



**Prospect of Reconciling Conservation and  
poverty Reduction in the forest Coffee landscapes  
of Ethiopia: the Role of PES**

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# Presentation outline

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- Introduction
- Ecosystem services conservation activities
- Poverty and inequality implication of conservation
- Role of PES
- PES in Ethiopia
- Ways forward

# Introduction

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- ❑ Coffee forest –the forest harboring arabica coffee
- ❑ Forest coffee is one of the NTFPs collected from the forest without management
- ❑ Production systems - productivity and ecosystem services vary
  - Forest coffee
  - Semi-forest
  - Plantation (garden) coffee
- ❑ Forest coffee's ecosystem service
  - Biodiversity –for international coffee breeding for particularly
  - Disease tolerance, production stability and quality improvement

# Introduction

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- Other ecological services such as
  - climate change mitigation, carbon sequestration, watershed protection and so on.
  - climate change adaptation as well - forest coffees are tolerant to biotic and abiotic factors
- For local people forest coffee
  - source of cash income (about half of households' annual cash income)
  - also plays a risk buffering role in bad years and seasons
- In most cases the local people have a good knowledge of the ecosystems services of forest coffee as well

# Introduction

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- Yet, coffee forest and embedded genetic resources are highly endangered from deforestation and forest degradation
- Poverty is stated as the underlying causes of deforestation
  - factor input for deforestation of coffee forest-human labor
- Poverty and deforestation forms a vicious circle
  - Deforestation /forest degradation reduce environmental benefits to the local households and in turn aggravates the level of poverty
  - Poverty leads to ‘forced deforestation’
- On the other hand *ex-situ* conservation in cold rooms hardly possible coffee seeds

# Introduction

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- ❑ If conservation intervention reduce local people access to forest resource it increases poverty
- ❑ The extent of impact differs across the local households
- ❑ The extent of impact depends on
  - Level of dependency
  - availability of substitute products
  - access to markets
  - compensating alternatives



# ES Conservation activities

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- ❑ Ethiopia has engaged in conservation activities since 1880s.
- ❑ Implement the participatory conservation strategy since mid 1990s
  - little has been achieved in terms of sustainability and its contribution to poverty reduction
- ❑ Mix of the two through zoning –biosphere reserve since 2010
  - already registered by UNESCO
    - ❑ Yayu
    - ❑ Kaffa
  - Other initiative
    - ❑ Bale

# Poverty implication of conservation: a case study from Yayu coffee forest

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- 3 conservation scenarios taken
- *De facto* open access (scenario1)
  - the local household are free to harvest forest products from every parts
- Ineffective implementation of zoning (scenario2)
  - the rules and regulations are defined,
  - but it is in a state of ineffective implementation
- Effective enforcement of the zoning strategy (scenario3)
  - hypothetical effective implementation of the rules and regulations

# Poverty implication of conservation

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- In case of Yayu coffee forest we found that

Table 1. Local household poverty index under conservation scenarios

<b>Scenarios</b>	<b><math>\alpha=0</math></b>	<b><math>\alpha=1</math></b>	<b><math>\alpha=2</math></b>
Scenario 1	0.51 (0.0302)	0.23 (0.0173)	0.13 (0.0129)
Scenario 2	0.48 (0.0302)	0.19 (0.0154)	0.10 (0.0105)
Scenario 3	0.63 (0.0291)	0.32 (0.0191)	0.20 (0.0154)

\*Number in the bracket is standard error

# Poverty implication of conservation

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- ❑ In spite of the considerable level of poverty existing in the area, the percentage of poor increases from 48 to 63 in case of effective enforcement of rules and regulations
- ❑ While the normalized poverty gap increases by about 60 percent as we move from the effective implementation
- ❑ Similarly the squared poverty gap increases from 0.1 to 0.2
- ❑ This implies that the poor of the poor households will be adversely affected in case of effective implementation

# Income inequality implication of conservation

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- Total household incomes categorized by sources
- Farm income
  - agricultural activities
- Coffee forest related non-farm income,
  - gathering products from coffee forest
- Off-farm income
  - include wage income, petty trade...

# Income inequality implication of conservation

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- The existing inequality can be decrease
  - coffee related non-farm income
  - 10 percent increase in coffee related income reduces the income inequality by almost 0.4 percent, *ceteris paribus*.
  - Whereas 10 percent increase in farm income increases the income inequality by almost 0.4 percent

# Income inequality implication of conservation

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- Effective implementation tends to increase income inequality
  - This inequality induced can be reduced through increase in income of the coffee forest related non-farm income and off-farm income as PES



# Role of PES: equity and poverty

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- ❑ In general, conservation of ecosystem services in developing countries, including the forest coffee genetic resources in Ethiopia, is challenged by poverty
- ❑ Some of the conservation activities also tends to increase the gap between the poor and better of local peoples
  - Because it is the poor who depends environmental resources ( particular forest)
- ❑ PES can reducing the poverty and income inequality, and in turn can enhance effectiveness of conservation interventions

## Role of PES in reconciling ...

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- However for PES to work better in reconciling conservation and poverty reduction :
- There is a need to account for its effect on *horizontal and vertical equity*
  - Target groups identification- beneficiaries of PES
  - Channels selection
- Avoid or minimize the possibility ‘free riding’ problems
  - benefits & responsibilities should target individuals
- Methods of payment-in kind or in cash
  - PES should create employment opportunities

## Role of PES in reconciling ...

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- ❑ Environmental income should contribute to households' betterment in terms of physical and human capital and thereby move out of poverty
- ❑ Should play pivotal role in enabling households to use high-value environmental products through efficient marketing systems
  - lower transaction costs



## PES in Ethiopia

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- Ethiopia – submitted readiness preparation plan (RPP) for REDD and REDD+ to the World Bank
- Only one CDM project so far
- Currently ECFF preparing prefeasibility project for REDD++
  - Other NGOs are also doing similar things
- Challenges – property right issues....

# Ways forward

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- There is a need really to assess concerns of local communities regarding PES
- Rigorous empirical studies need to be conducted regarding equality implication of PES
- Relationship between households income and natural resources degradation /deforestation not yet well established
  - it depends on the nature of services local people derive from the natural forest
  - Purpose of extraction of the resources

# Ways forward

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- ❑ It is important to integrate PES with strong enforcement of management rules and regulations. This is vital particularly in case of ‘commercial forest’ like coffee forest because PES (better prices for semi-forest coffee) may trigger further intensification
- ❑ There has to be mechanisms for raising funds at local and national levels to finance PES in addition to international sources. For instance in the case of coffee forest a given percentage of forest/semi-forest coffee export revenue need be invested back as PES in the coffee forest areas

A photograph of a lush green forest covering a hillside. The foreground is filled with dense, bright green vegetation, including various shrubs and small trees. The background shows a steep slope covered in a thick, dark green forest that extends to the top of the hill. The sky is a pale, clear blue.

Thank you for  
your attention!