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# The ELD 6+1 methodological approach

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# Learning goal and outline

## LEARNING GOAL

- To understand and discuss the economics of land management from a holistic and multidisciplinary perspective

## OUTLINE

- The Economics of Land Degradation (ELD) Initiative
- The ELD 6+1 steps methodological approach
- Video: the ELD Georgia study

# The ELD Initiative

- Building a **compelling economics case** for economic benefits derived from sustainable and integrated landscape management, from the local to the global level



## Costs of land degradation and benefits from SLM



- **Global losses** of Ecosystem Services (ES) through land degradation: **6.3 to 10.6 trillion USD annually**
  - 10–17 % of the world's GDP
- 12 million additional ha of land are degraded annually... 20 mil. tons of grain could have grown!
- Adoption of SLM can provide an additional **USD 75.6 trillion annually**



# The ELD 6+1 steps for economic valuation

- 6+1 steps methodological approach: concrete application of the **Total Economic Value** framework structured using the ecosystem services framework
- **Cost-Benefit Analysis:** assess impact of alternative land management options, and identify the most economically desirable option(s)



**NEXT STEPS**

**Option 1**



**Option 2**





## 6 steps to estimate the economic benefits and costs of action:



- Inception
- Geographical characteristics of the study area
- Types of ES
- Role of ES in community livelihoods and economic valuation
- Land degradation patterns and pressure
- Cost-benefit analysis and decision-making

**+1 Take action:** implementation



## Step 1. Inception

- Identification of the scope, location, spatial scale, and strategic focus of the ecosystem services valuation



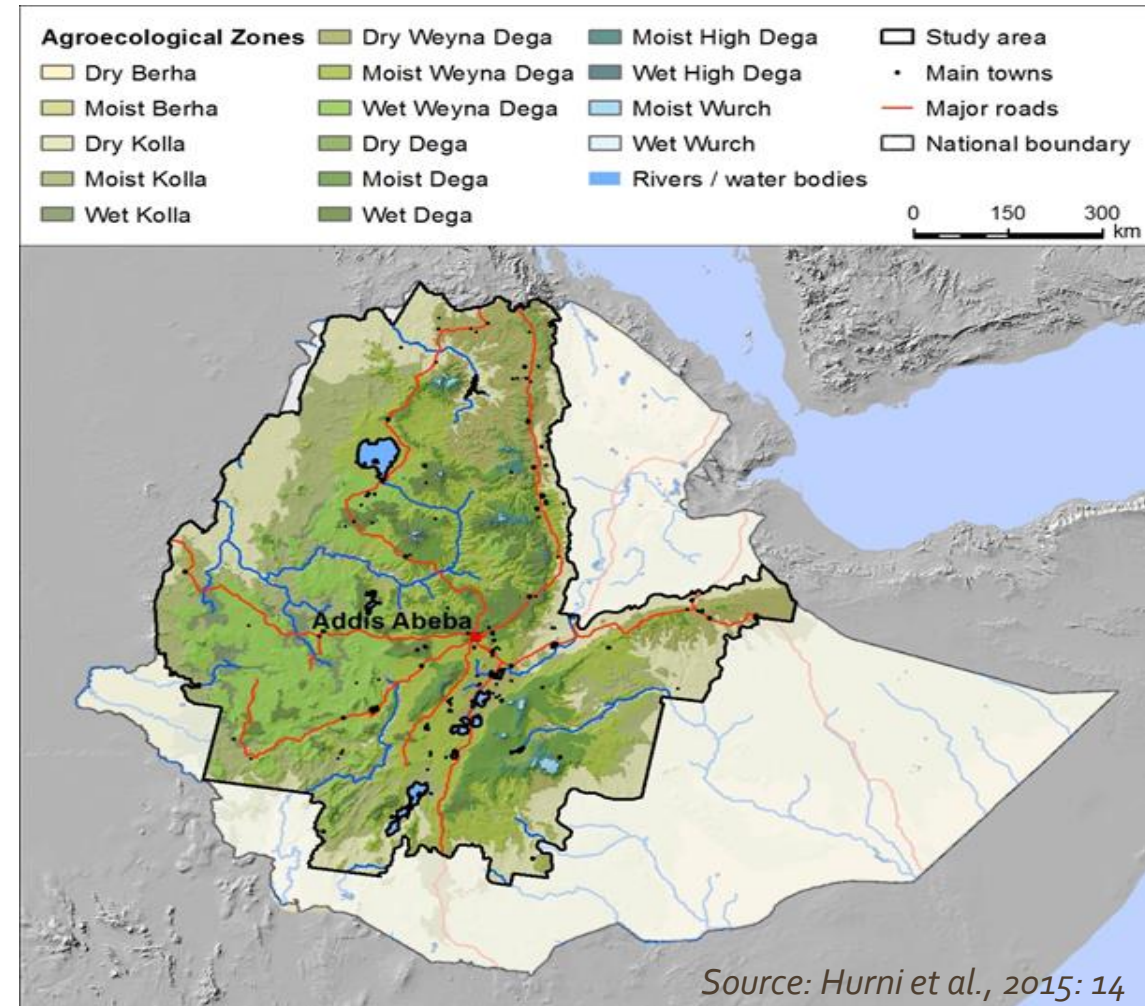
*Photo taken by Andrew Dougill*



## Step 2. Geographical characteristics of the study area

- Establish boundaries of the study area identified in Step 1, following an assessment of quantity, spatial distribution, and ecological characteristics of land cover types

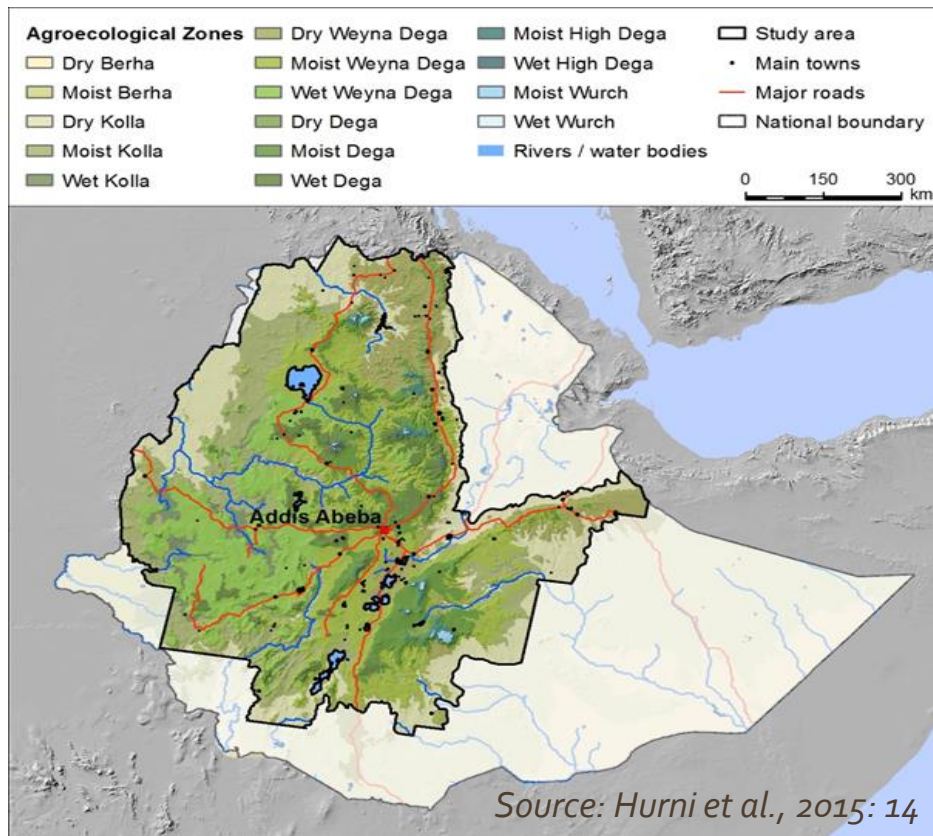
**ELD Ethiopia case study:** cost-benefit analysis of the existing and potential establishment of **soil and water conservation structures** in Ethiopia



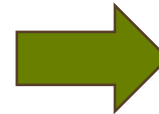


## Step 3. Types of ES for each land cover in Step 2

- Analyse stocks and flows of ES for classification along the four categories of the ES framework



## Ecosystem services



Provisioning

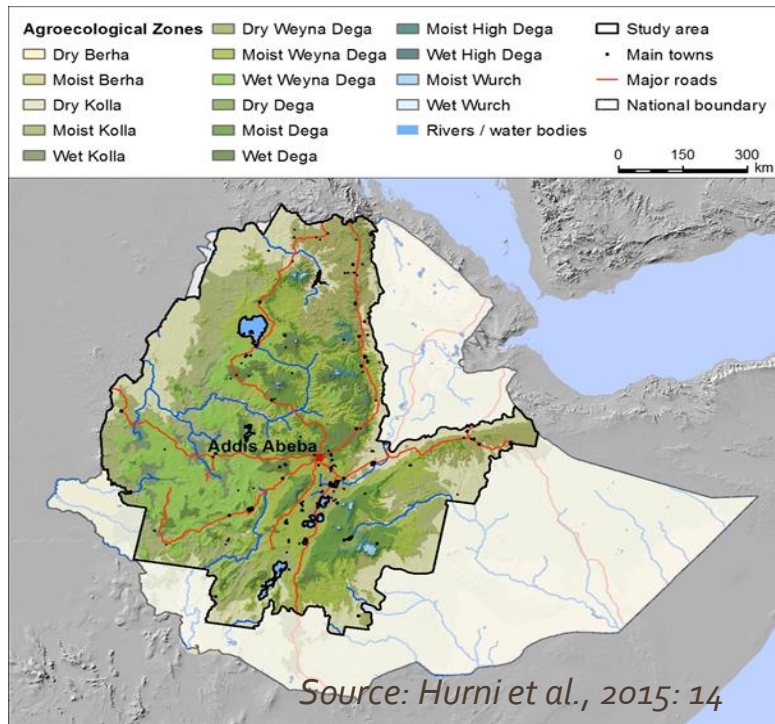
Regulating

Cultural

Supporting

## Step 4. Role of ES and economic valuation

- Establish **links between ecosystem services and livelihoods** under each land cover and in overall economic development. Estimation of **total economic valuation** of each ES



### Ecosystem services

Provisioning

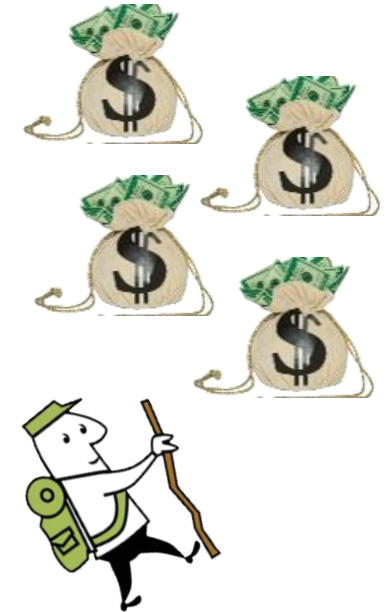
Regulating

Cultural

Supporting



### Benefits from action





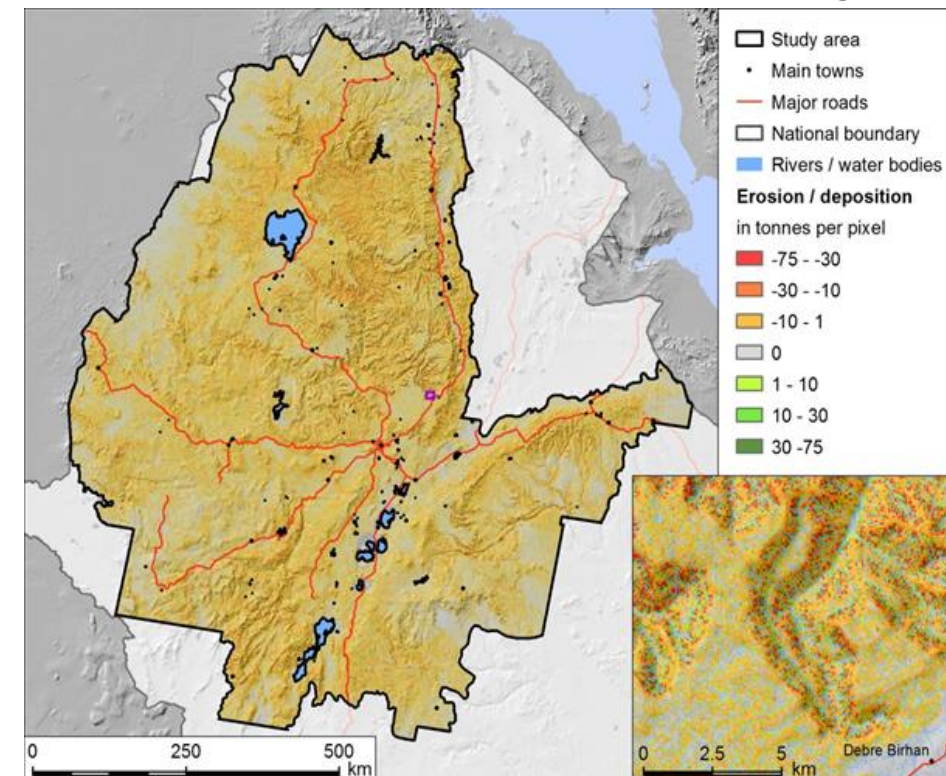
## Step 5. Land degradation patterns and pressure

- Identify degradation patterns and drivers, drivers & barriers to adoption of sustainable land management (e.g. property rights, legal frameworks)

### Estimated net erosion/deposition from geospatial modelling for the ELD Ethiopia Case Study

- Landsat imagery and expert opinion to determine land cover classes, in conjunction with the **Unit Stream Power Erosion Deposition (USPED)** model
  - Predicts degradation patterns by estimating the **spatial erosion and deposition patterns** of soil matter.
  - **Parameters:** erodibility, management type, soil cover, elevation

Source: Hurni et al., 2015: 47





## Step 6. Cost-benefit analysis and decision-making

- Compare costs and benefits of sustainable land management actions over time

Year	1	2	3	4	5
Benefits from land	\$	\$	\$	\$	\$
Costs of using land	\$	\$	\$	\$	\$
<b>Net benefits</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>





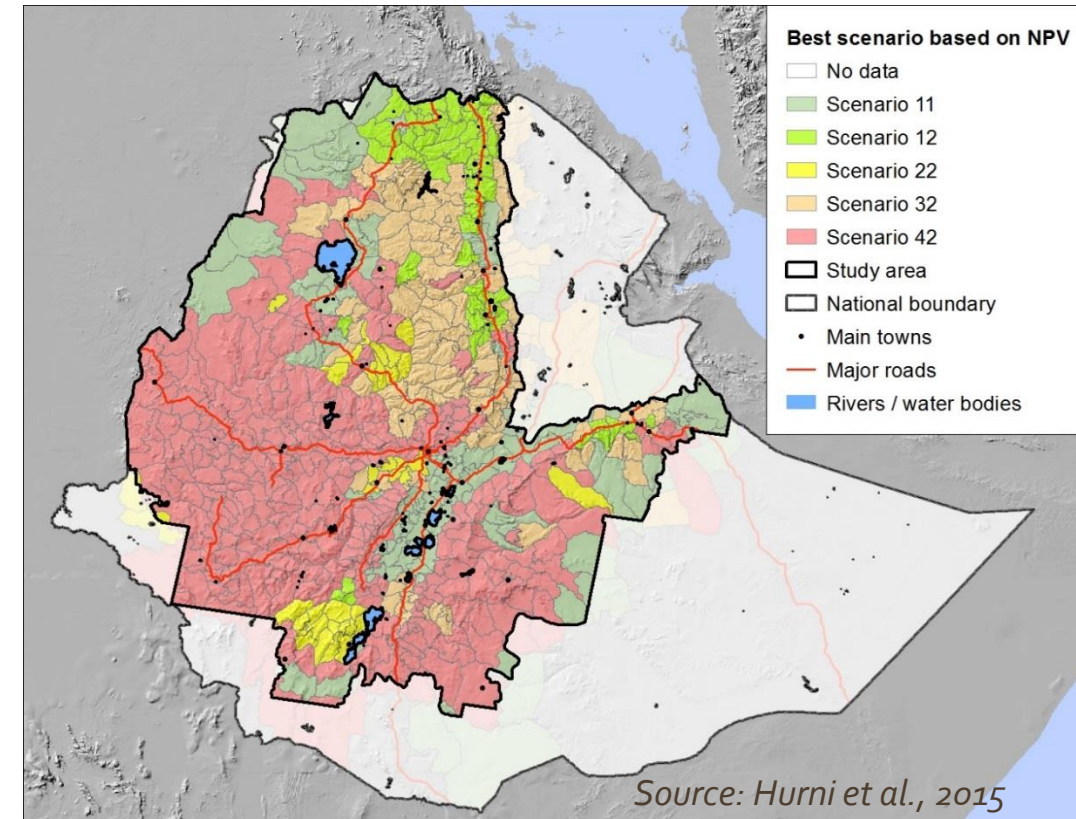
## Step 6. CBA continued: Ethiopia case study



- **8 possible scenarios** established (combinations of fertiliser and grass applications)
- **Crop production** estimated for each scenario over the next **30 years**
- **Discount rate** used: 12.5%

### Findings:

- “Business-as-usual”: lowest productivity; highest potential was found in optimal growth conditions
- The most optimal scenario varies across the regions



**Best scenario based on NPV for different regions**



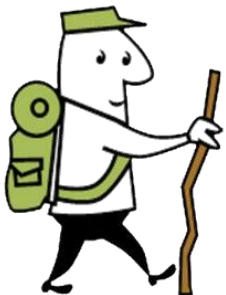
## Step +1. Take action

- Implementation of the **most economically desirable option(s)**

**TAKE ACTION !**

**Who should take action?**

Land users, private sector actors, policy decision makers





# ELD 6+1 steps in practice: ELD Georgia study



[Watch the "ELD Georgia" film!](#)

