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Building the Economic and Ecological Evidence for a Landscape Approach

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Climate, energy, and transport


Forests, food, and water


Governance and access


Markets and enterprise

WRI Landscape Report:

Assessment of the landscape approach for enhancing resilience in Sub-Saharan drylands

- *What is a Landscape Approach (LA)?*

- *How can a LA contribute to increasing resilience and reducing vulnerability in African drylands?*

Outline

1. Conceptual framework
2. Ecological and economic evidence
3. Stakeholder analysis
4. Case study analysis (3)
5. Recommended policies and interventions

What is a "landscape"?

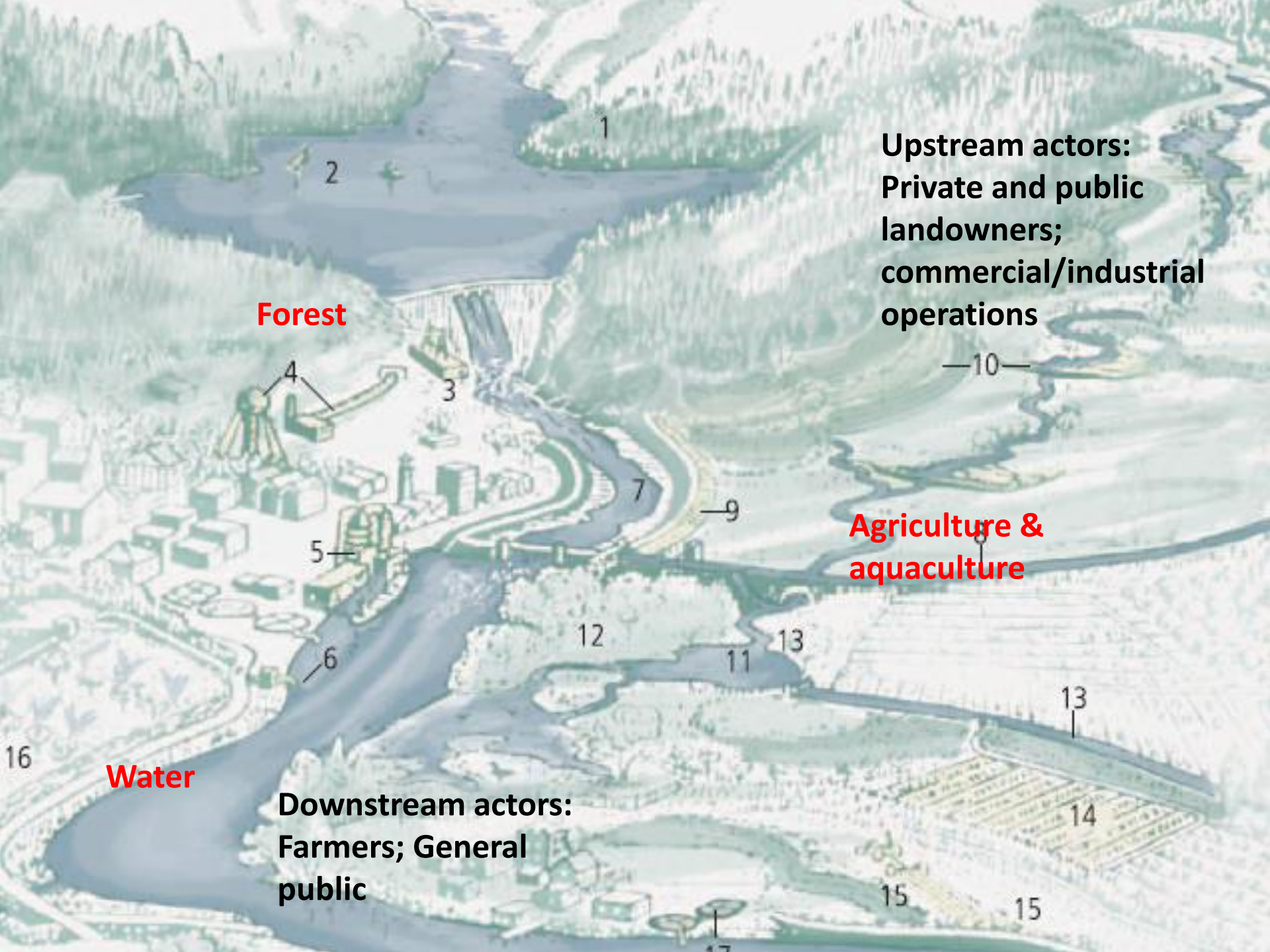
"A **mosaic** of natural and/or human-modified ecosystems, with a characteristic configuration of **topography, vegetation, land use, and settlements** that is influenced by the **ecological, historical, economic and cultural** processes and activities of the area…"

Landscapes for People, Food and Nature Initiative

What is a "landscape"?

"A landscape is often defined as a **geographical construct** that includes not only **biophysical** features of an area but also its **cultural** and **institutional** attributes. A landscape is not necessarily defined by its size; rather, it is defined by an **interacting mosaic of land cover and land-use types** relevant to the processes or services being considered or managed."

World Bank Forest Source Book, 2008


Upstream actors: Private and public landowners; commercial/industrial operations
Forest
Agriculture & aquaculture
Water
Downstream actors: Farmers; General public
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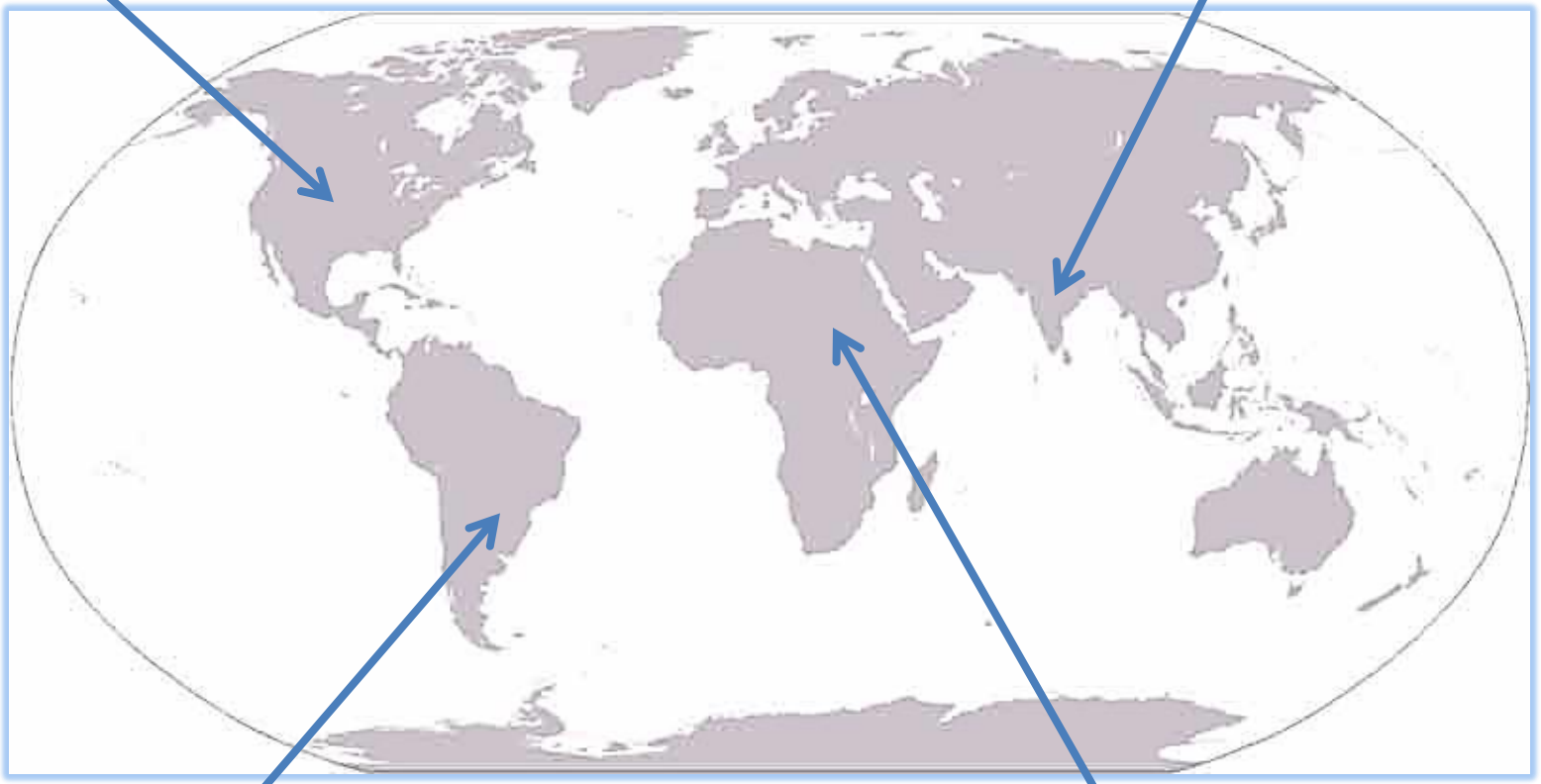
What is a “landscape approach”

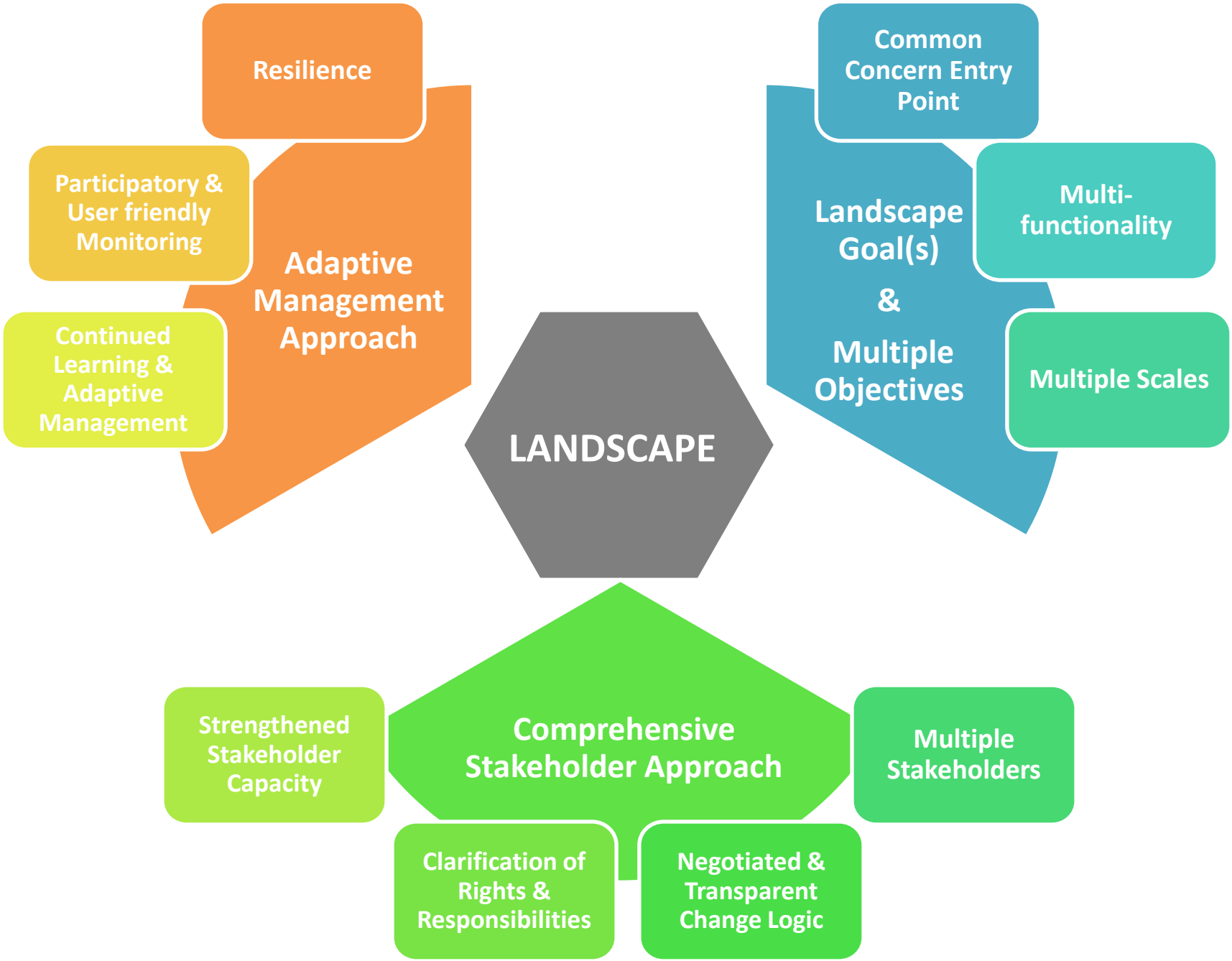
Forest Landscape Restoration

Watershed Development



Payments for ecosystem services

Integrated Water Resource Management

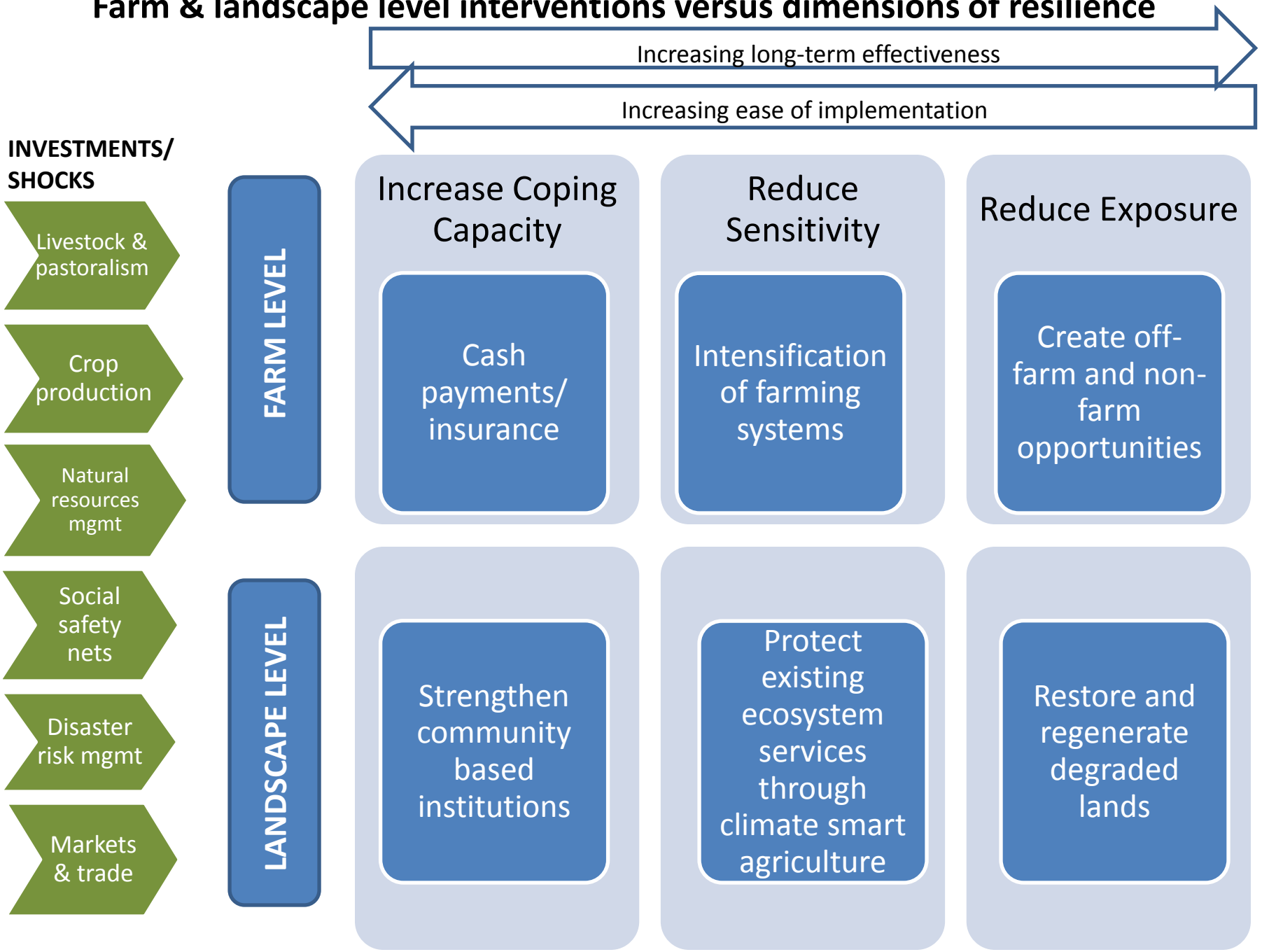

Resilience
Participatory & User friendly Monitoring
Adaptive Management Approach
Continued Learning & Adaptive Management
Common Concern Entry Point
Landscape Goal(s) & Multiple Objectives
Multi-functionality
Multiple Scales
LANDSCAPE
Strengthened Stakeholder Capacity
Comprehensive Stakeholder Approach
Multiple Stakeholders
Clarification of Rights & Responsibilities
Negotiated & Transparent Change Logic

LANDSCAPE VS. SECTORAL APPROACH

	SECTORAL	LANDSCAPE
Scale	Local: 1 or 2 land uses	Larger scale: multiple interacting land uses; Fuzzy or discrete
Timescale	Short to medium term (1-5 yrs)	Many years to several decades
Scope	Well-defined	Fuzzy and evolving
Management	Clear and well-defined organizational roles/structures	Roles evolve and overlap; civil society has increasing significance
Learning	Informal	Integral and continuous
Authority	Centralized and clear	Decentralized/distributed; negotiated

Source: Sayer et al. 2013

Farm & landscape level interventions versus dimensions of resilience



Three case studies

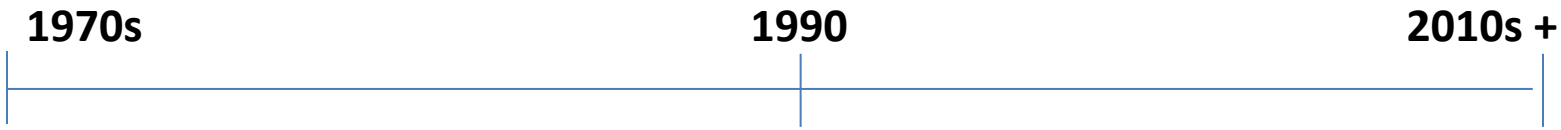
Maradi & Zinder, **Niger**

Tigray, **Ethiopia**

Upper Tana River, **Kenya**

Ethiopia – Tigray
Managing Environmental Resources to Enable Transition (MERET)

Evolution of Food for Work Programs: Tigray



Food For Work Project 2488

MERET &
MERET-PLUS

Goal(s) & Objectives	Food security & sufficiency		+Rural development +Livelihoods
Components	Food/cash for labor	+Technical (SWC) +Afforestation	+Income generation +Social
Approach	Top-down Short-term focused		Bottom-up Participatory Watershed

Economic & ecological evidence

Objective

Qualitatively and quantitatively value the landscape approach compared to sectoral approach

Questions

- Could a landscape approach potentially reduce the cost of interventions and their implementation?
- Could a landscape approach increase the benefits that come from a holistic strategy (e.g., increase market and non-market benefits)?

Data Sources

Project evaluation reports

Peer-reviewed and gray literature

Interviews with primary and secondary stakeholders

Government surveys/databases

SLM/GIS databases

LANDSCAPE ECONOMIC COSTS

IMPLEMENTATION COSTS

- Costs of capital, labor, materials, and energy for interventions
- Annual operating and maintenance expenses
- Administrative costs
- Voluntary community labor

TRANSACTION COSTS

- Search costs
- Bargaining Costs
- Monitoring and enforcement costs

OPPORTUNITY COSTS

- Change in land use
- Lost labor and foregone income

Source: OECD and others

LANDSCAPE ECONOMIC BENEFITS

MARKET BENEFITS

- Increased productivity of crops, livestock, fodder, etc…
- Avoided travel costs for water, fuel, fodder,
- Avoided transaction costs
- Avoided property damages
- Growth in employment opportunities

NON-MARKET BENEFITS

- Biodiversity/habitat
- Carbon sequestration
- Improved water quality
- Improved nutrition/health
- Female empowerment
- Enrollment in education

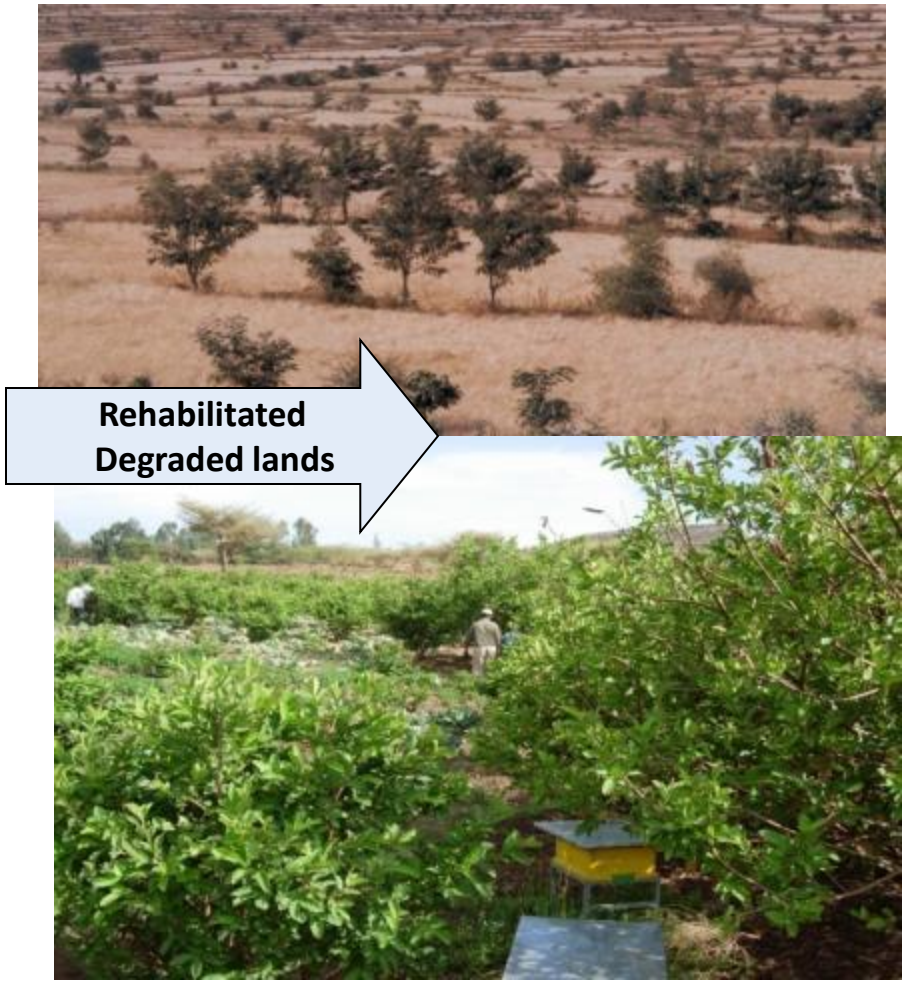
Source: OECD and others
Picture source: Chris Reij and ILRI

Economic valuation challenges:

- Valuing a “constructively ambiguous” concept
- Lack of local capacity for conducting impact studies and documenting best practices
- Availability of public data
- Lack of evidence for sectoral approaches

MERET: Economic evidence

- **Economic and financial rates of return averaged > 12%** for main activities.
- All community members felt that their **incomes had improved** and that their **food deficit had decreased.**
- **Income sources** have been **diversified.**
- Noticeable **improvements in the quantity and quality of water** available as a result of the conservation efforts.

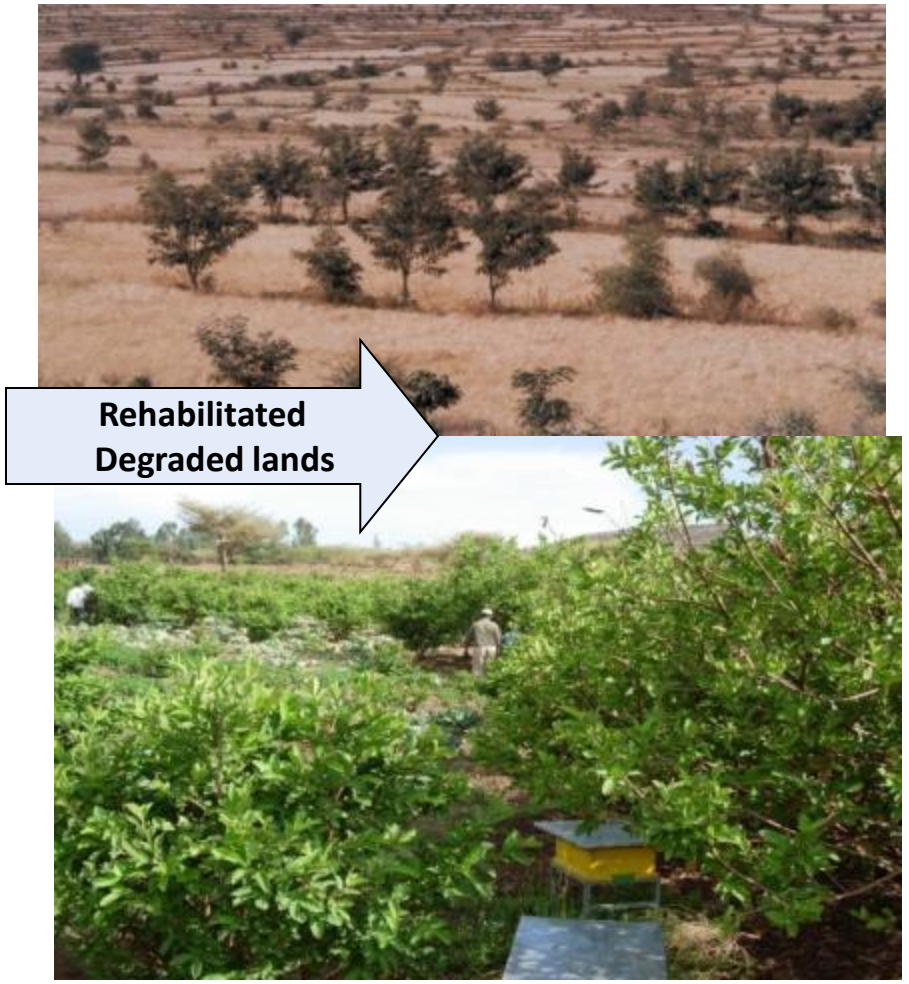


Source: Ethiopia MOA

Economic evidence cont'd

IFPRI Study (2012): SLM in Blue Nile Basin, Ethiopia

Plots that received investment in the first period (1992) experience a **20.6% higher value of production** in 2010. Although value of production increases with investment, results indicate that **SLWM infrastructure must be maintained for at least seven years** in order to reap positive increases in value of production […] **Marginal benefits increase at an increasing rate**.



Source: Ethiopia MOA

Stakeholder analysis: MERET ex.

Stakeholder	Role	Rationale for participation
Farmers	Implement and manage interventions	Improve income and food security Cost savings
Women	Implement and manage interventions	Food security Reduce travel time for water/fuel Decision-making power
World Food Programme	Implement MERET Technical guidance	Food relief Address underlying causes of chronic food insecurity Promote resilient communities
Government (MOA)	Administration Intervention implementation Technical guidance	Food security Conflict resolution &self-reliance Implement policies
International donors	Funding	Humanitarian relief International relations
NGOs (e.g,. Ecoagriculture)	Technical guidance Policy guidance	Resilience Capacity building Data collection
Resource users (e.g., Pastoralists)	External	Improve income and fodder availability Reduce migration & travel costs

Recommended policies & interventions

- Policy implications of economic analysis, stakeholder assessment and case studies findings
- Critical barriers to adoption and scaling up
- Policies to increase cost-effectiveness of landscape approaches
- Policies to improve collaboration of stakeholders
- Policies to reduce vulnerability and enhance resilience

MERET example:

- **Adaptive management:** Systematic data collection/ Monitoring and Evaluation system
- **Collaboration/Effective Partnerships** with other programs
- **Strengthen institutional resilience** and **communication** at landscape scale

Thank you!

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