community participation), and

- Ensure the sustainability of small-scale businesses (e.g.. regular follow-up and technical support; facilitating market opportunities in the value chain) are critical for the success of this approach.

	Minimum		Optimal	
Discount rate (%)	18	24	18	24
Number of beehive	7	8	25	25
Payback period (years)	8	4	1	1

Scenarios

Discount rate (%)　　Number of beehive　　Payback period (years)

An example of a financial feasibility analysis for beekeeping (**Mekuria et al. 2020**).

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Summary

- Land degradation is global problem that impair livelihood, biodiversity and the planet's ability to combat climate change.

- Restoration of degraded landscapes supports to achieve resilient community and environment by improving soil health, animal health and biodiversity.

- *Restoration of degraded landscapes increase access to water for multiple use – increase agricultural productivity of smallholder farmers as well as opens up opportunities for livelihood diversification (Food secured community).*

- Appropriate policies have diverse role in landscape restoration or watershed management: reconcile natural and political boundaries, harmonize economic development and environmental protection, provides incentives such as tax exemption, ensure equitable benefit sharing.

- International initiatives and bilateral collaborations are key to implement interventions at scales and share knowledge and experience.

- Sustaining landscape restoration measures requires balancing the immediate short-term economic loses with long-term economic and environmental gains.

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