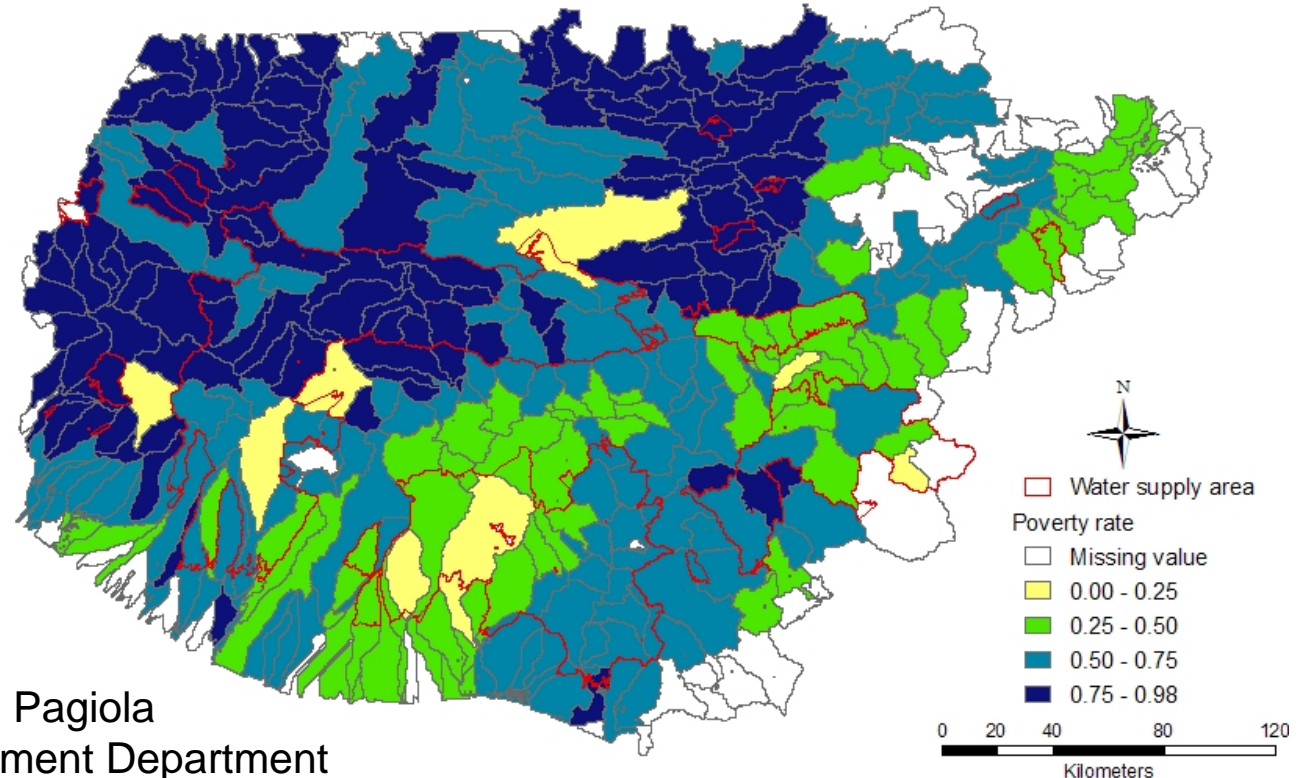




# Can the poor participate in Payments for Environmental Services?

## Empirical evidence from Latin America



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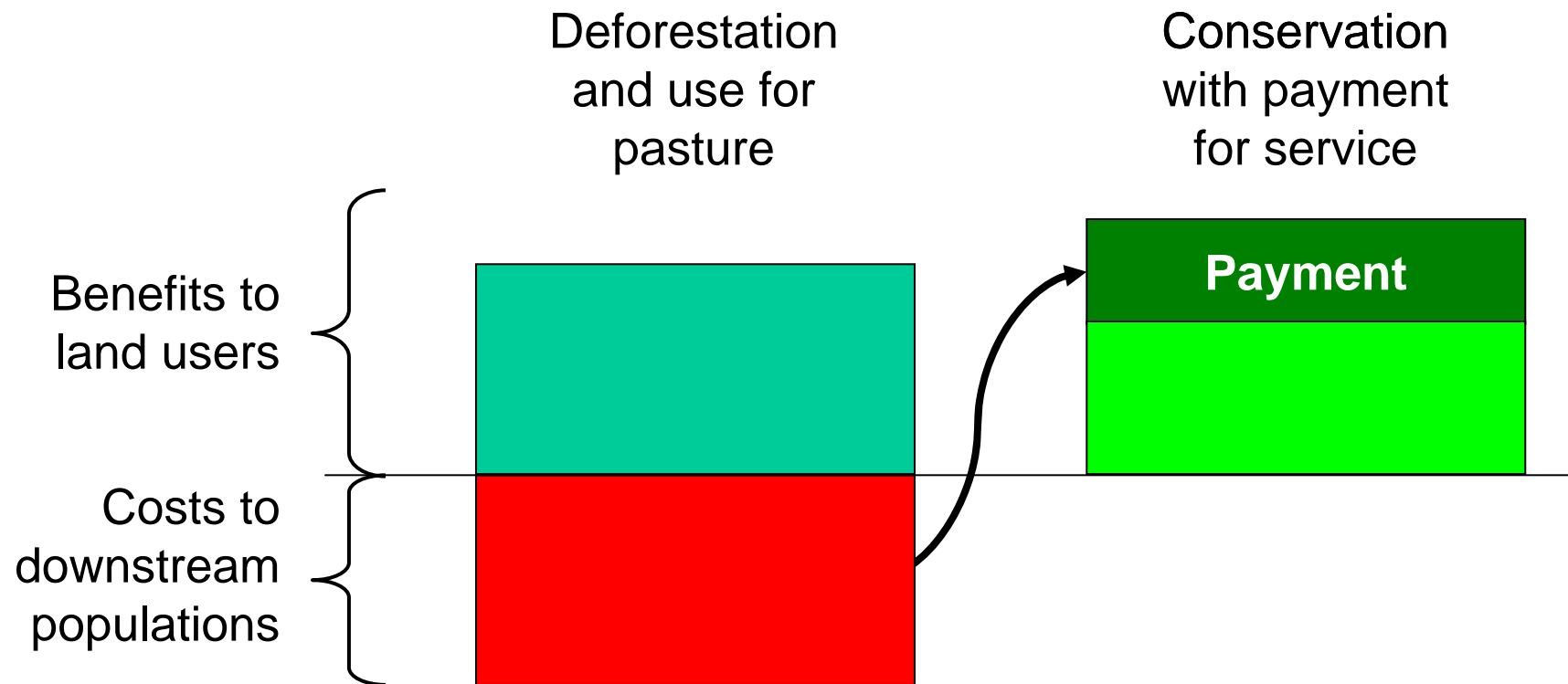
Stefano Pagiola  
Environment Department  
World Bank

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**Poverty and Environment Partnership (PEP) - 11th meeting**  
Environmental Improvements for Poverty Reduction and Sustainable Growth:  
The Challenges of Implementation  
Copenhagen 18th-20th June 2007

# The logic of Payments for Environmental Services (PES)

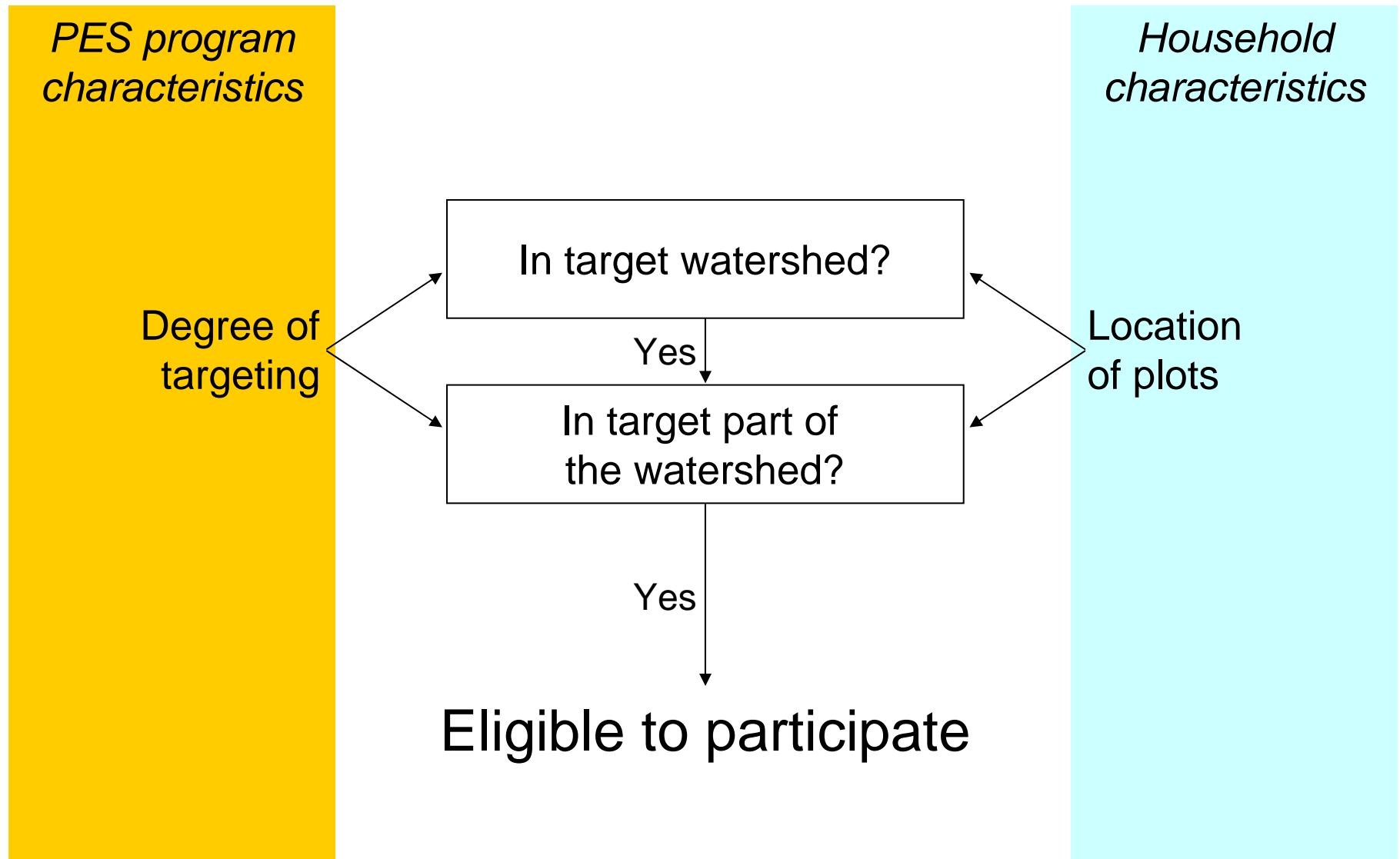


- PES payments are payments to *land use*
- Participation is *voluntary*

# Poverty and PES

1. PES is not intended as a poverty reduction mechanism
2. Hope that it will help the poor
  - Spatial correlation between poor areas and areas that provide environmental services
  - Payments to poor land users provide them with additional income
3. But maybe it won't
  - Can the poor participate?
4. Fears that it may do some harm
  - Exacerbate tenure problems
  - Impact on non-participants

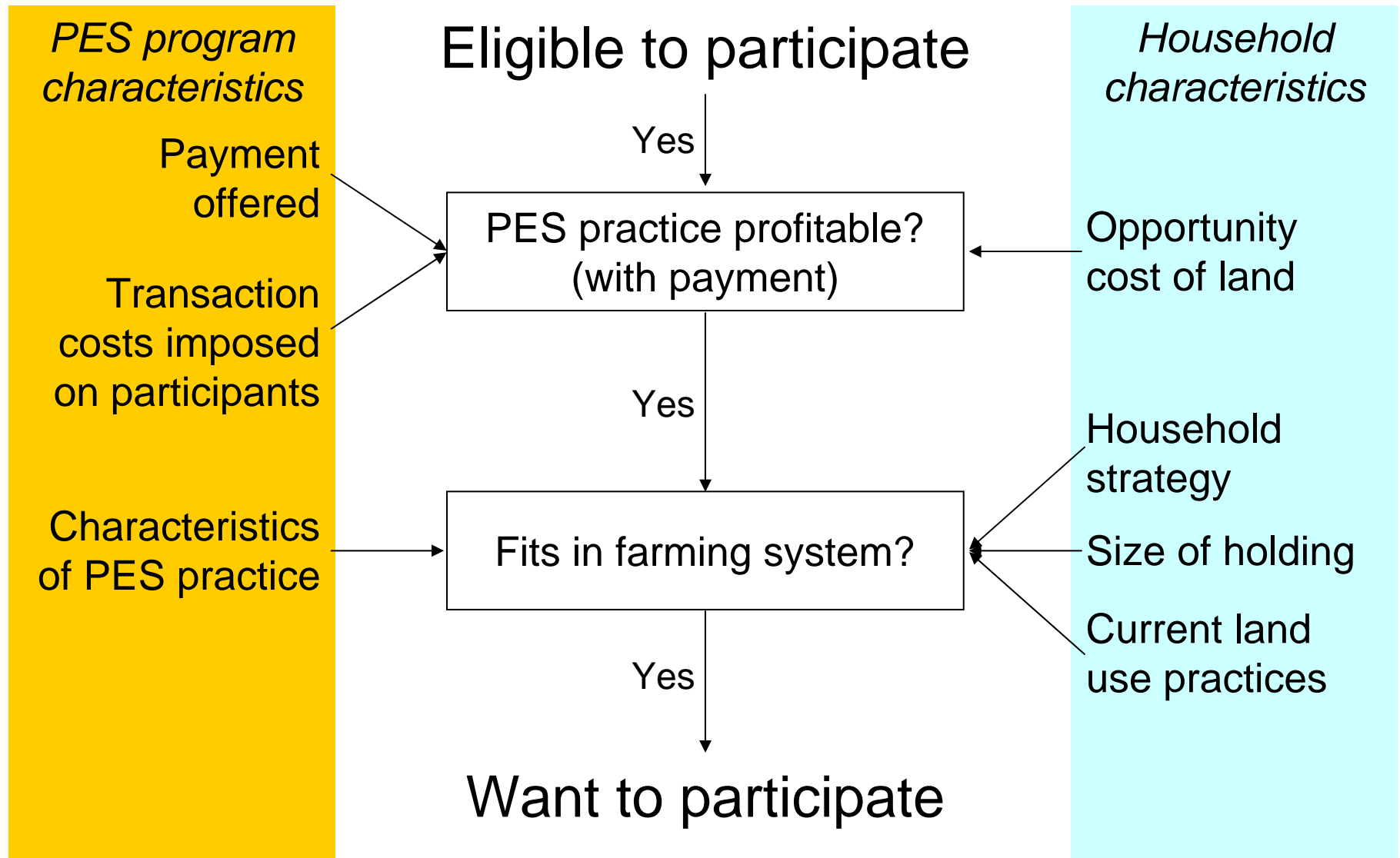
# Factors that affect household participation in PES programs



Source: Pagiola et al., 2005

Pagiola, World Bank, 2007

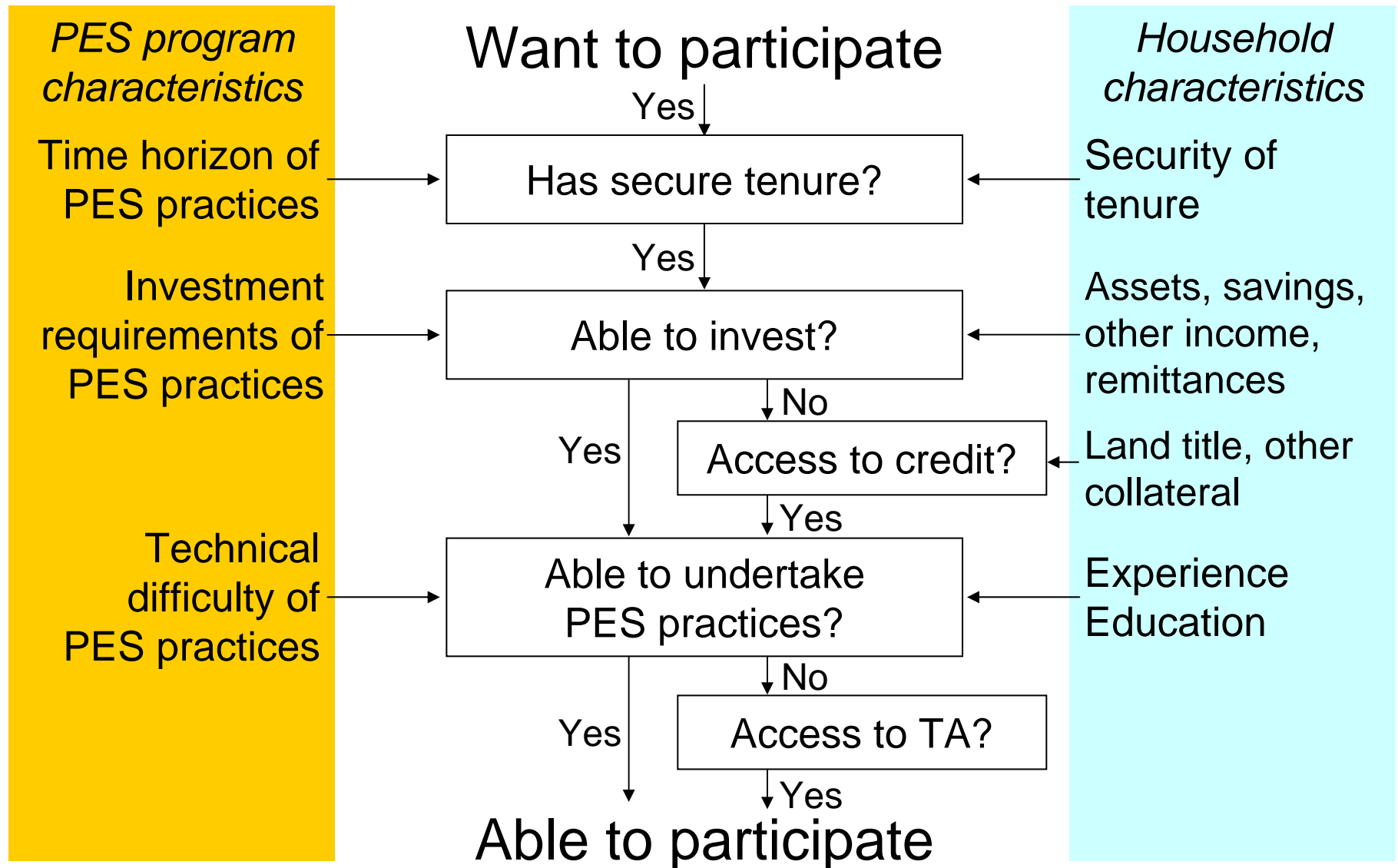
# Factors that affect household participation in PES programs



Source: Pagiola et al., 2005

Pagiola, World Bank, 2007

# Factors that affect household participation in PES programs



Source: Pagiola et al., 2005

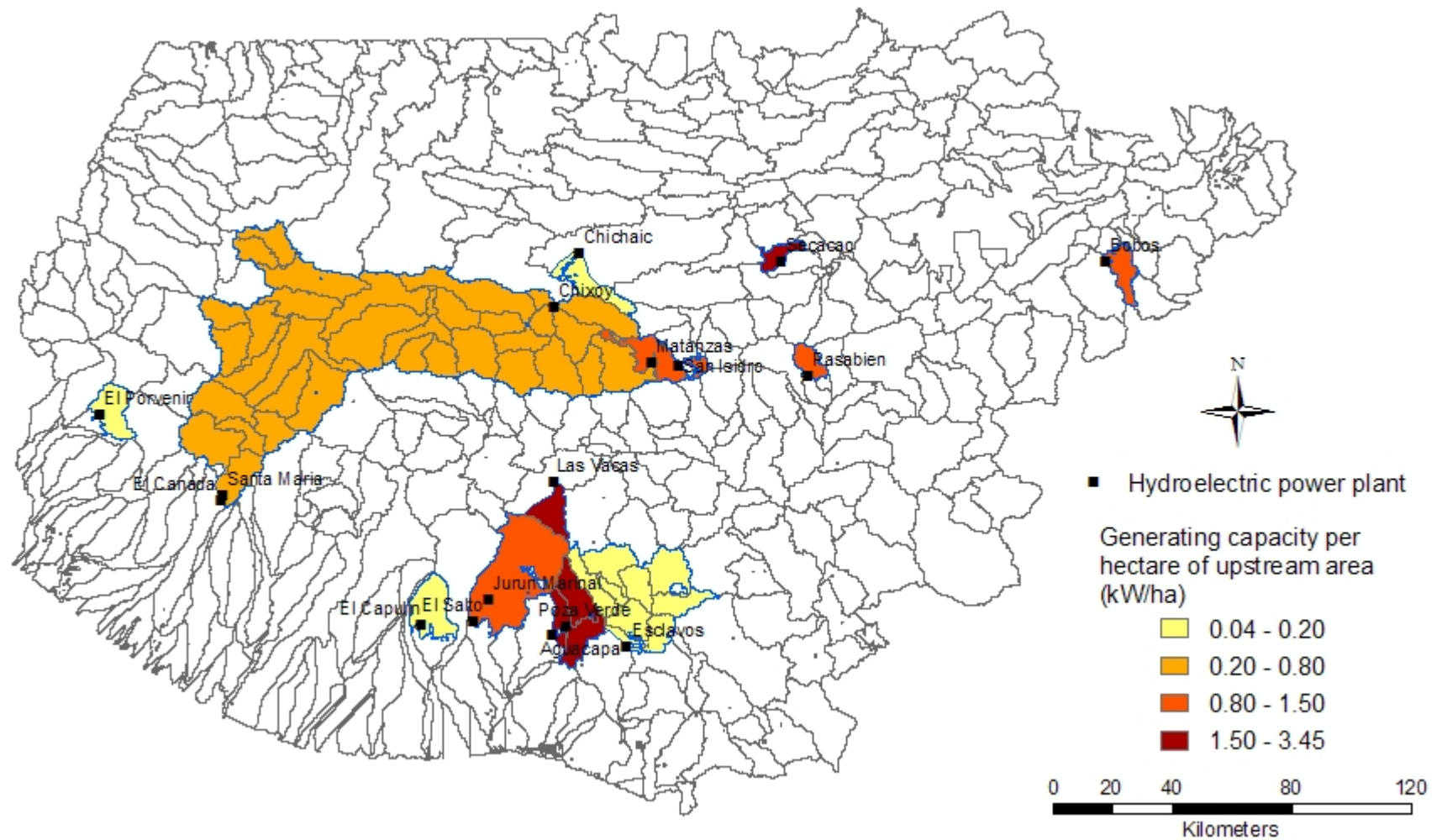
Pagiola, World Bank, 2007

# Can the poor participate in PES?

## Key questions

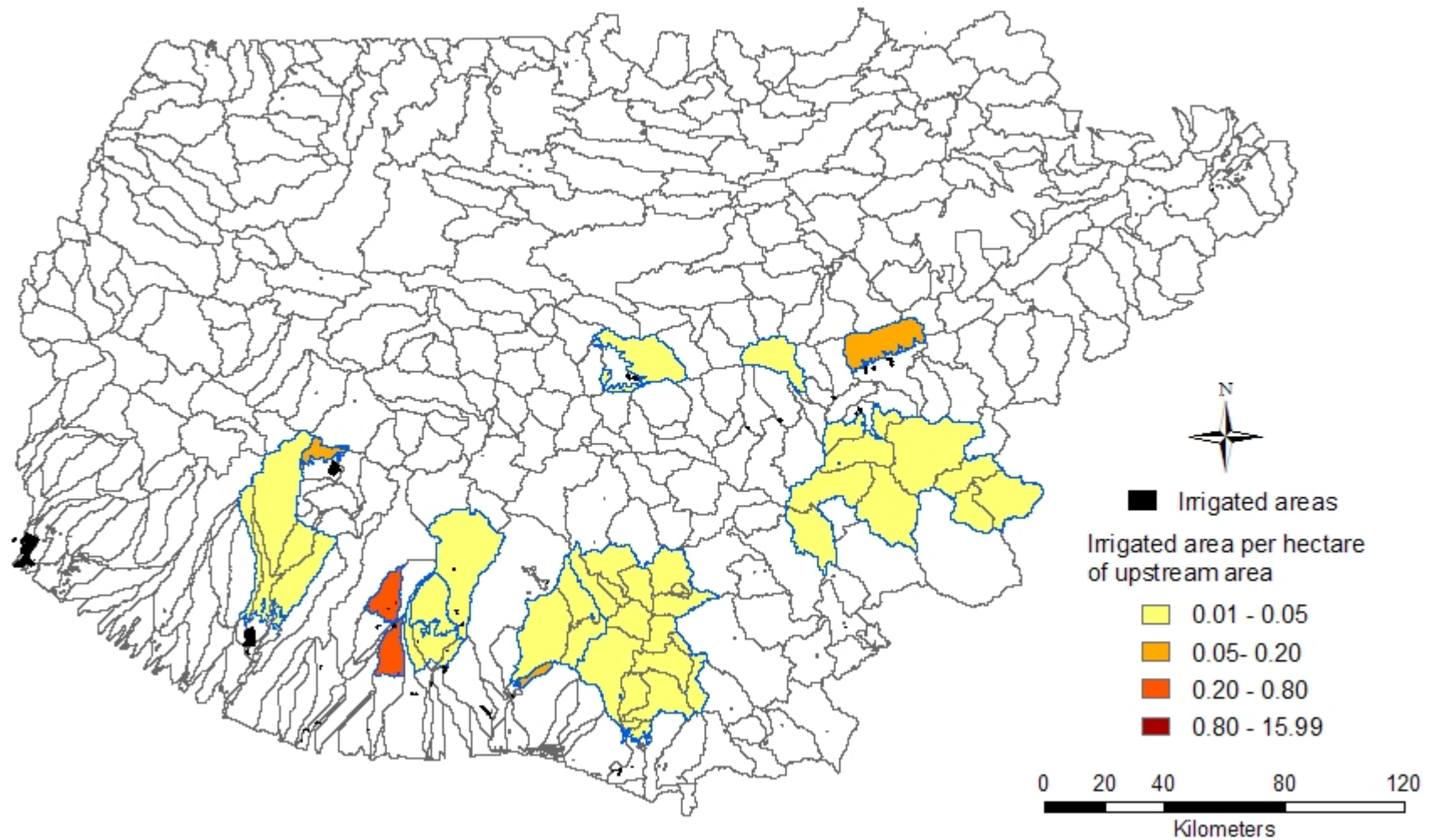
1. Are the poor potentially eligible to participate?
  - a. Are potential service suppliers poor?
  - b. How many of the poor are potential service suppliers?
2. Are eligible poor households able to participate?

# Guatemala: Watersheds with hydroelectric power plants



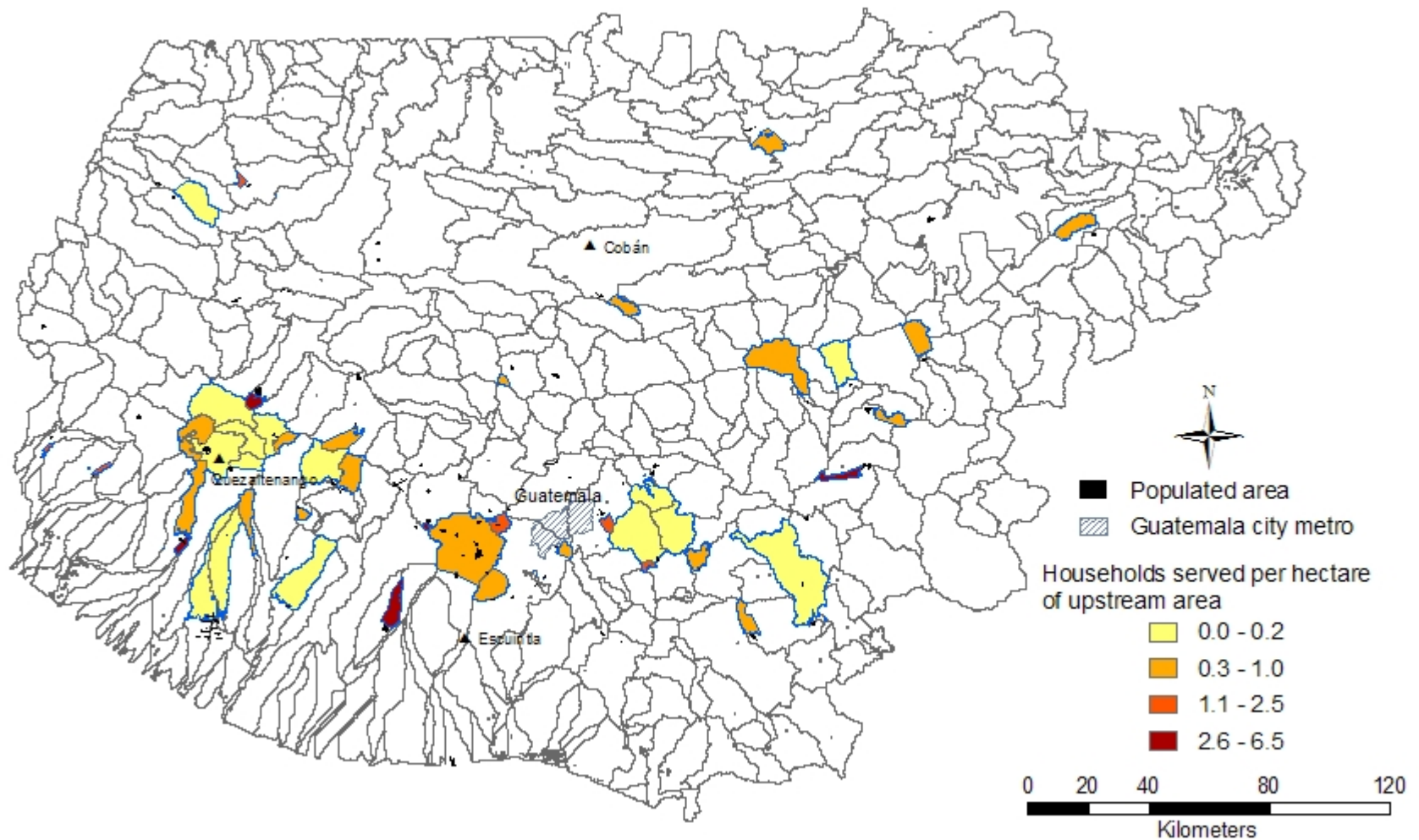


# Guatemala: Watersheds with irrigation

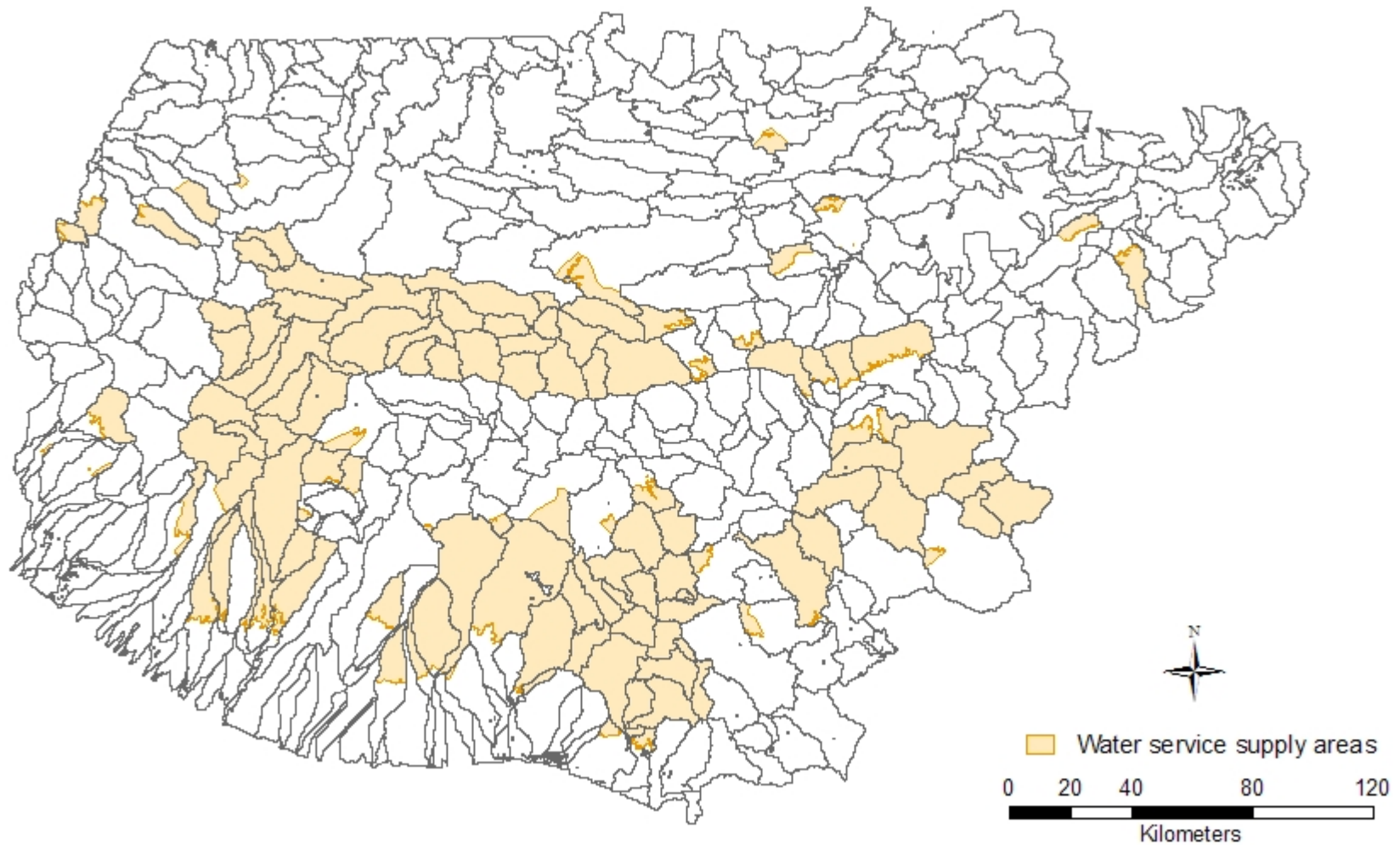


# Guatemala:

## Watersheds with significant domestic water use



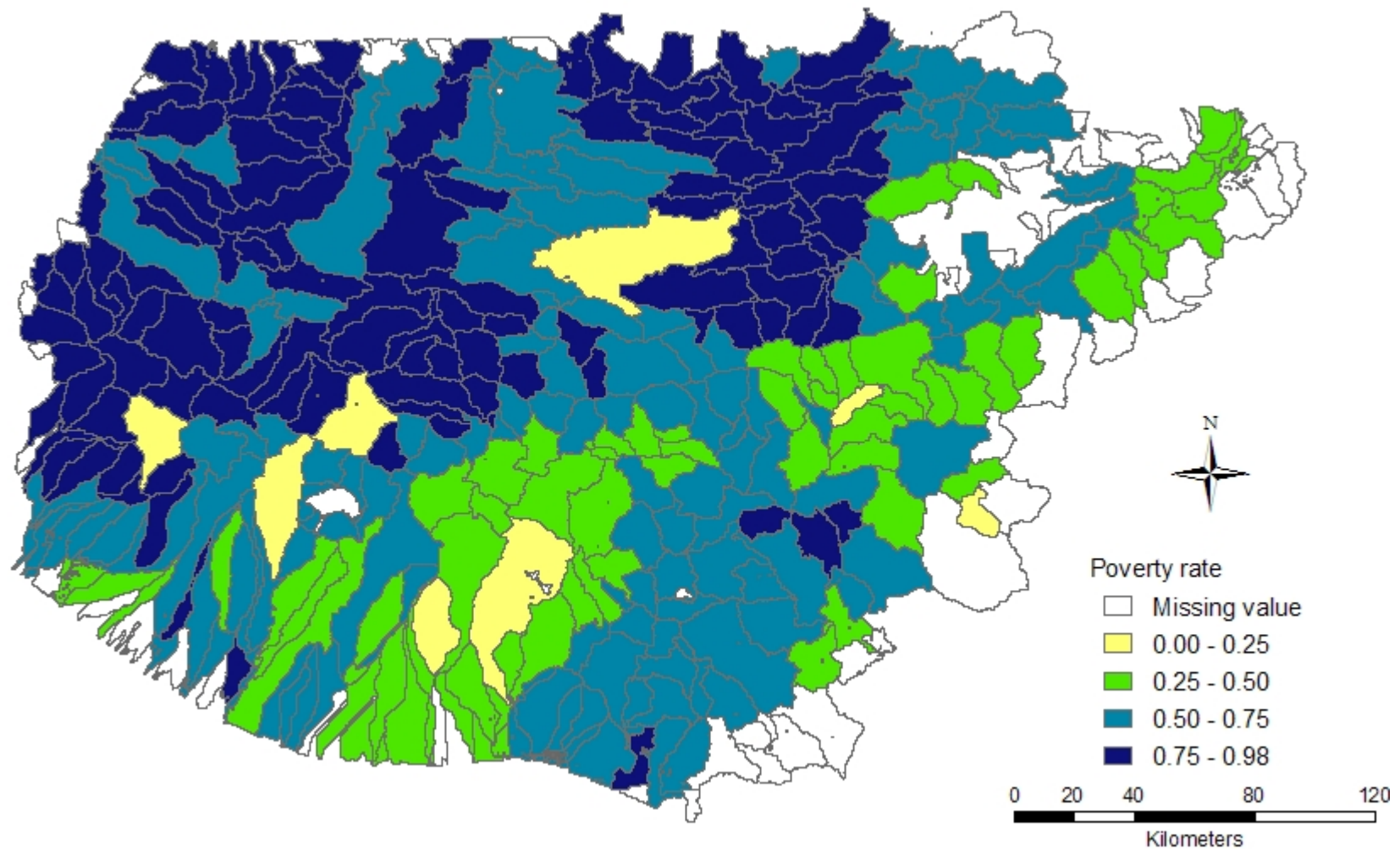
# Guatemala: Watersheds with significant potential for PES



Source: Pagiola, Zhang, and Colom, 2007

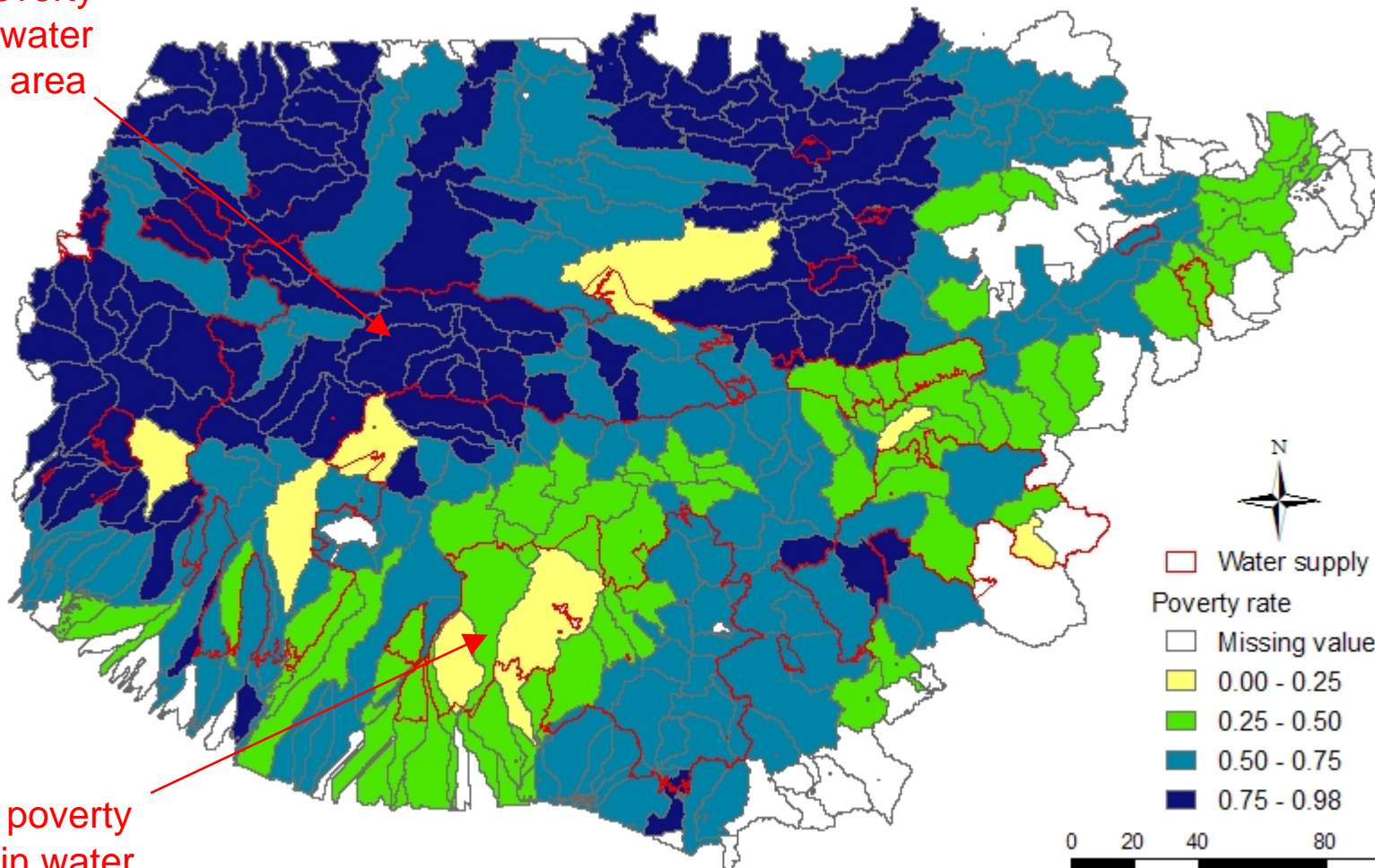
Pagiola, World Bank, 2007

# Guatemala: Poverty rate by watershed



# Guatemala: Poverty rate in water supply areas

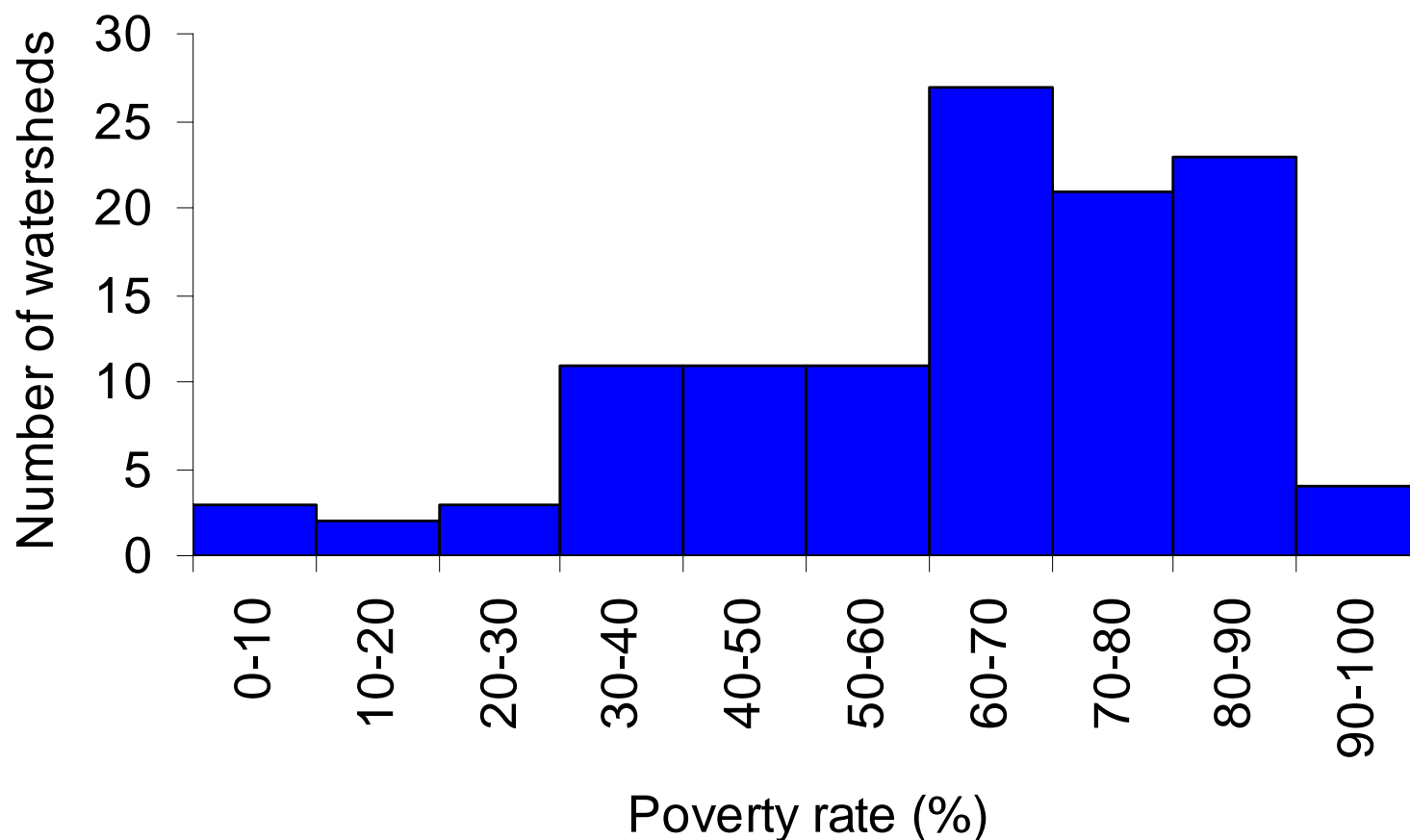
High poverty rate in water supply area



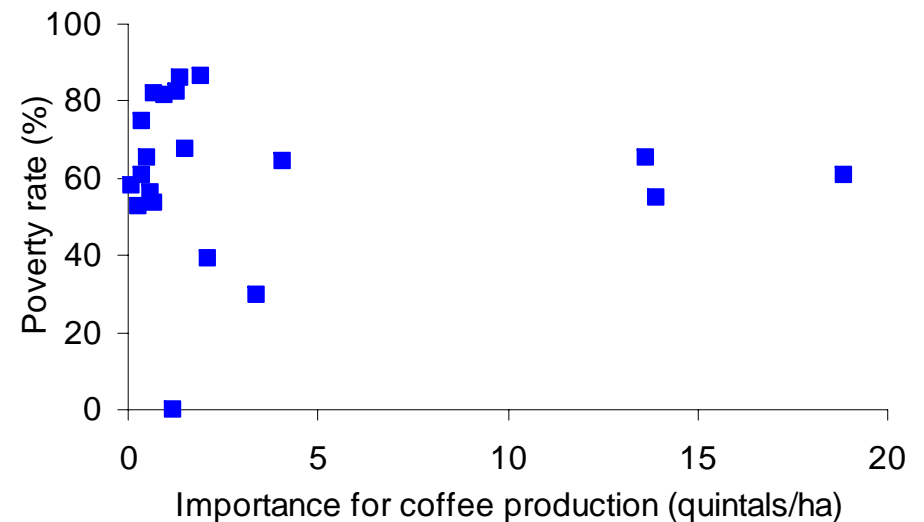
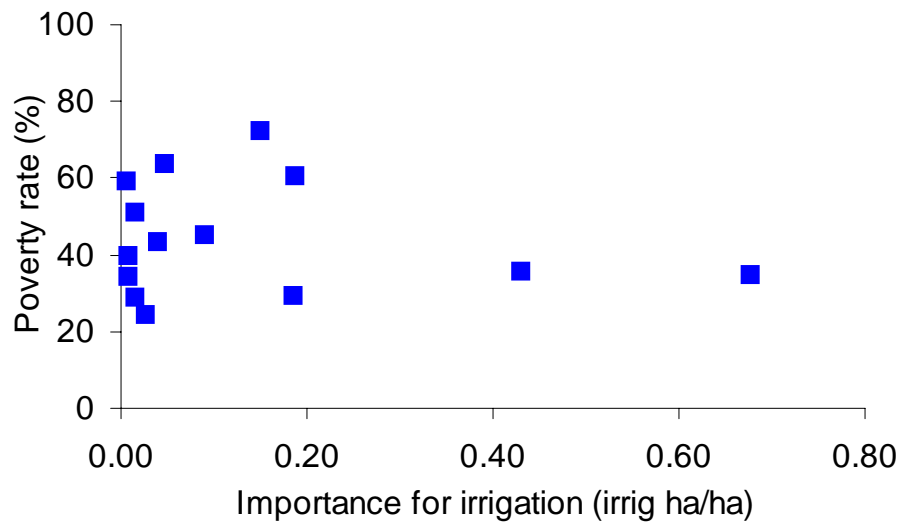
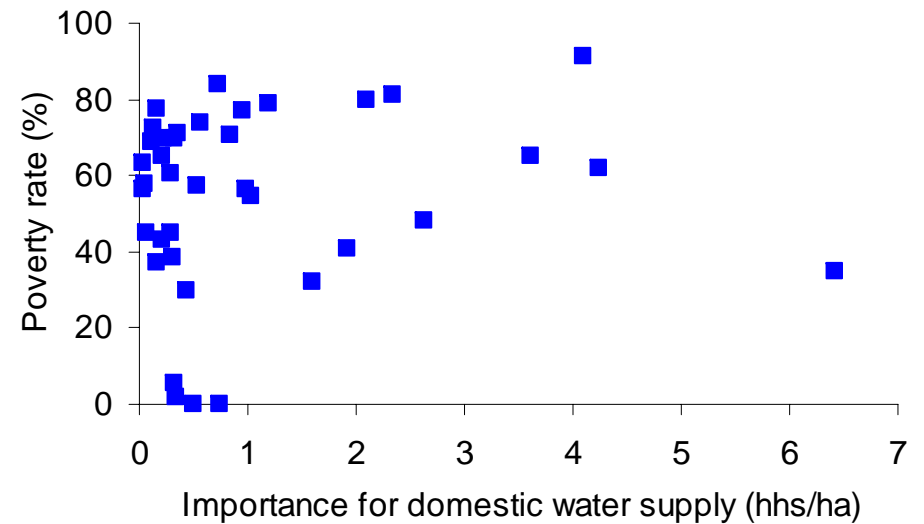
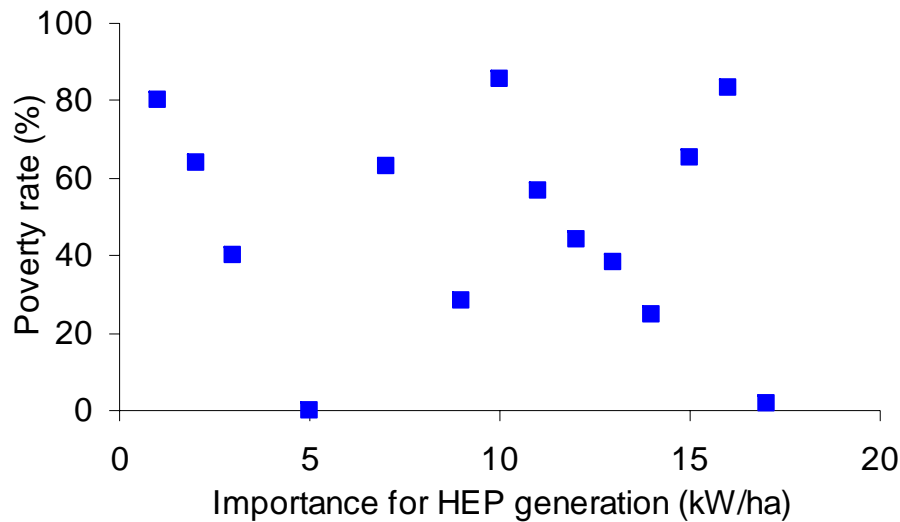
Low poverty rate in water supply area

# Guatemala: Poverty rate in water supply areas

Average poverty rate 44% (sd 21%)



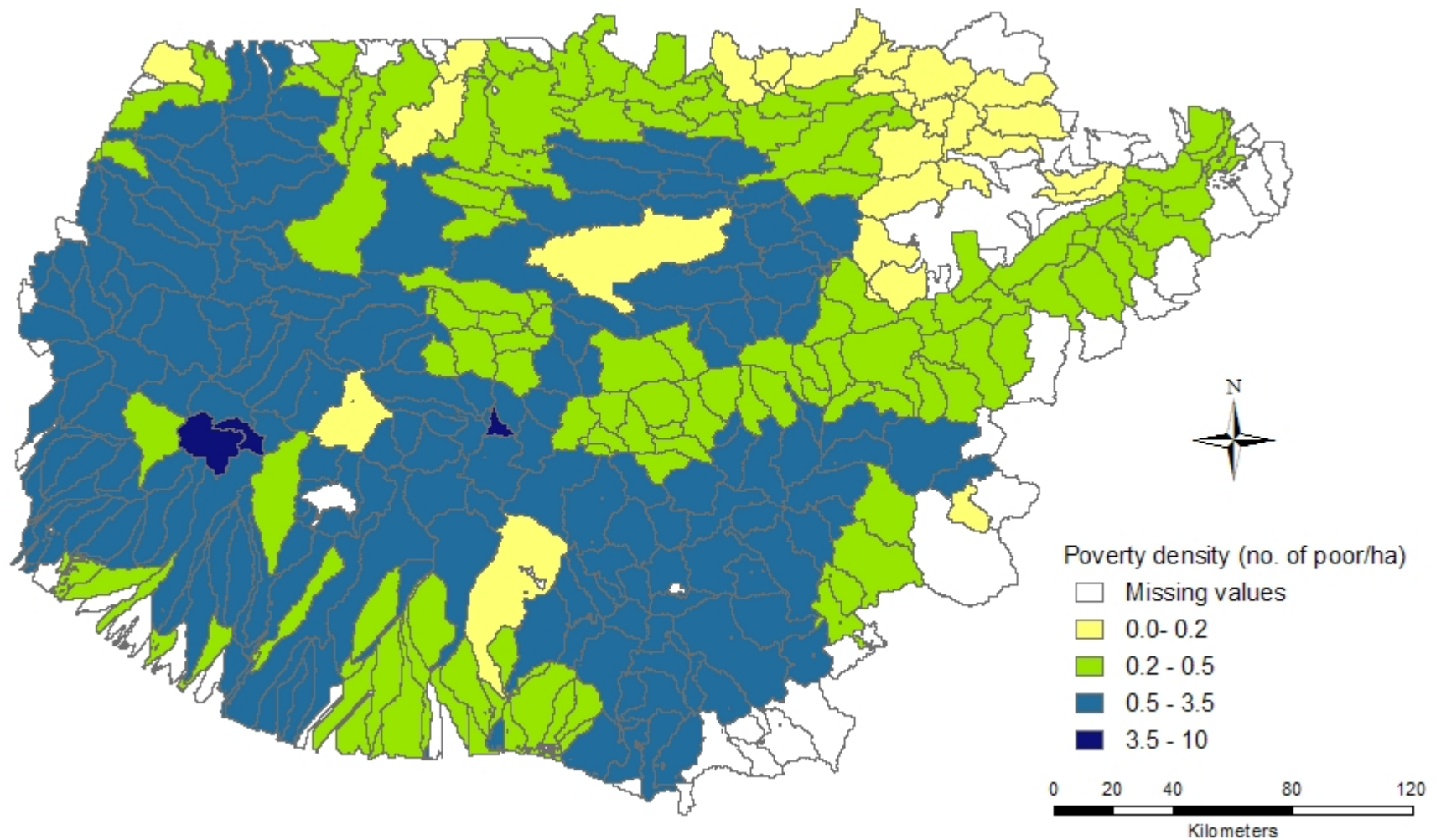
# Relationship between poverty rate and importance of water supply areas



Source: Pagiola, Zhang, and Colom, 2007

Pagiola, World Bank, 2007

# Guatemala: Poverty density by watershed

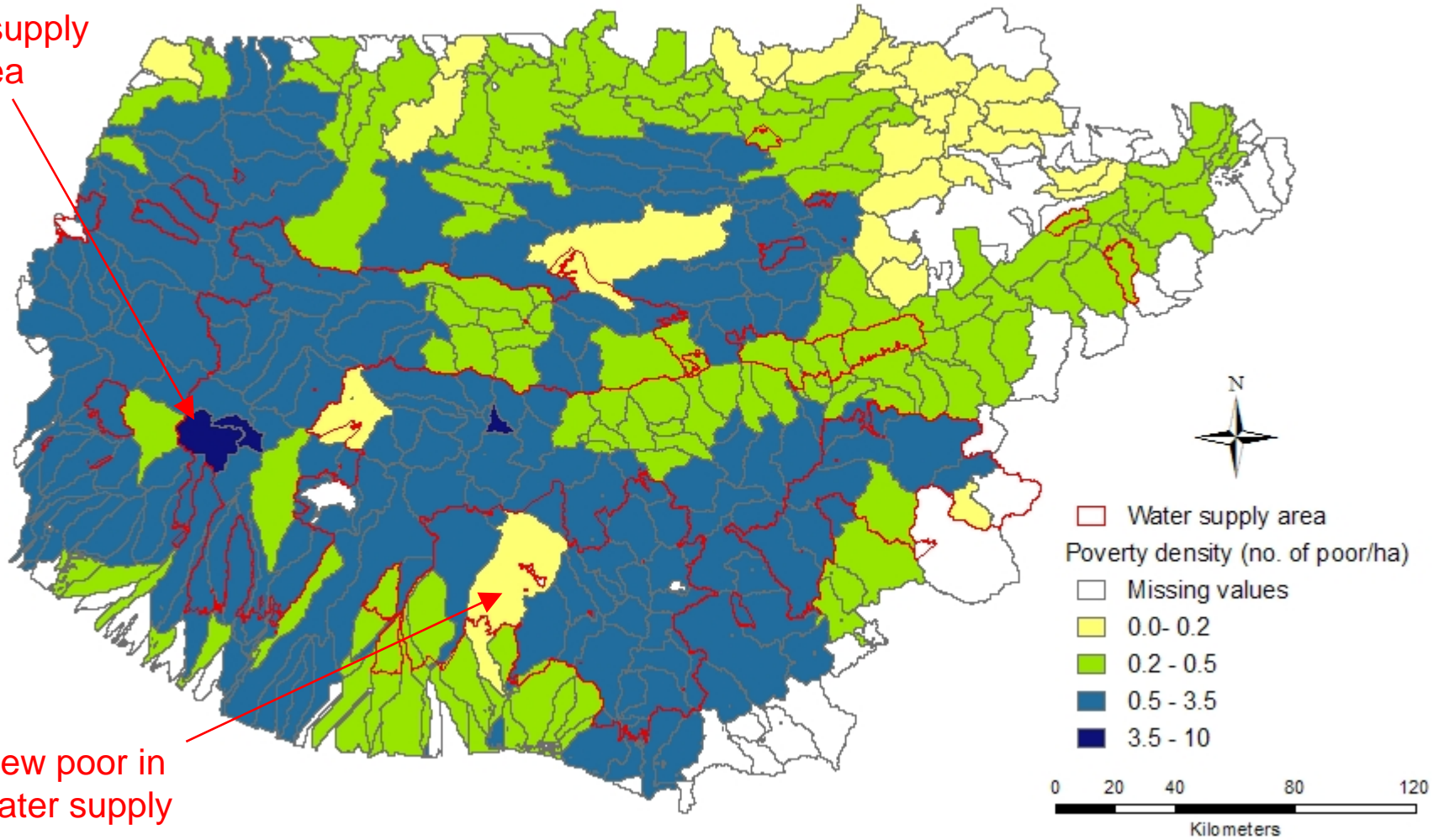




# Guatemala: Poverty density in water supply areas

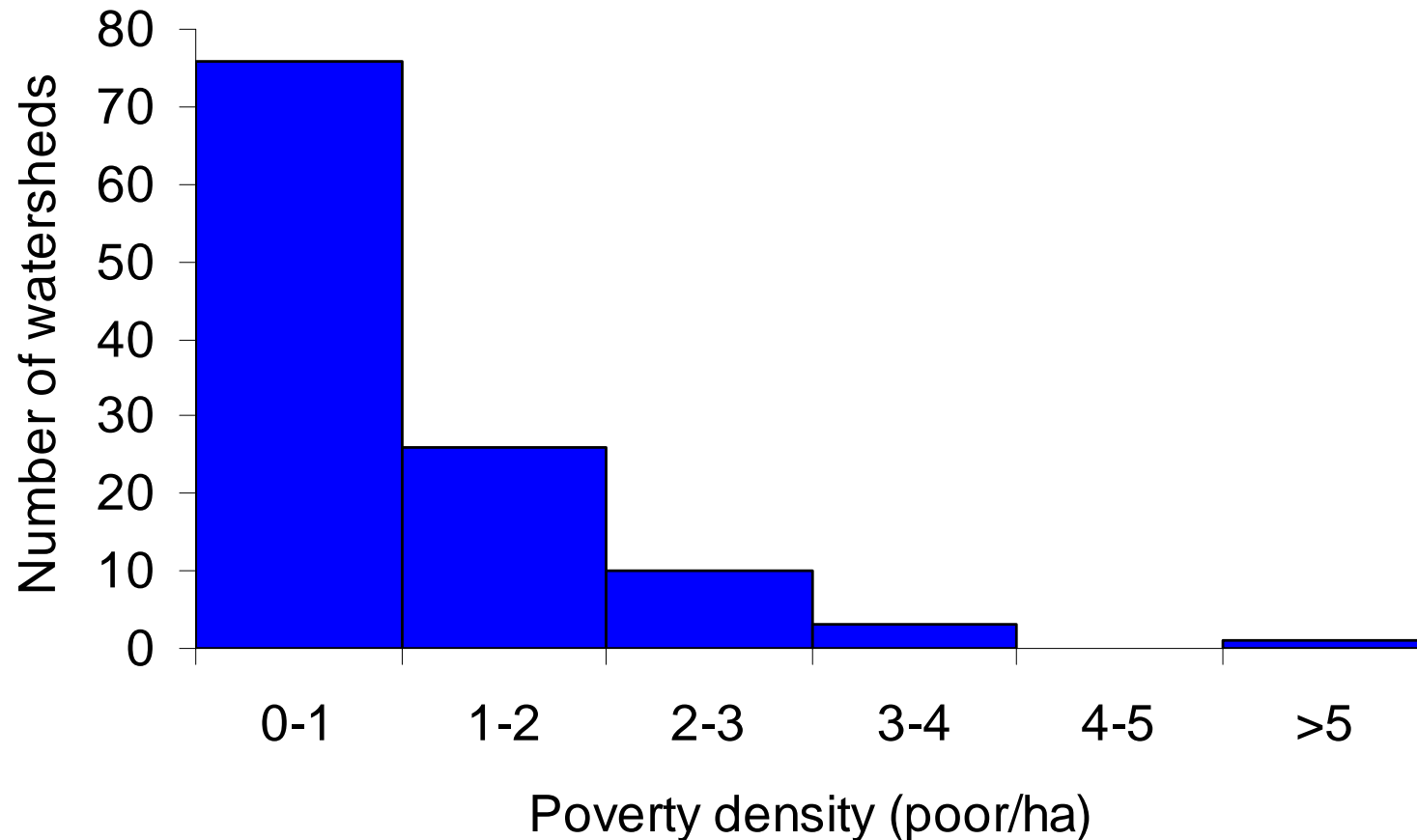
Many poor in water supply area

Few poor in water supply area



# Guatemala: Poverty density in water supply areas

Average poverty density 0.95/ha (sd 1.1)



# Guatemala: Poverty density in water supply areas

Total number of poor: 1.7 million

Share of country's poor\*: 27%  
(\* excluding Petén)

# PES and poverty

## Potential for local impact varies

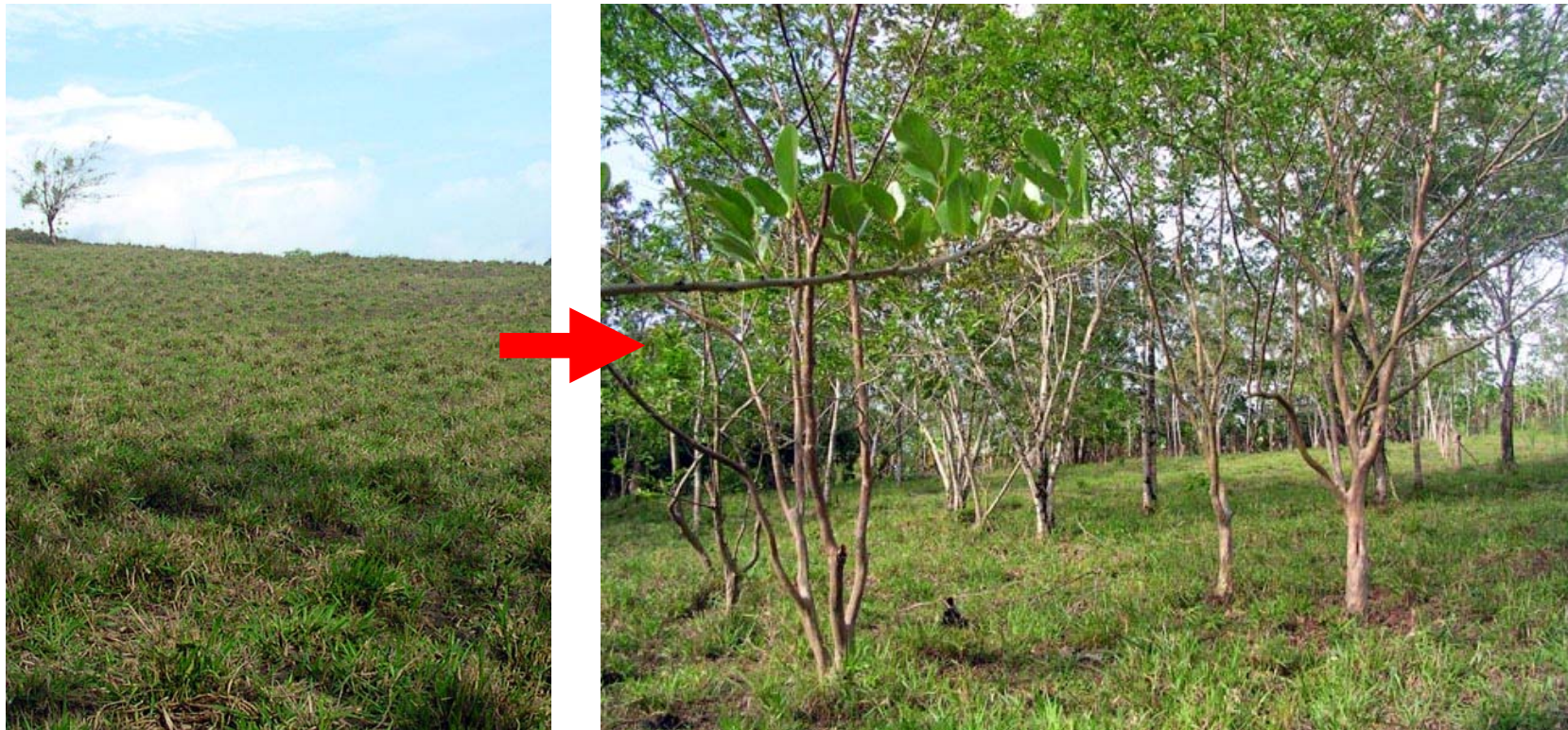
- Some areas with significant PES potential have high poverty rates, but not all

## Potential for national impact is significant but limited

- Max 27% of country's poor may be able to participate

# Can eligible poor households participate in a PES program?

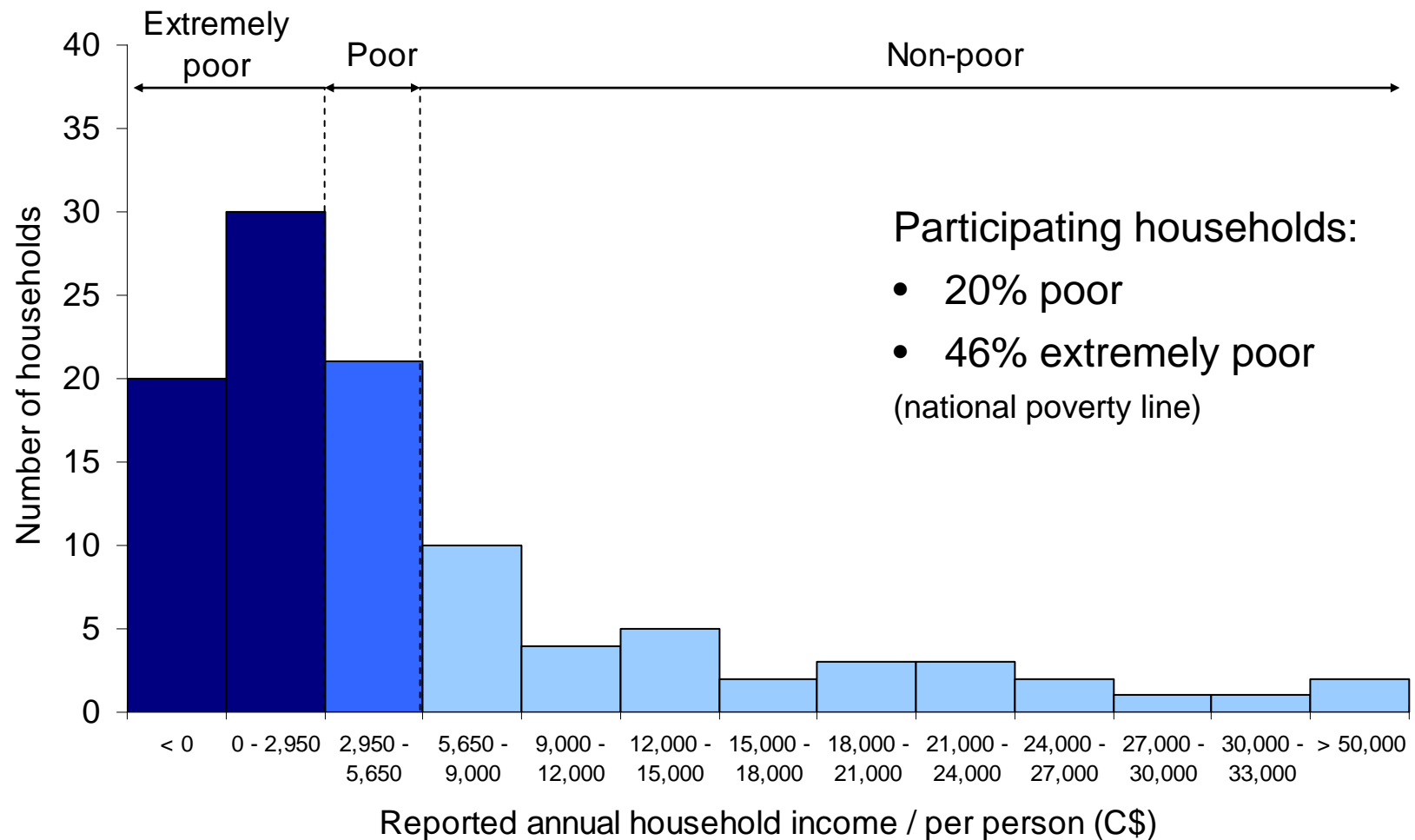
## Regional Integrated Silvopastoral Management Project Matiguás-Río Blanco, Nicaragua



Piloting use of PES to promote silvopastoral practices in degraded pastures, to improve biodiversity and carbon sequestration

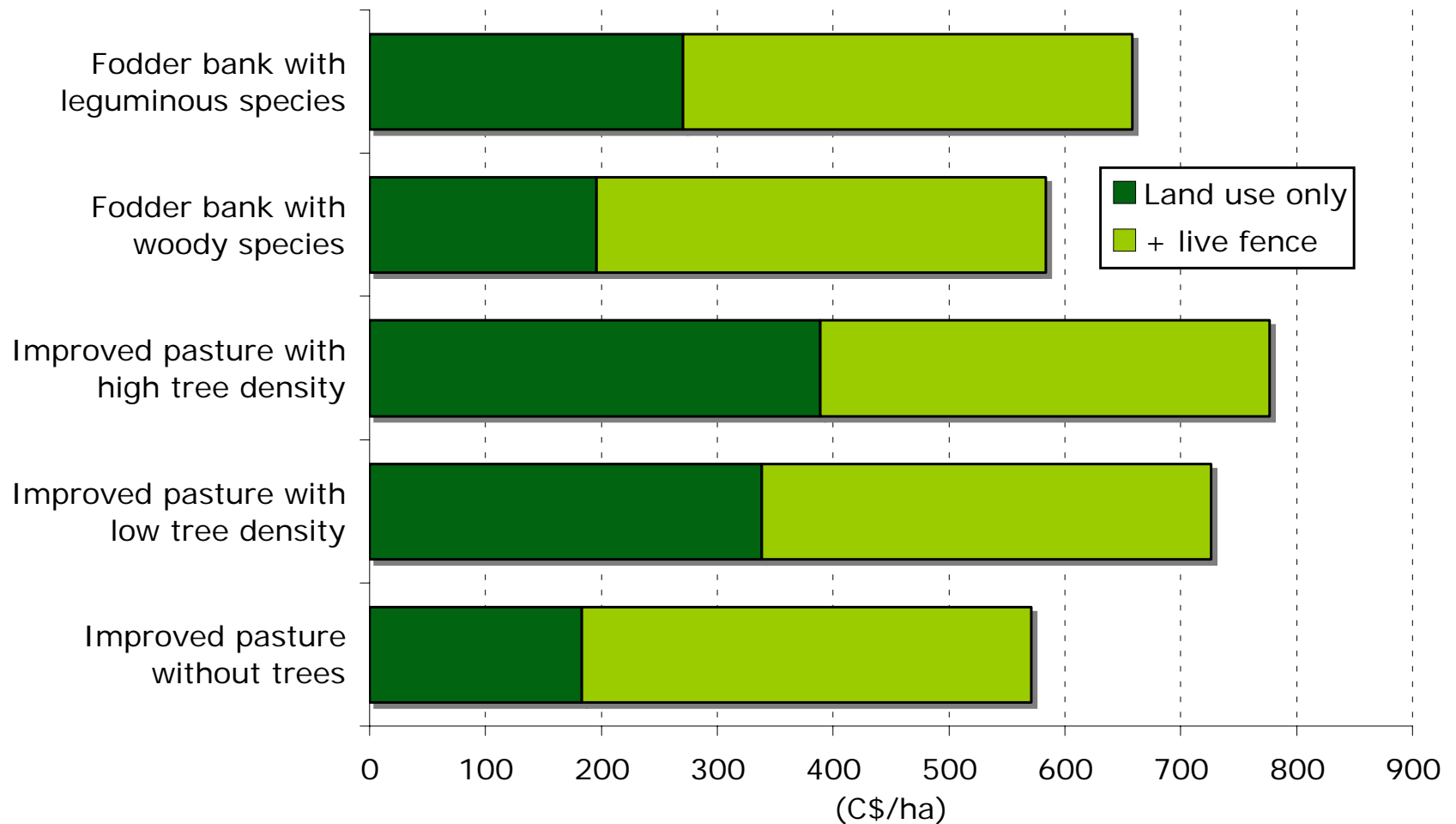
# A tough test: Most participants are poor...

Income level of program participants, Matiguás-Río Blanco, Nicaragua



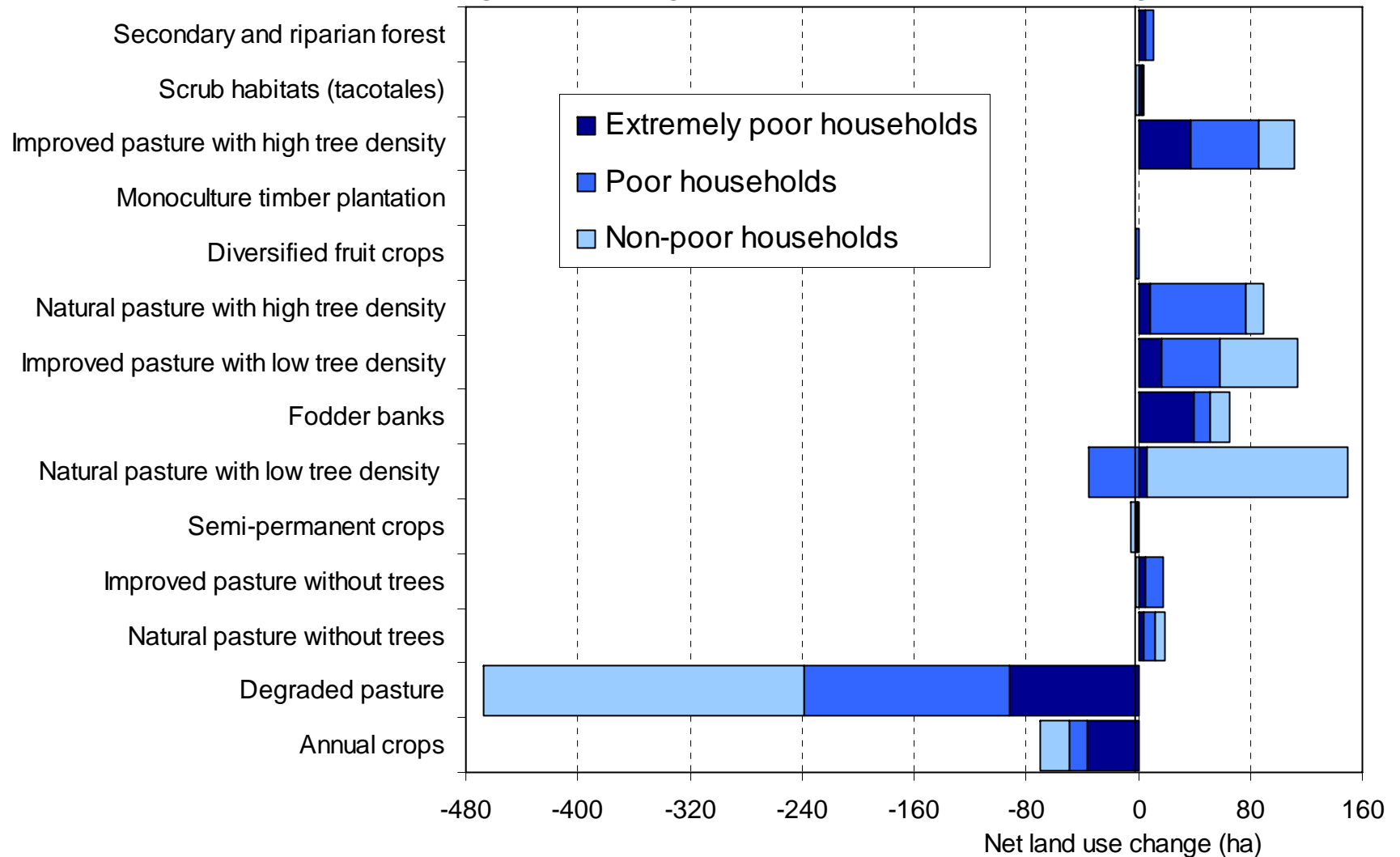
# A tough test: ... and participation requires expensive investments

Establishment costs of selected silvopastoral practices  
Matiguás-Río Blanco, Nicaragua



# Were the poor able to participate? Yes!

Land use change in Matiguás-Río Blanco, Nicaragua

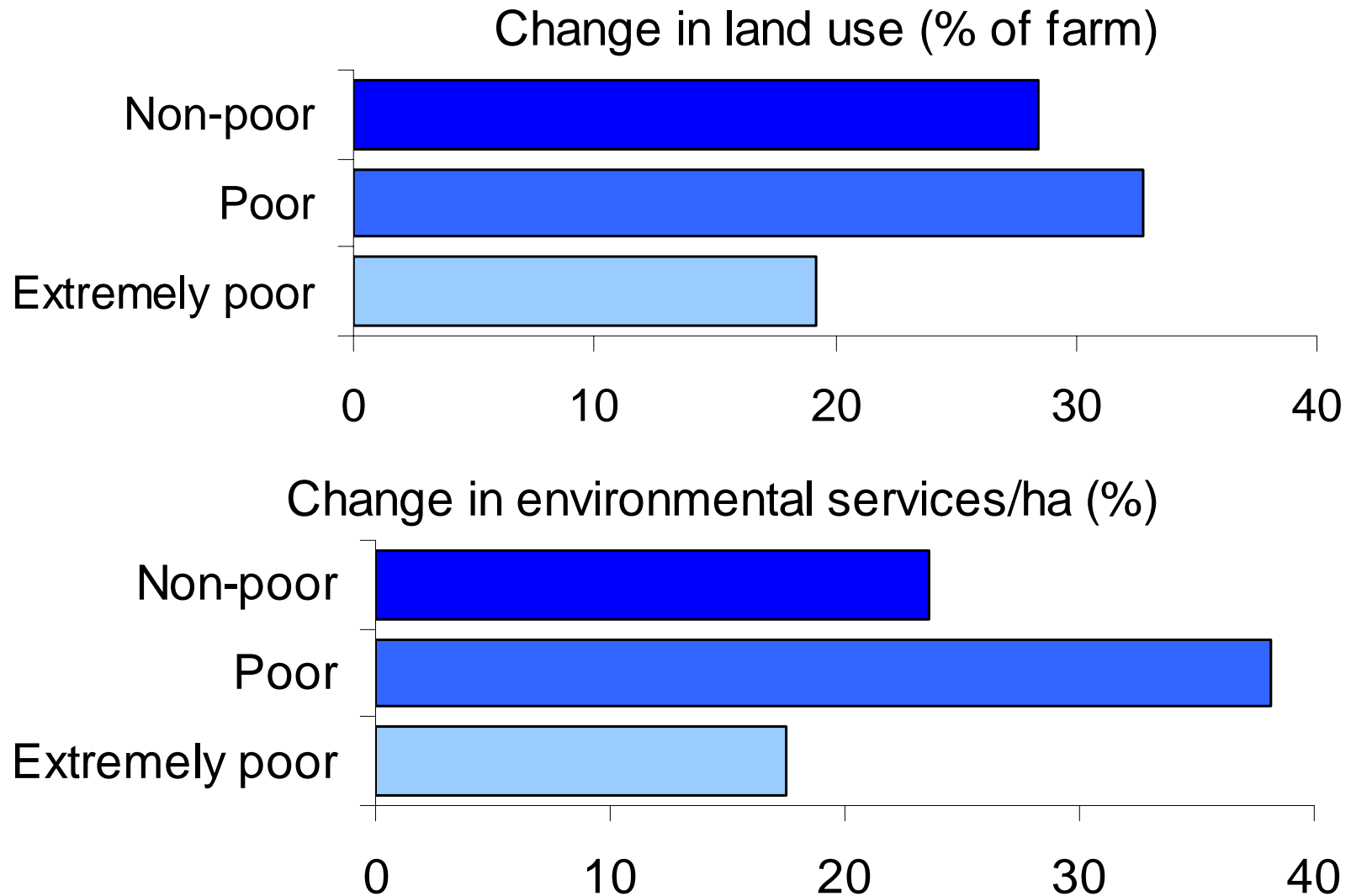


Source: Pagiola, Rios, and Arcenas, 2007

Pagiola, World Bank, 2007



# Were the poor able to participate? Yes!



# Can the poor participate in PES?

- Important: PES are *not* poverty reduction programs
  - Trying to make them be poverty reduction programs can undermine them
  - But can try to maximize positive impacts/minimize adverse impacts
- A small but significant portion of the poor are potential participants in PES
- When the poor are eligible to participate, their ability to participate may be greater than assumed
  - Transaction costs a bigger obstacle than household characteristics
- Appropriate PES design can help
  - Appropriate contract design
  - Low transaction costs
  - Support to participants

# Guidelines for Pro-poor PES

- PES is *not* a poverty reduction mechanism
  - Poverty cannot be used as a criterion for participation
  - A pro-poor PES program is one that maximizes its potential positive impact and minimizes its potential negative impact.
- Keep transaction costs low
  - Devise specific mechanisms to counter high transaction costs.
- Ensure that the social context is well understood
- Avoid implementing PES programs in areas of insecure land tenure
- Provide targeted assistance to overcome problems that impede the participation of poorer households
- Seek external funding for additional costs of pro-poor programs