

Land degradation in sloping uplands:  
economic drivers and strategies for  
promoting sustainable land use

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## Major issues

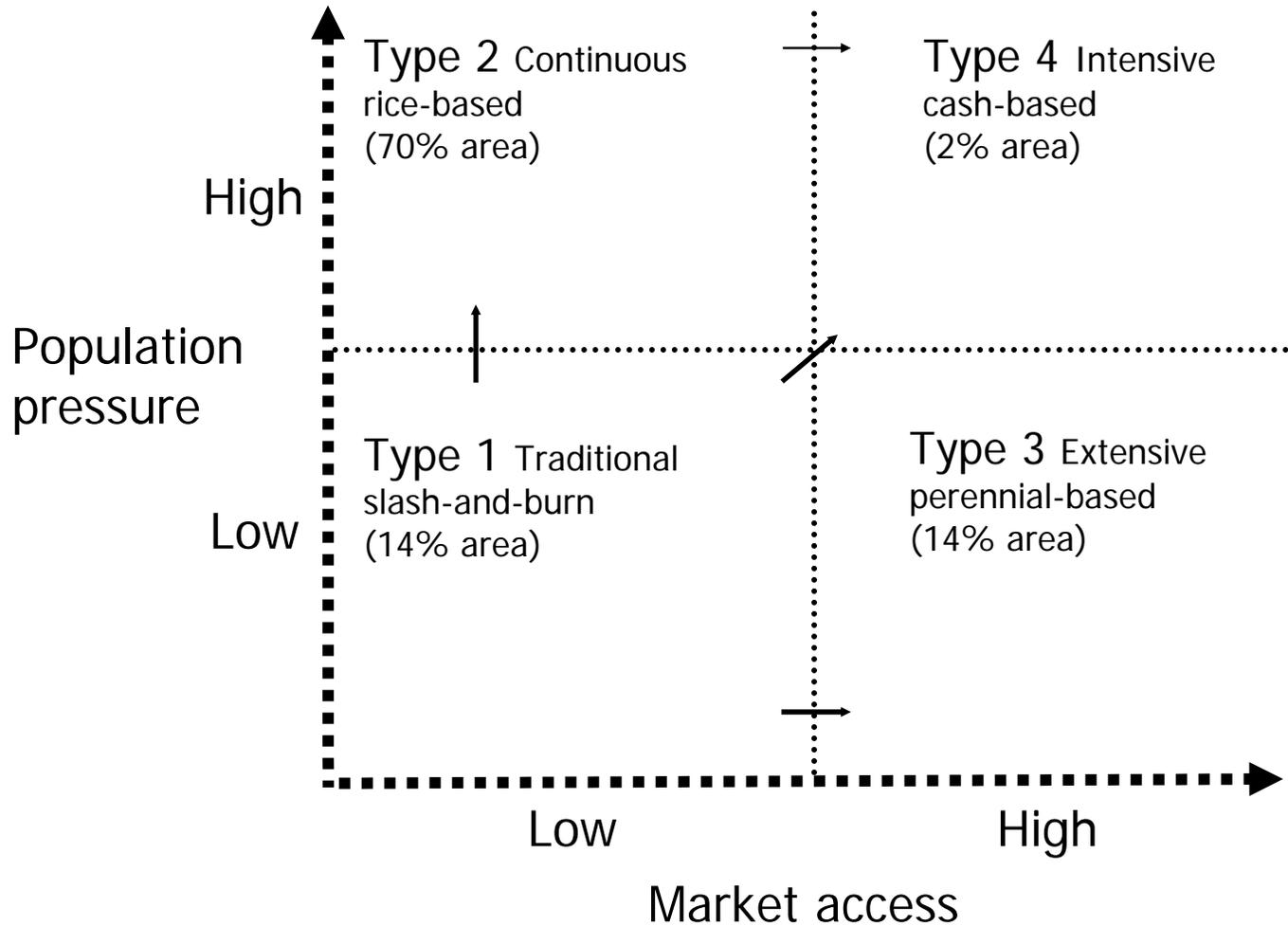
- Focus on soil erosion rather than on sustainable land use systems
- Limited and sporadic adoption

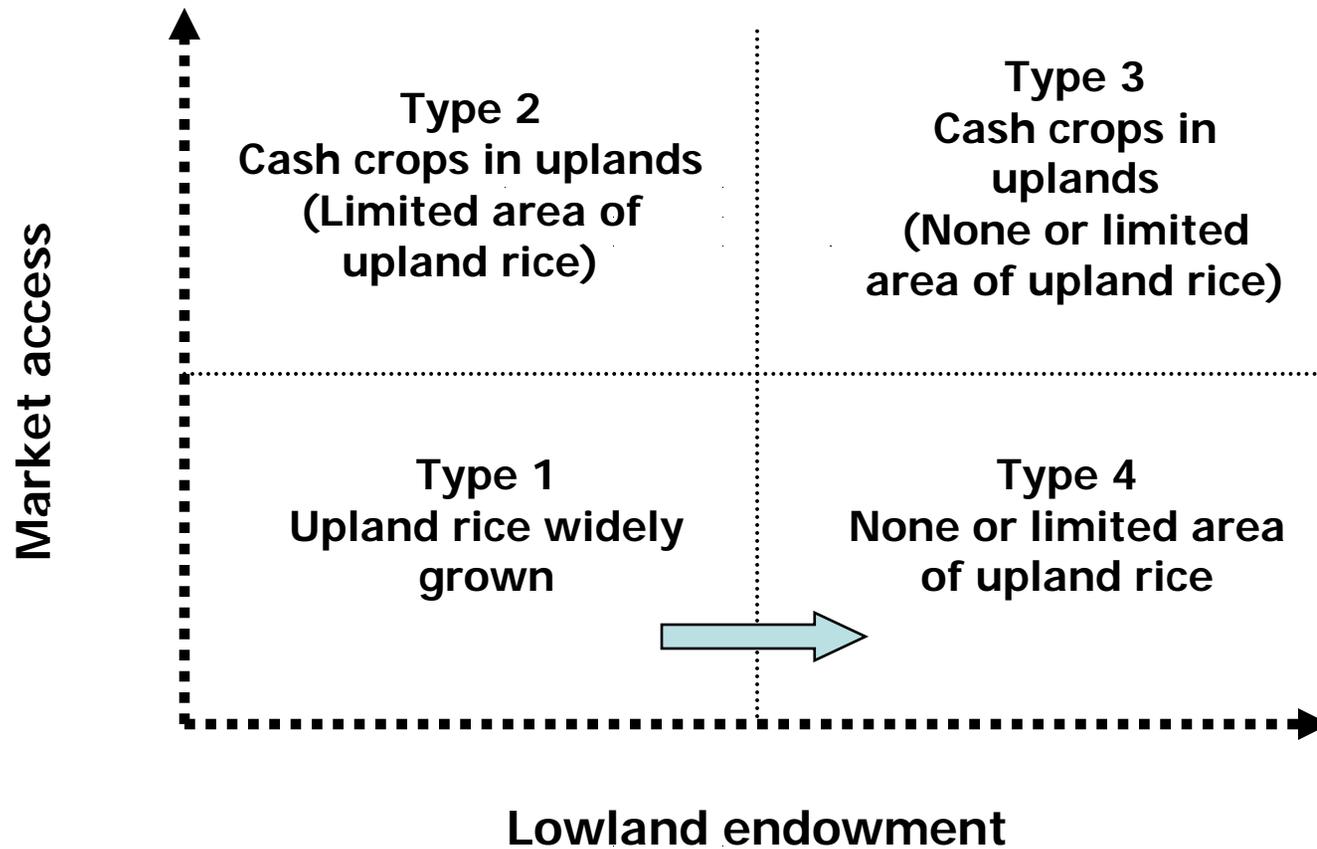
What are the major drivers of agricultural land use patterns?

# Production systems characteristics and demand for soil conservation

- Population density
- Market access
- Lowland endowment

# Upland rice systems in transition



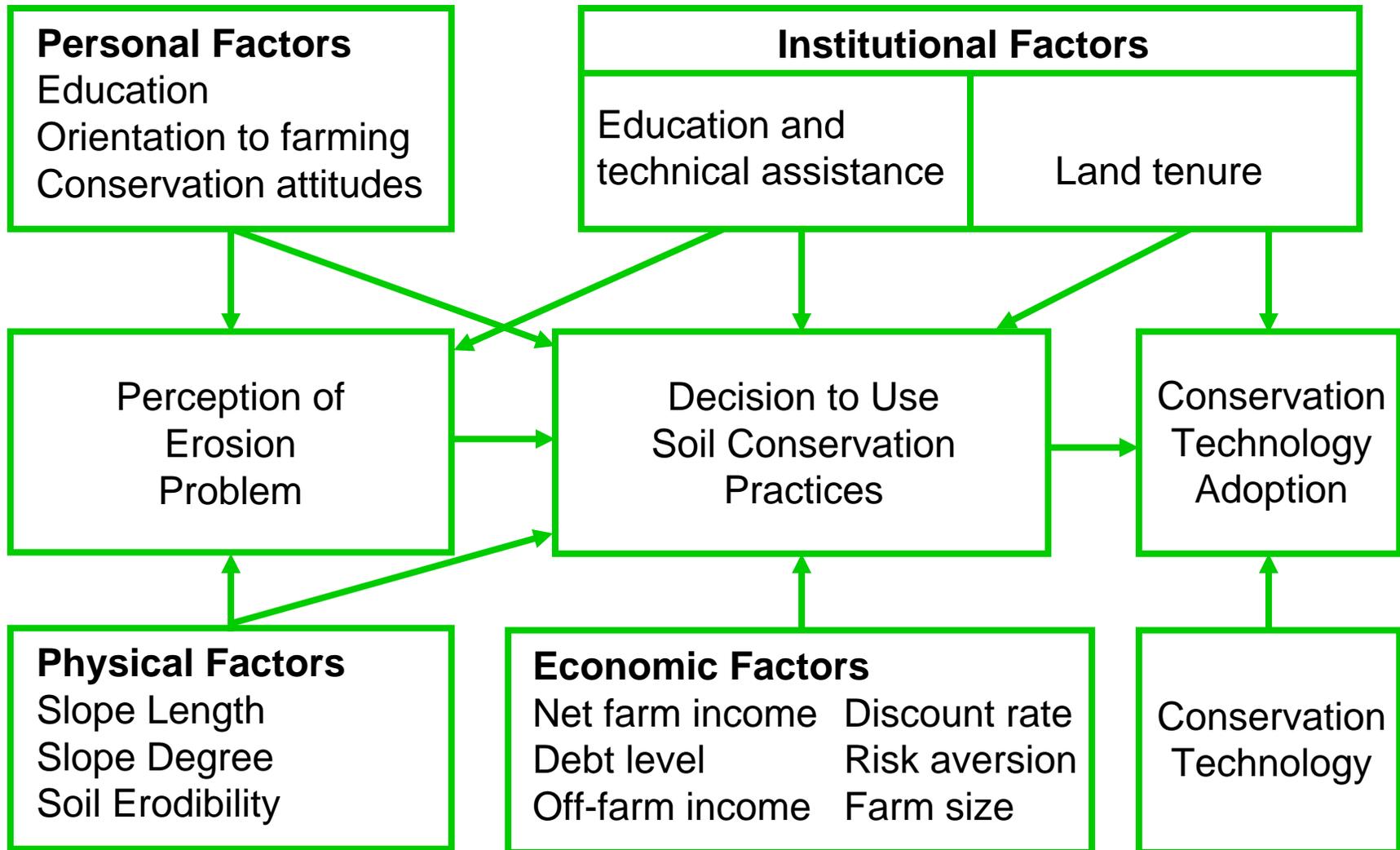


**Typology based on market access and lowland endowment**

# Factors determining adoption

- Economic environment
- Farmer-specific factors
- Farm-specific factors
- Technology-specific factors

# Decision-making process for the use of soil conservation practices



## Land conservation and public policy

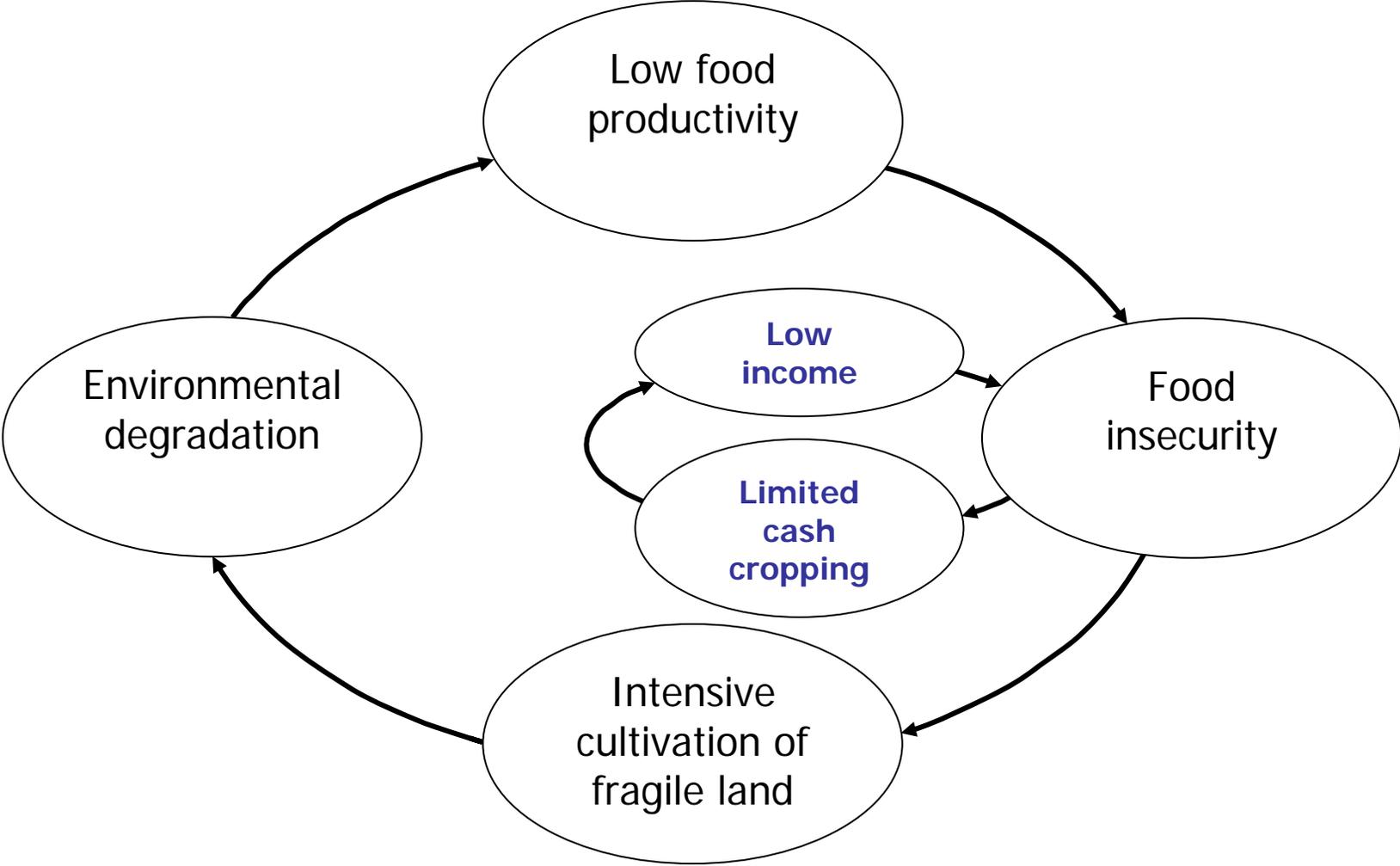
- Direct effect : returns to conservation
- Indirect effect: land use changes

- Price of output
- Returns to agriculture
- Upland-lowland interactions
- Input subsidy
  - Fertilizers
  - Credit
- Transportation and marketing

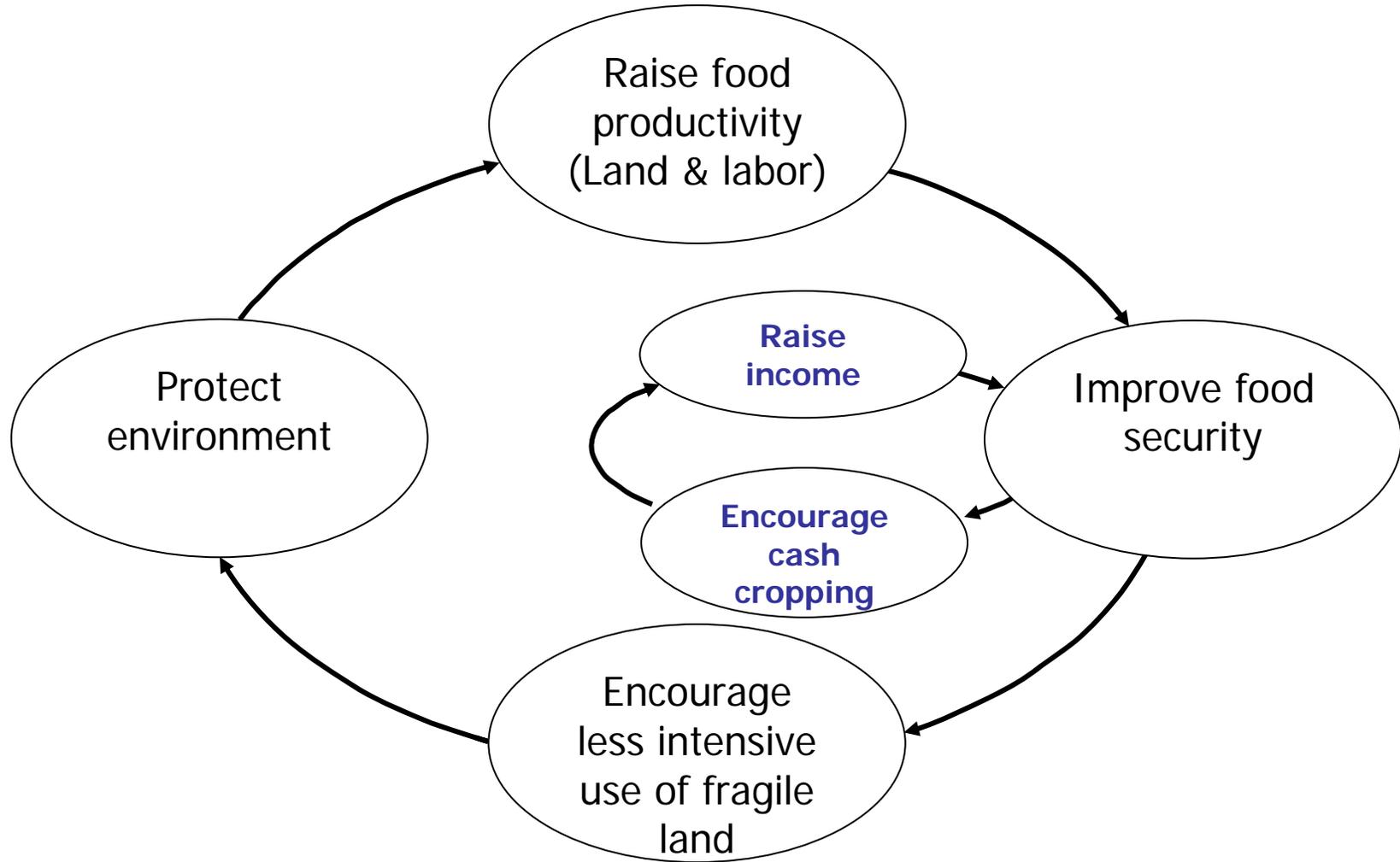
# Property rights and soil conservation

- Tenure security and investment
- Ownership (private and communal)
- Tenure security and legal title  
(cost of enforcement)
- Non-ownership and tenure security
- Legal title
  - Access to credit
  - Land market
- Evolution of property rights

# Food systems based intervention



Entry point



“Income growth with household food security”

Green landscapes and food-secure  
households

*IRRI's strategy for upland research*

# Landscape management

“Flows”

Water

Sedimentation

Household resources



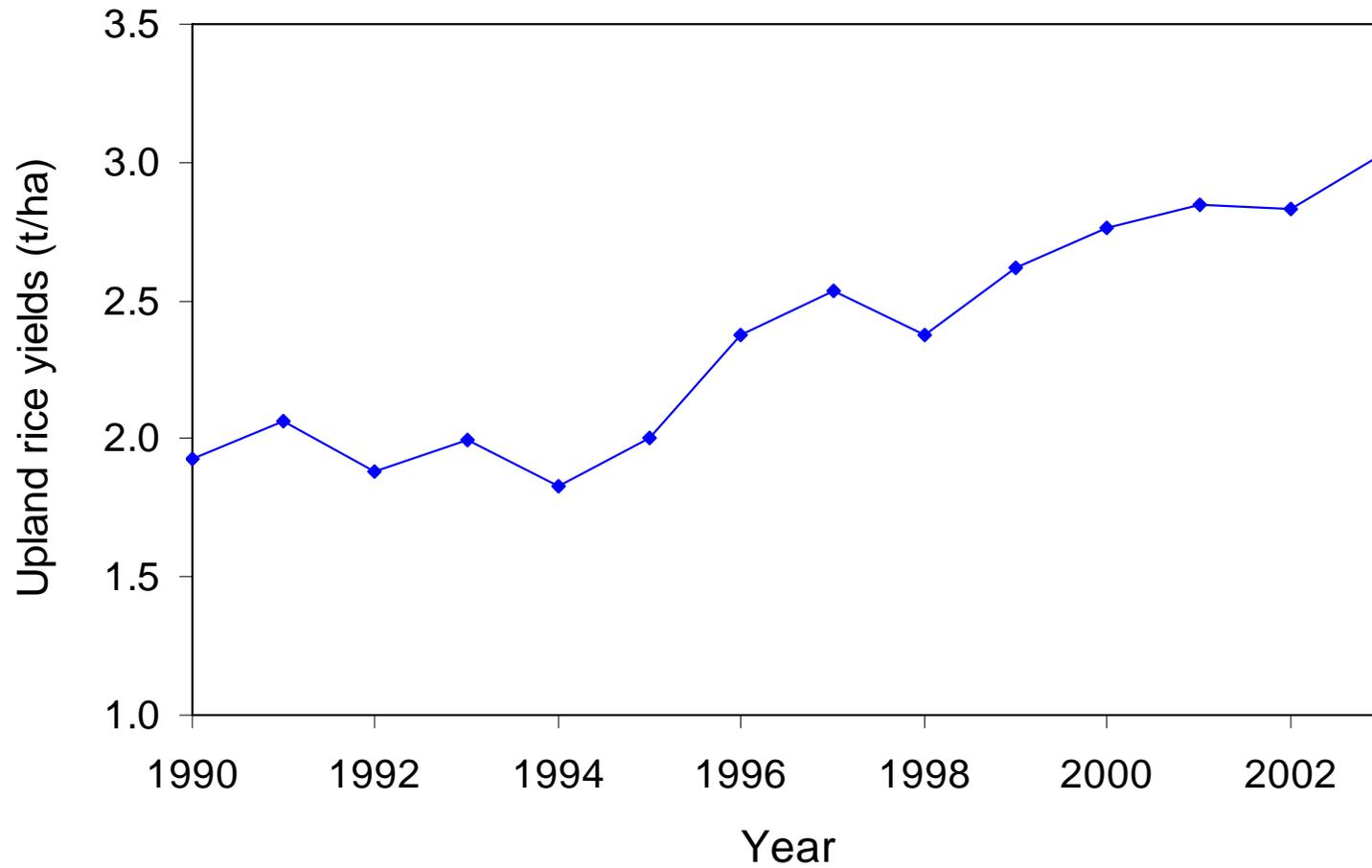




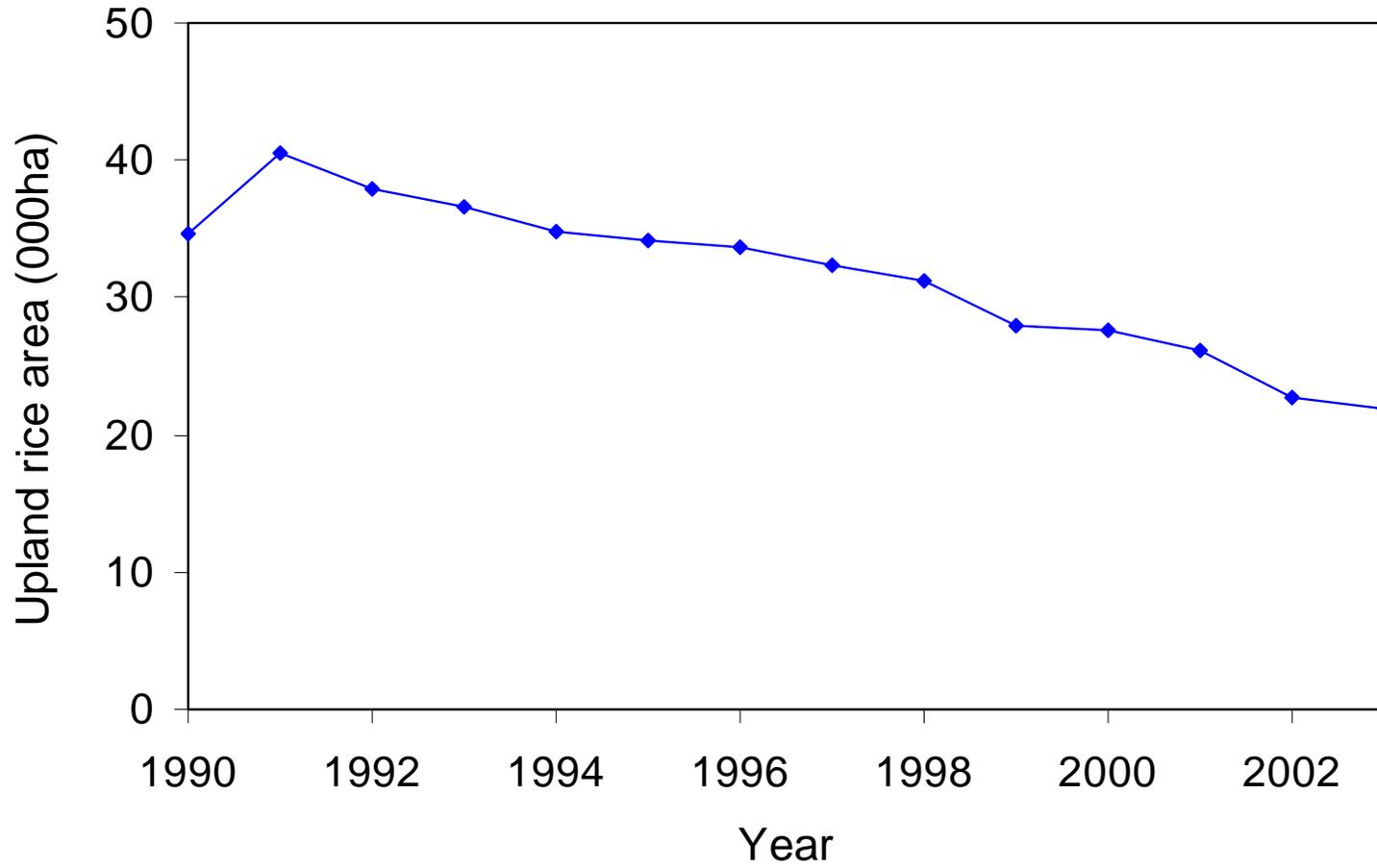


# The Yunnan Experience

## Upland rice yield in Simao, Yunnan



## Upland rice area in Simao, Yunnan



# Ingredients for Success

- Improved technology
- Cash cropping
- Government support

## Concluding remarks

- Diversity of factors and results
- Importance of regional policies and bottom-up planning
- Focus on land use rather than on soil erosion
- Solution may not be on-site and may even be outside agriculture