

Factors affecting small farmers adaptive responses to climate change

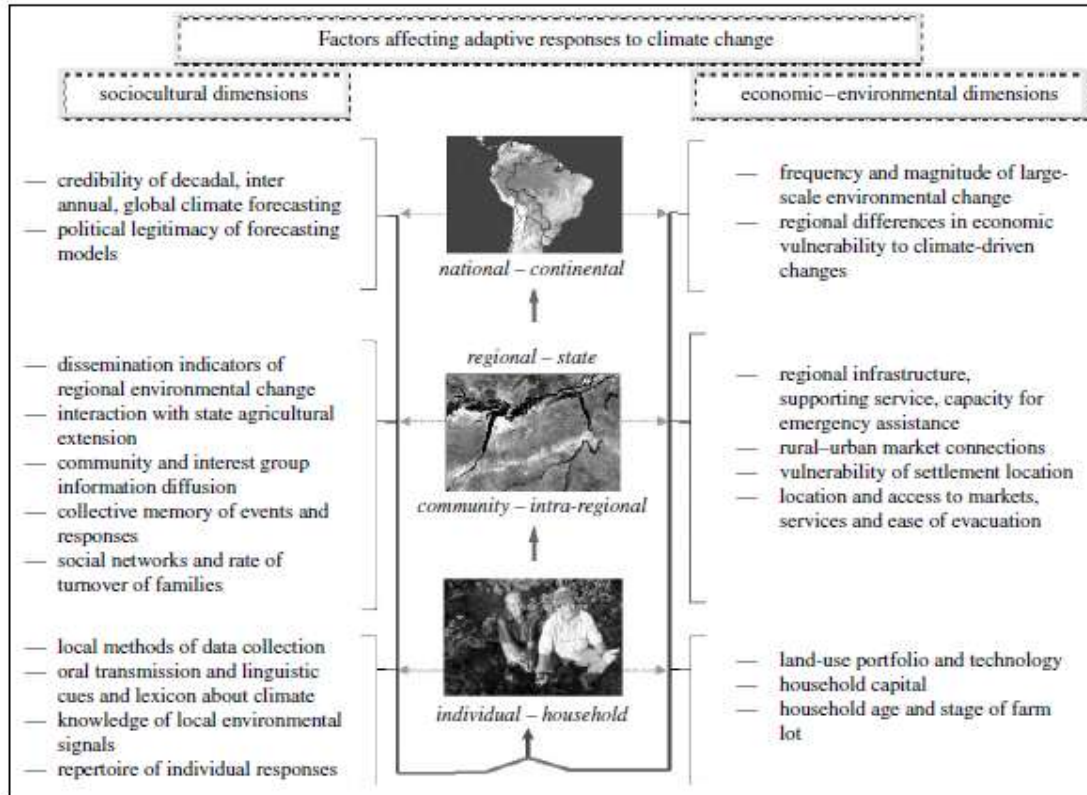


Figure 1. Conceptual framework: factors affecting adaptive responses to climate change in a multilevel perspective.

- Mismatch in scale between climate information and farmers needs
- Technology bottleneck, limited ability to respond to climate variability
- Poor infrastructure

Untangling level specific factors affecting spatial pattern & temporal intensity

Table 1. Suggested variables explaining the spatial pattern and temporal intensity of deforestation trajectories at different levels of analysis, 1970–2001.

Spatial patterns	Temporal intensities
Brazilian Amazon	
Federal transportation network	Policy and credit incentives for land use
Colonization and settlement	Fluctuations in interregional migration
Distribution of institutional arrangements	Macroeconomic stability
Regional geography and topography	Regional, national, global market demands
Sub-regional level	
Spatial distribution of settlements	History of settlement occupation & land conflicts
Spatial organization of and tenure systems	Rates of in- and outmigration
Environmental endowments and topography	Market prices for dominant commodities
State and municipal transportation networks	Economic incentives and subsidies
	Changes in land use regulations
Settlement level	
Density of local transportation network	Rates of in- and outmigration
Types of land tenure and institutional arrangements	Rates of lot-turn over Fluctuation in market opportunities
Dominant land-use system and technology	Cycles of development projects and subsidies
Spatial variability in environmental endowments	
Farm location and proximity to roads	
Farm-lot level	
Farm size and shape	Size and composition of household
Local environmental endowment & topography	Access to capital
Land-use technology available	Family short- and long-term goals
Proximity to roads and type of access	

- Long-lasting effects of regional structural factors, but differential distribution of effects

- Level specific processes, but cumulative effects of local decisions

- Limited effects of region-wide policies