

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

Sushil Pandey

Major issues

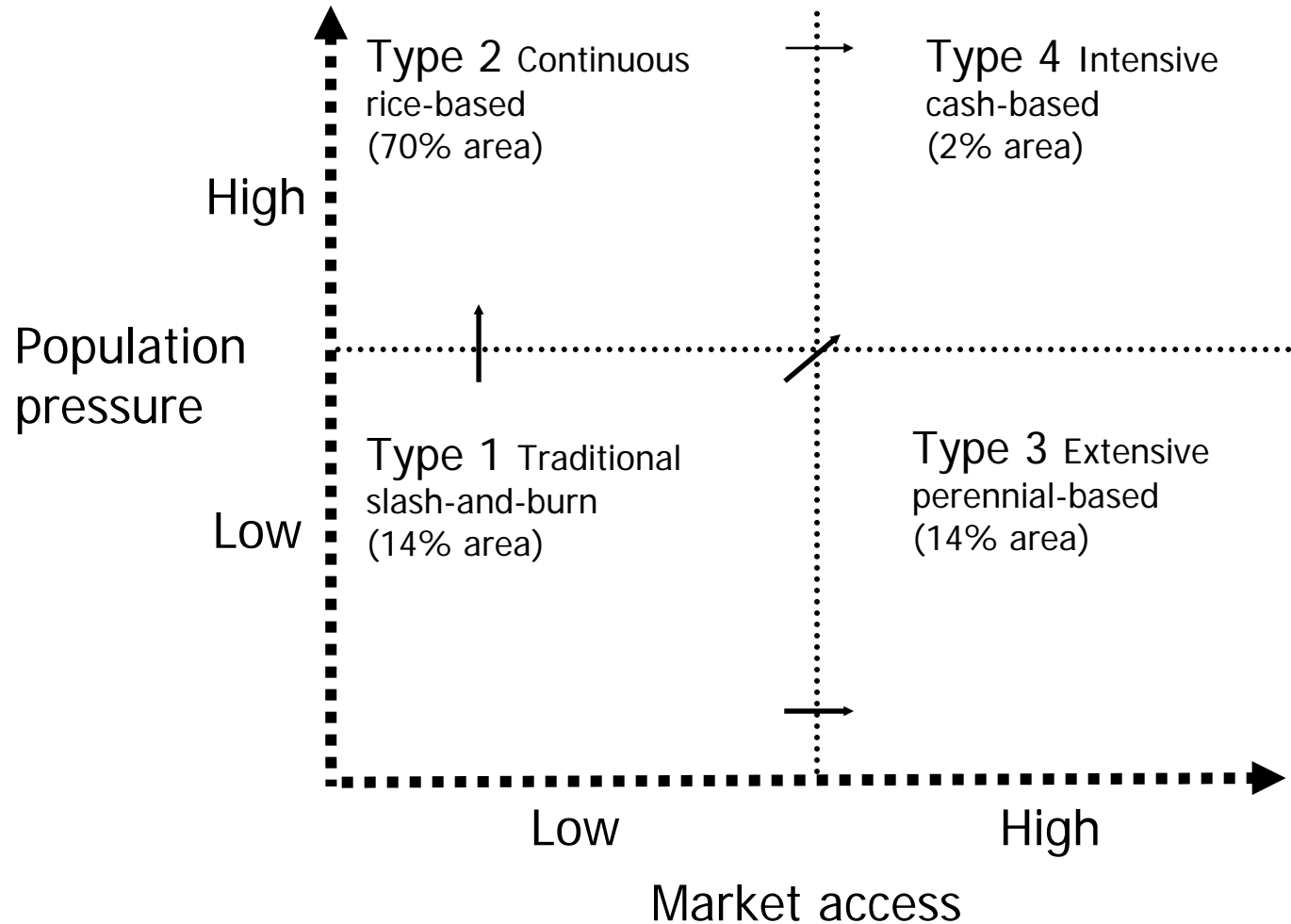
- Focus on soil erosion rather than on sustainable land use systems
- Limited and sporadic adoption

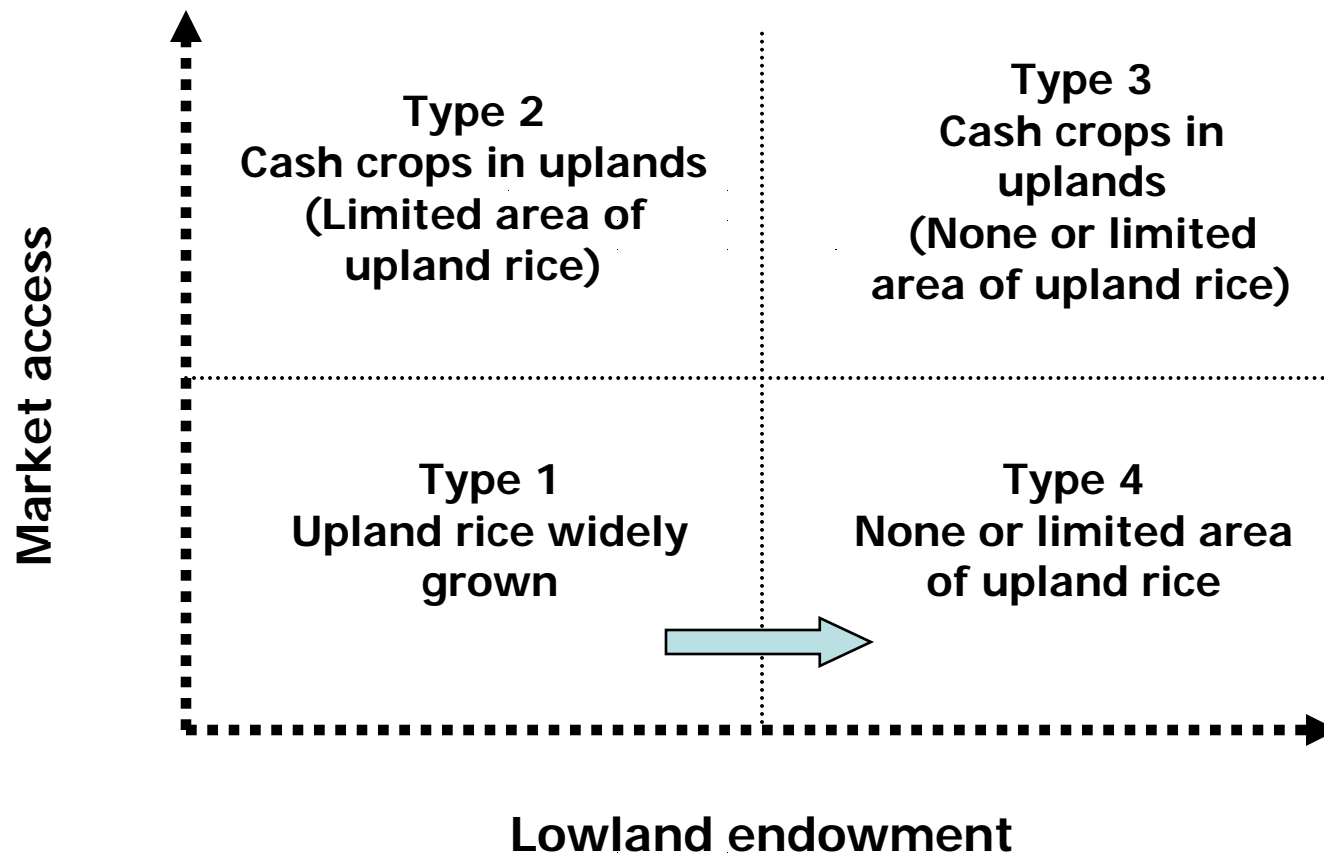
What are the major drivers of agricultural
land use patterns?

Production systems characteristics and demand for soil conservation

- Population density
- Market access
- Lowland endowment

Upland rice systems in transition



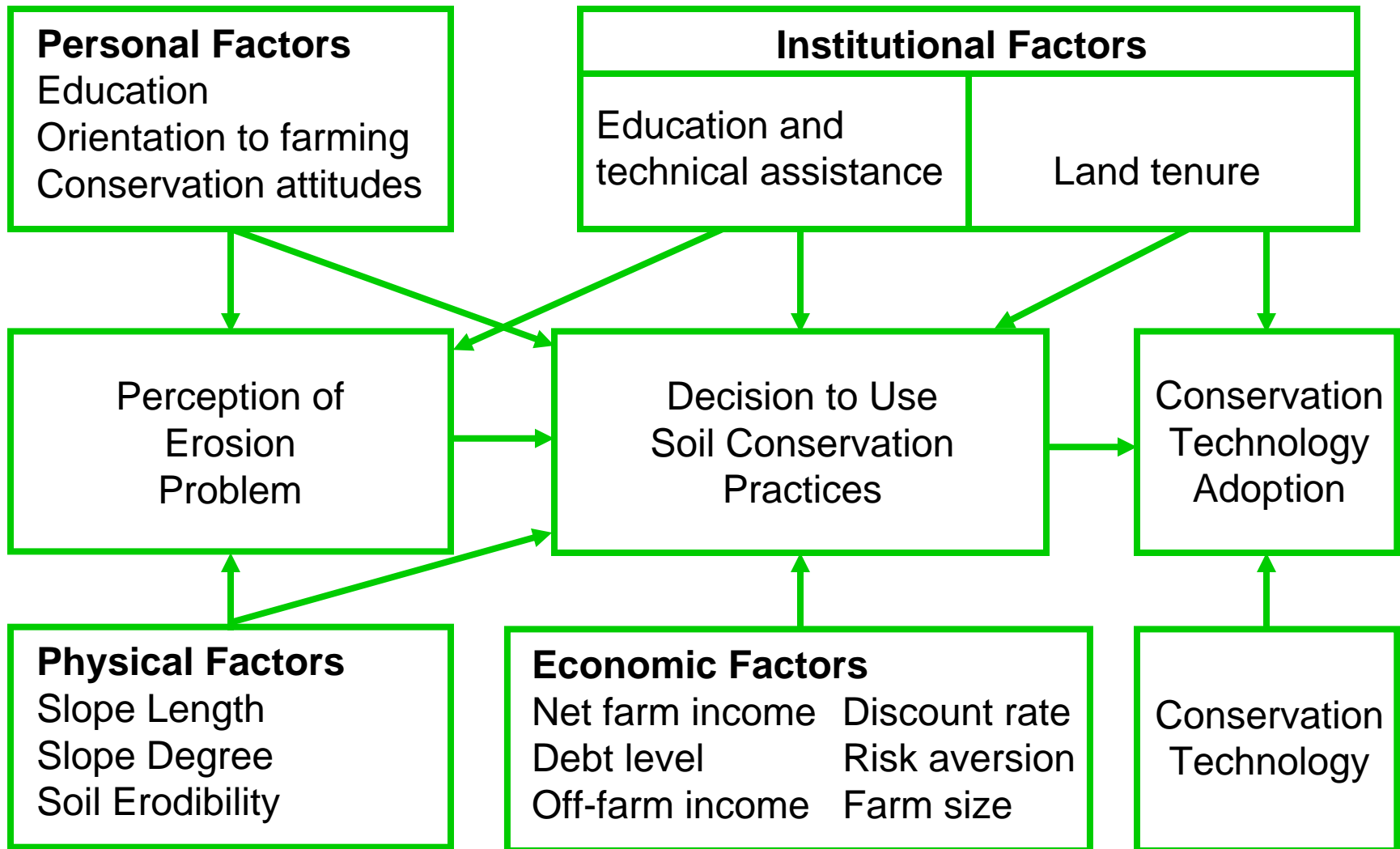


Typology based on market access and lowland endowment

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

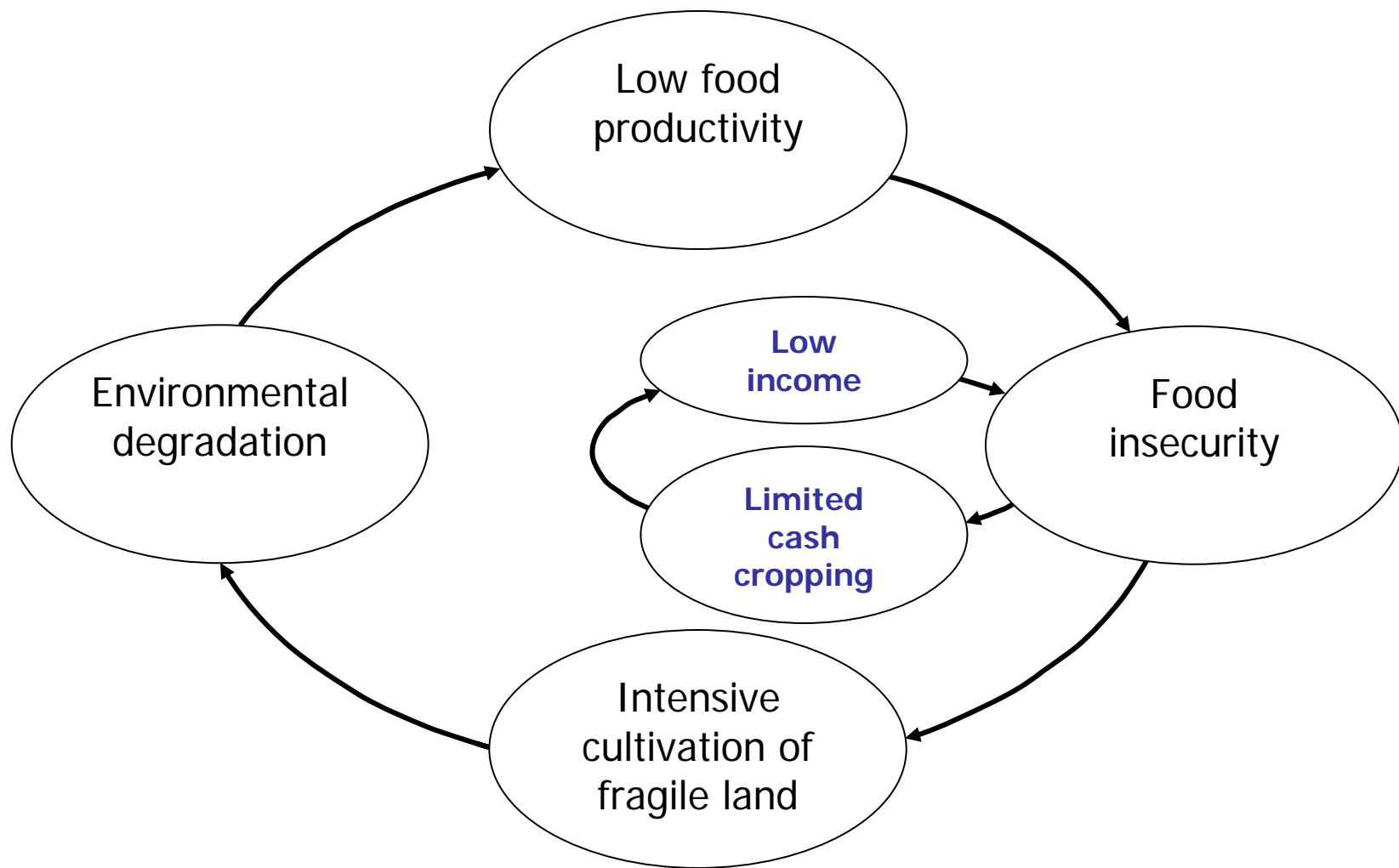
- Direct effect : returns to conservation
- Indirect effect: land use changes

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

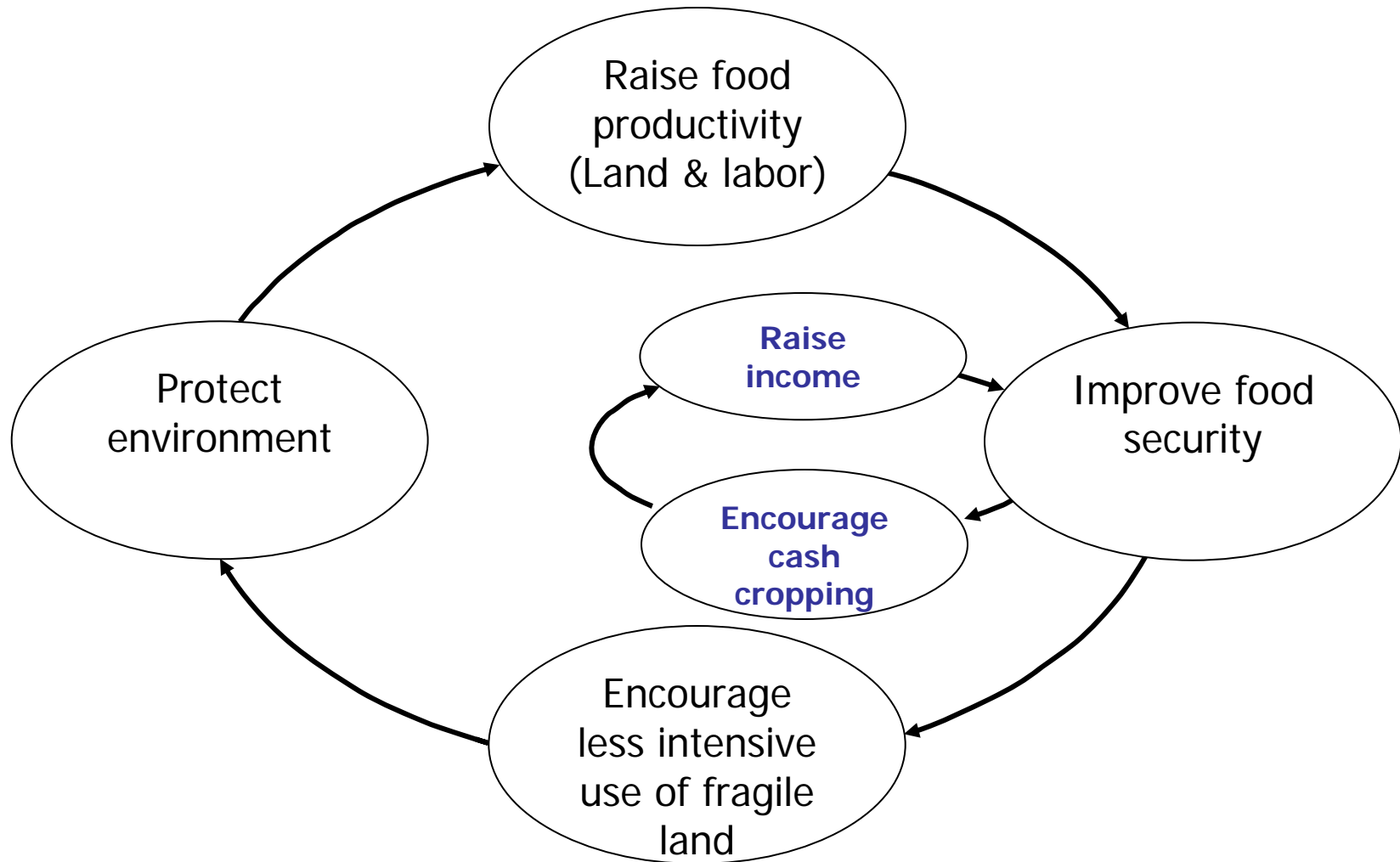
Property rights and soil conservation

- 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



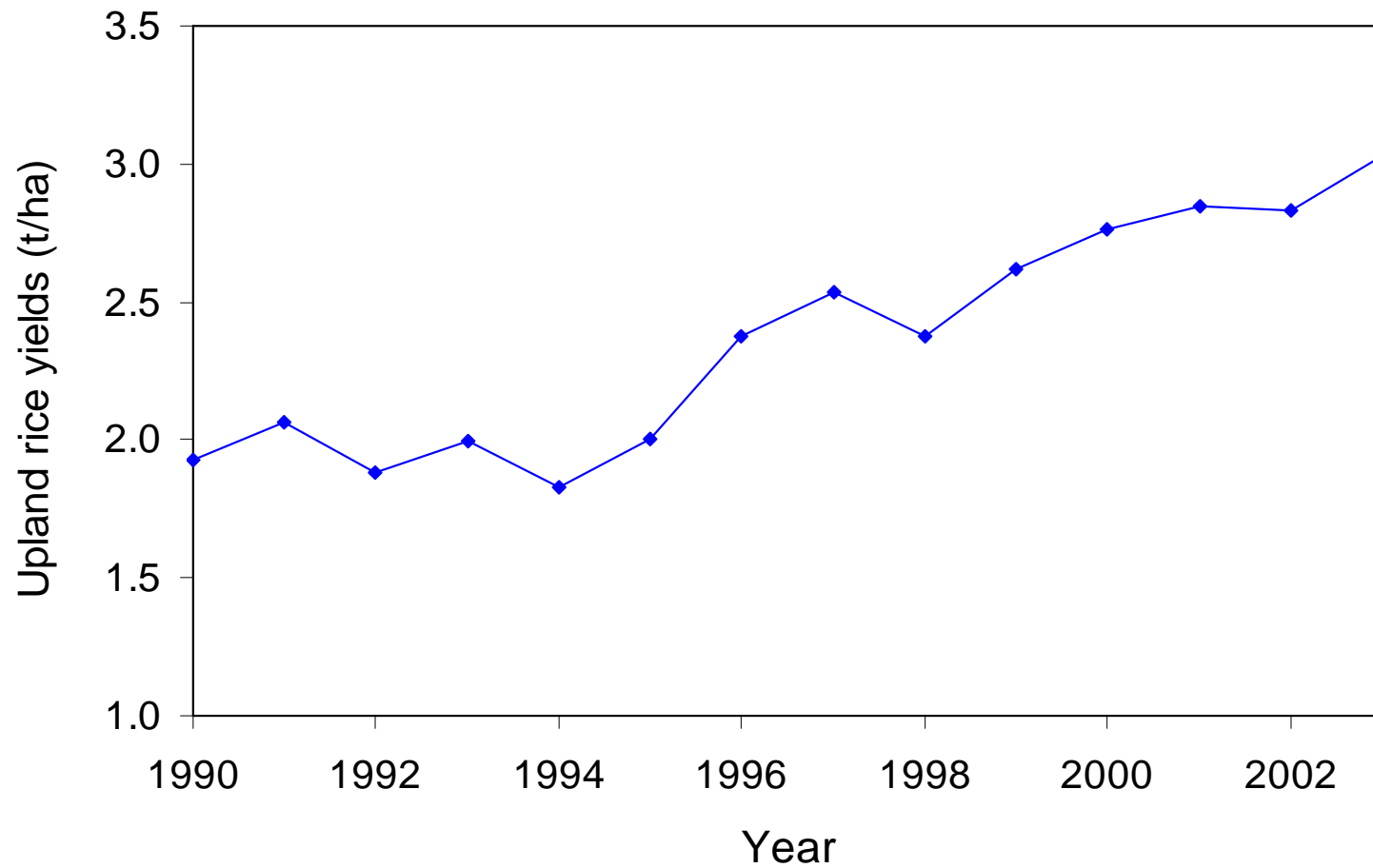




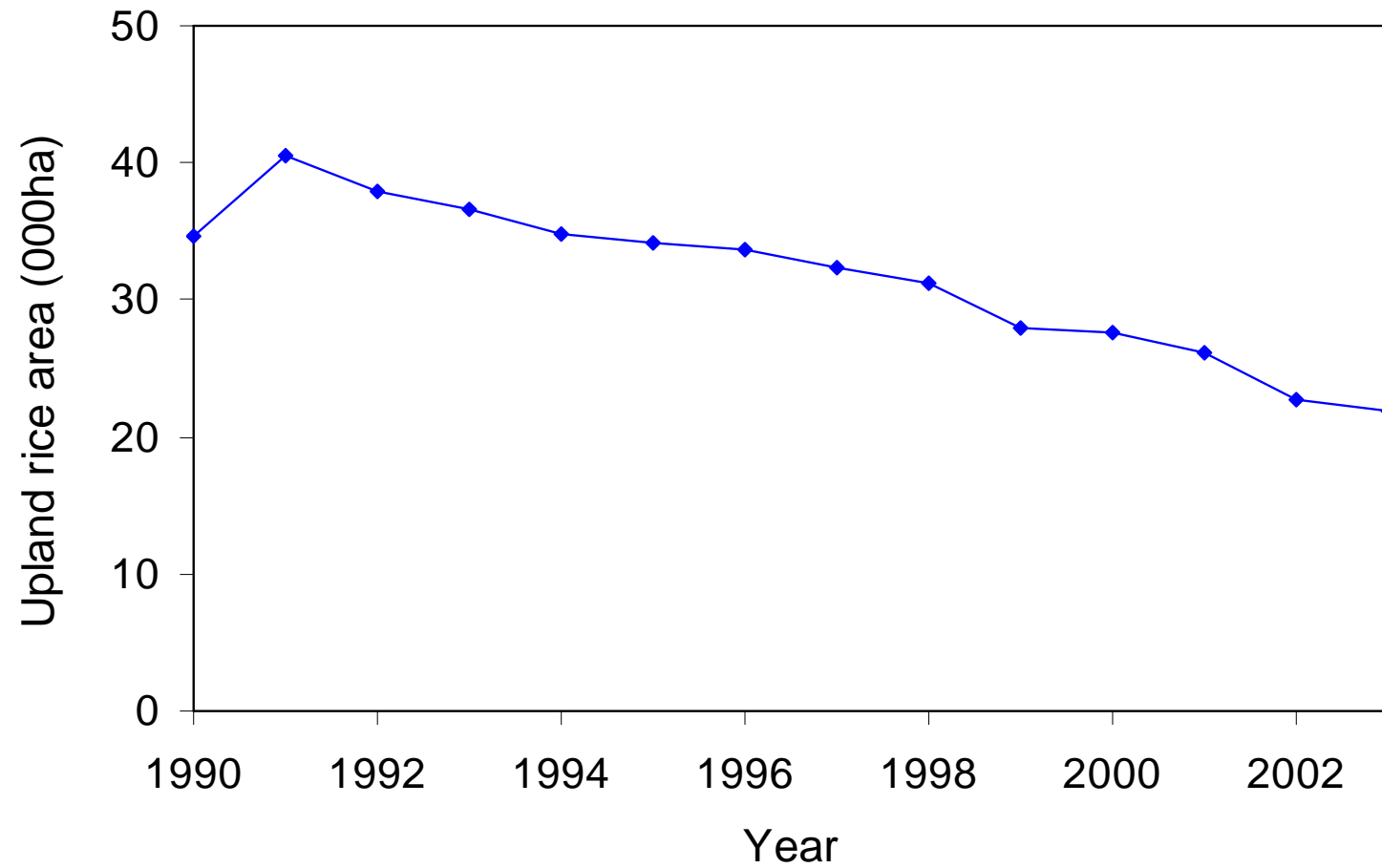


The Yunnan Experience

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