

# Opportunities for Agroecological Adoption in Oaxaca's Central Valleys

*A participatory modeling and leverage points approach*

## Background

An agroecological transition of our food systems is key to promoting sustainable livelihoods, protecting agrobiodiversity, and fostering socio-ecological resilience amidst a changing climate. However, agroecological adoption remains limited. Here we examined the conditions that enable and constrain agroecological adoption in the Central Valleys of Oaxaca, where monoculture production and farm abandonment threaten farming livelihoods.

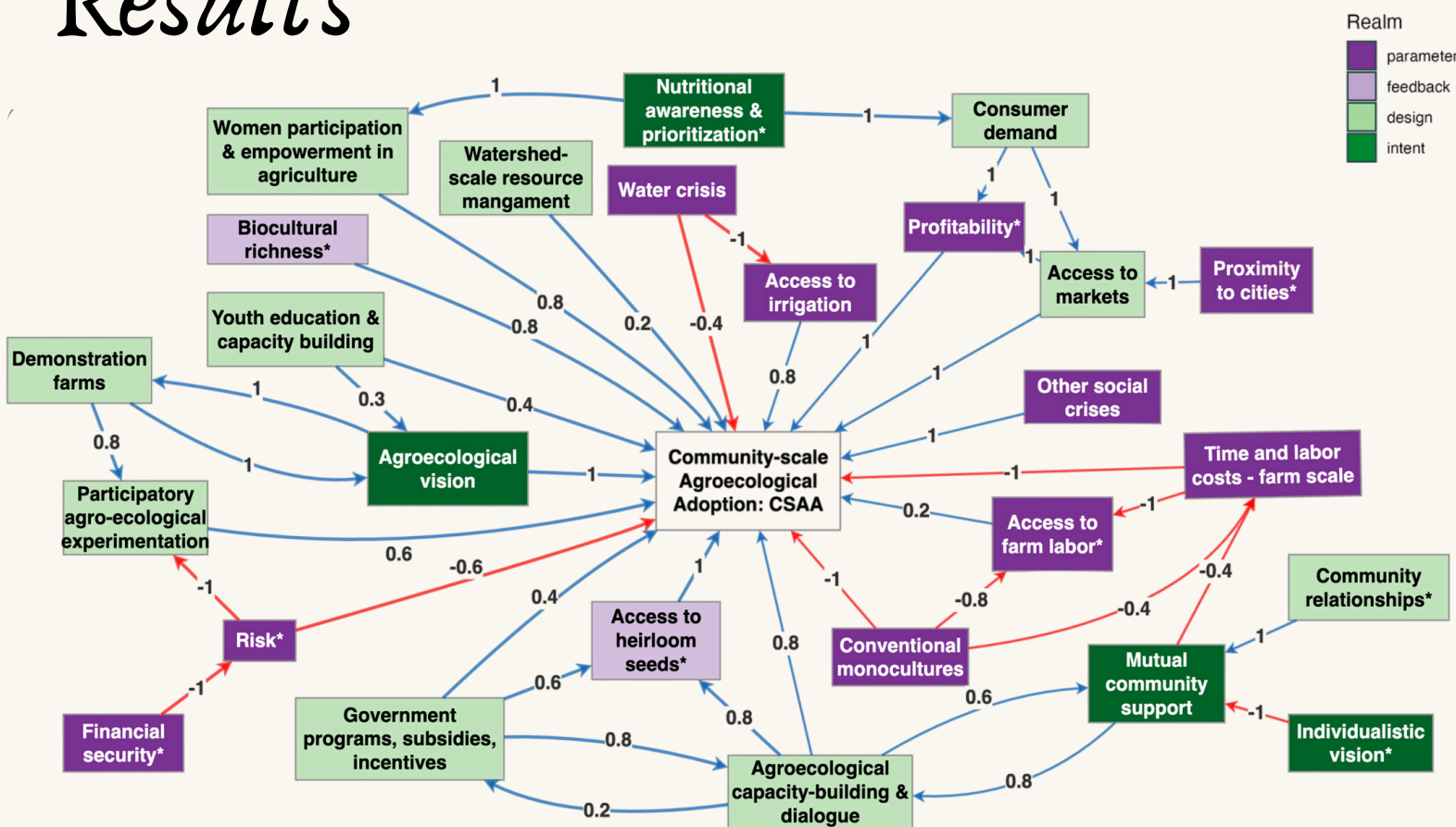


## Methods

- Conducted semi-structured interviews and fuzzy cognitive modeling with 10 local agroecological facilitators.
- Integrated individual models and collaboratively revised in a focus group discussion to develop a consensus model of community-scale agroecological adoption.
- Performed scenario analyses to identify place-based leverage points.



## Results



The model revealed complex interactions among diverse system components that span from relatively shallow parameters (e.g., costs) to the deeper levels of system design and intent (e.g., community support, nutritional awareness). Scenario analyses highlight the importance of addressing immediate challenges, such as costs and risks, while fostering long-term enabling conditions, such as women and youth engagement and economic viability.

## Conclusions

Policymakers should prioritize integrated programs that activate leverage points across multiple levels. Promising efforts are underway, including a PhD program in agroecology, government-led agroecological capacity building programs, and transdisciplinary initiatives such as the CoLaboratory Kitchen. Our study showcases the value and broad utility of fuzzy cognitive models as a tool to identify place-based leverage for sustainability.

**We thank the participants for sharing their time and insight!**



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