

# Barriers and Levers for Inclusive Smallholder Agribusiness: Evidence from Cambodia's Organic Rice Sector

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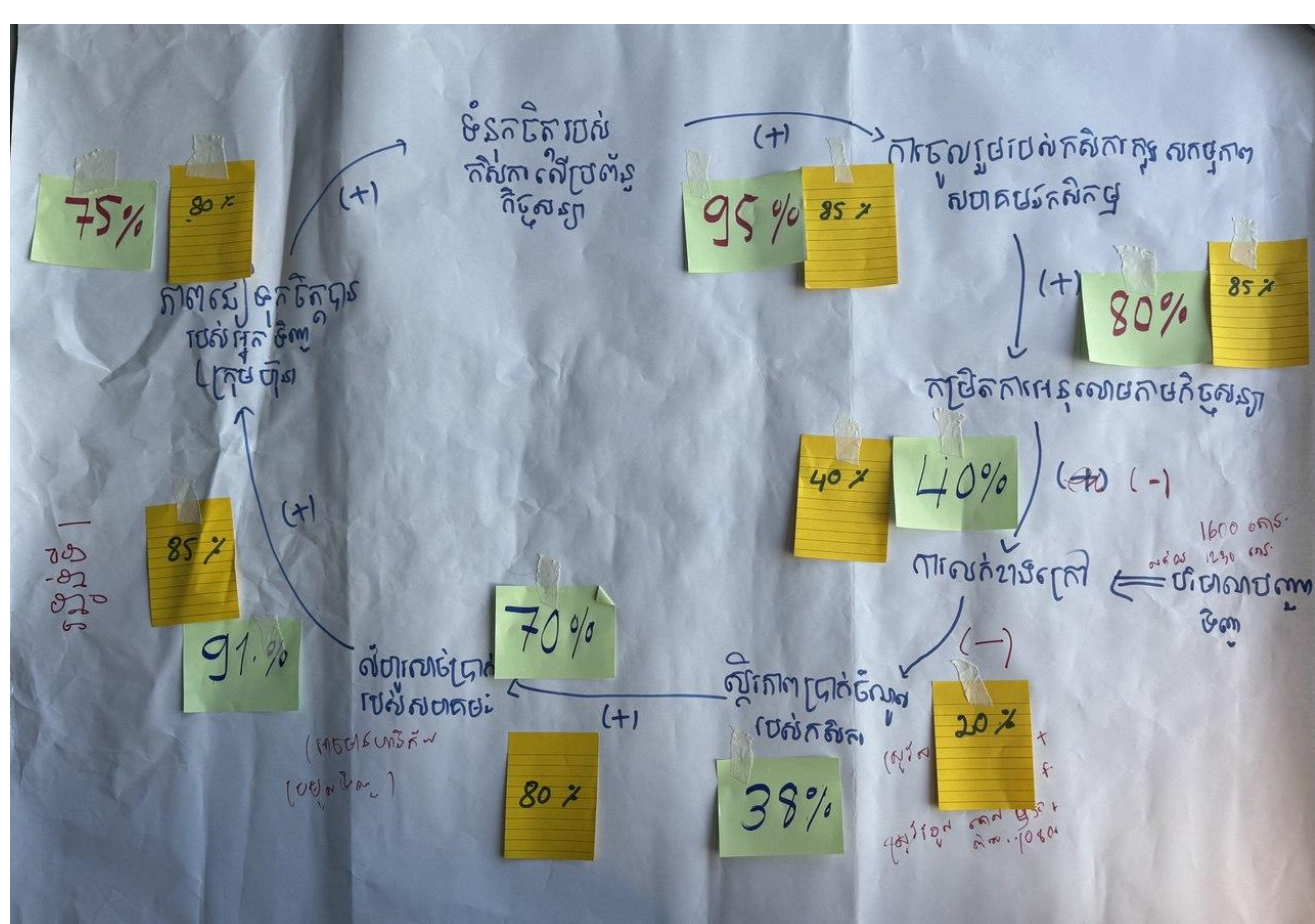
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## BACKGROUND

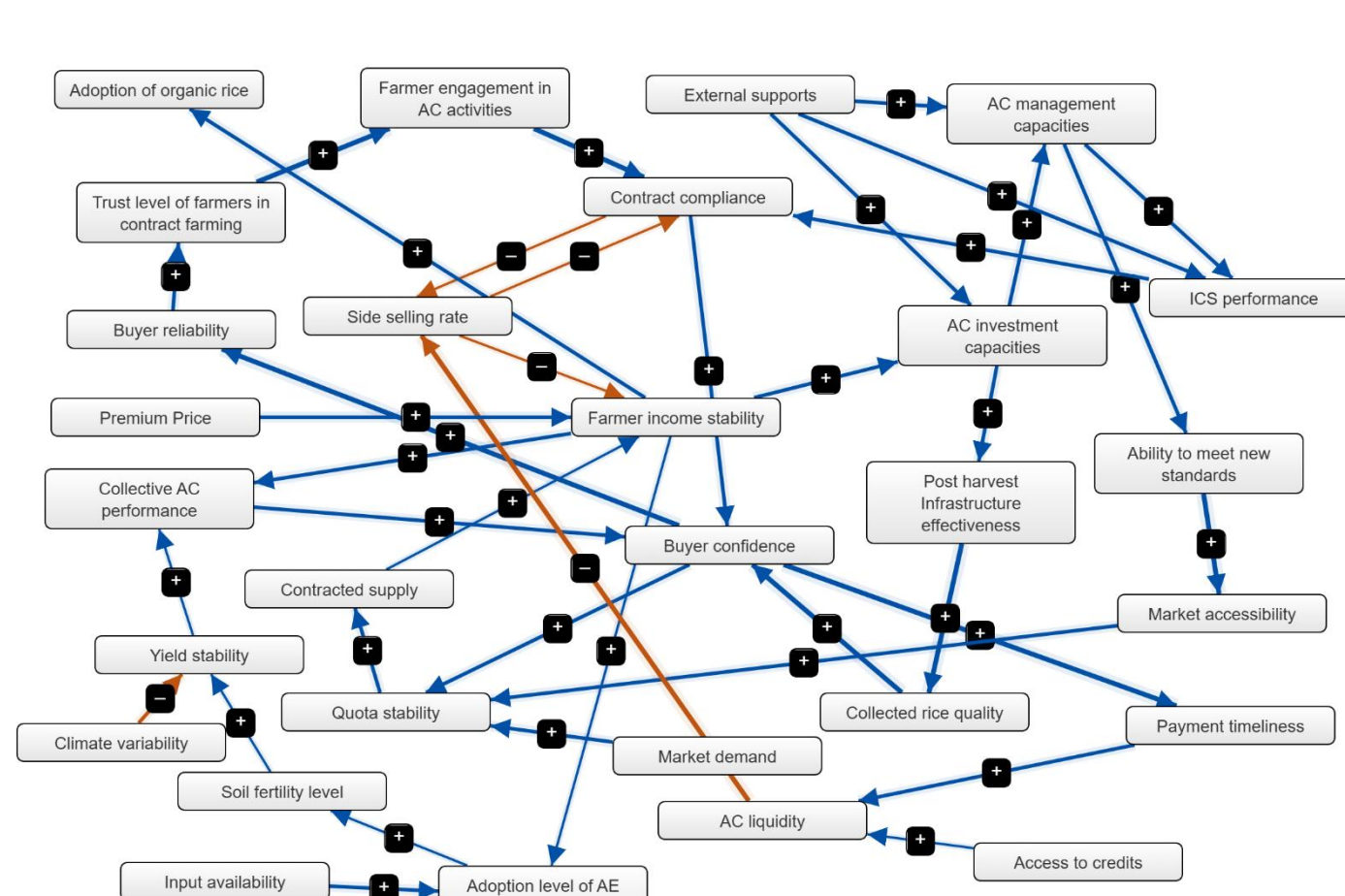
- Agroecology is increasingly promoted to address climate change, biodiversity loss, and social inequalities in food systems.
- Organic agriculture often serves as a market-based entry point to agroecological transition.
- In Cambodia, organic rice has expanded through cooperative-led certification and export markets, yet governance, infrastructure, finance, and market coordination challenges constrain inclusive outcomes.
- This study applies a systems-thinking approach to identify key feedbacks, barriers, and leverage points shaping agroecological transition pathways.

## METHODS AND MATERIALS

- Mixed-methods approach to analyse system barriers and levers in organic rice system in Preah Vihear Province, Cambodia
- Farmer surveys (n = 282) and semi-structured interviews
- Participatory systems modelling using Causal Loop Diagrams (CLD) and Fuzzy Cognitive Mapping (FCM)
- Identification of key feedbacks, leverage points, and transition pathways



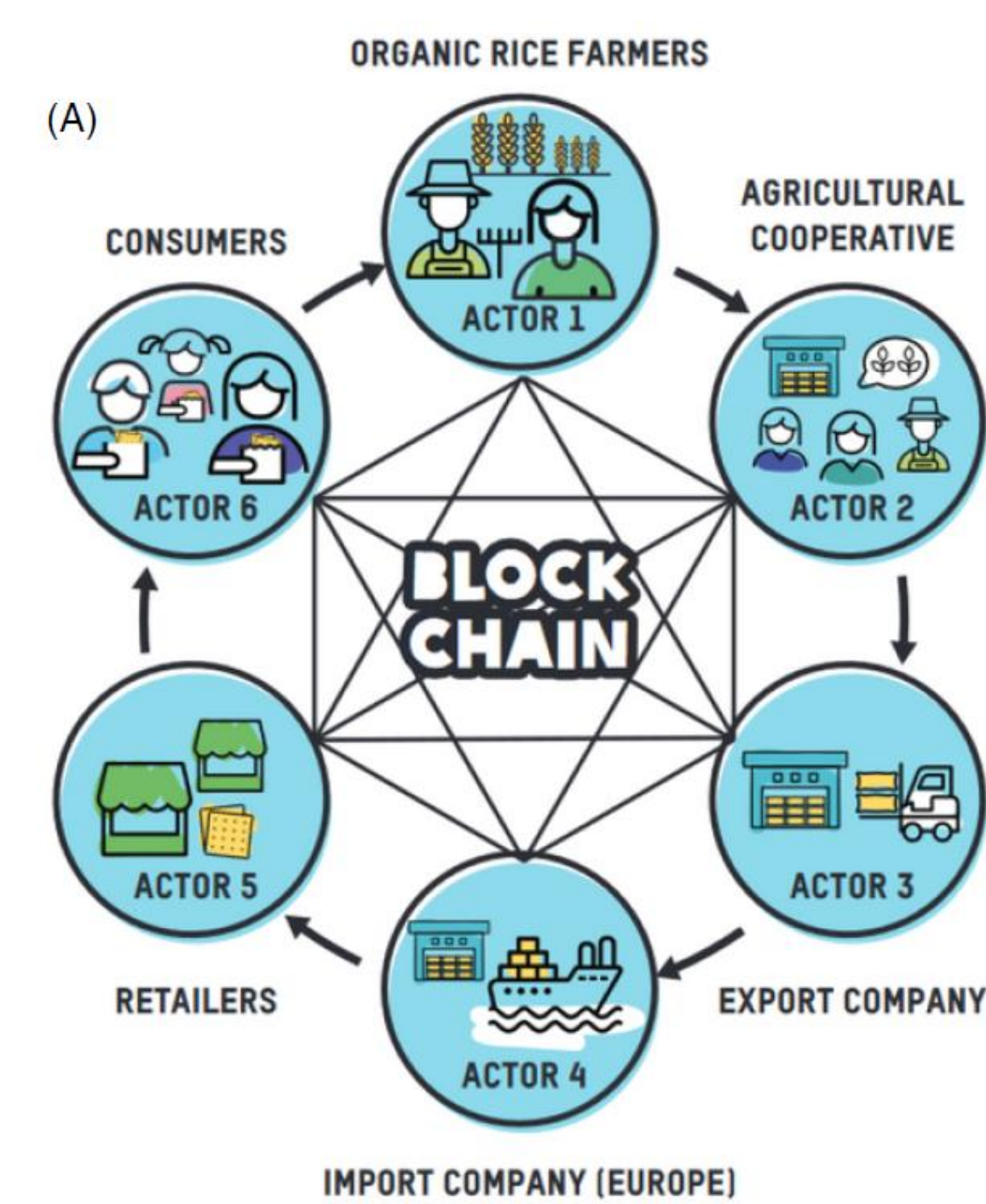
Causal Loop Diagram (CLD)



Fuzzy Cognitive Map (FCM)

## PRELIMINARY RESULTS

### Organic Rice Farming in the Province



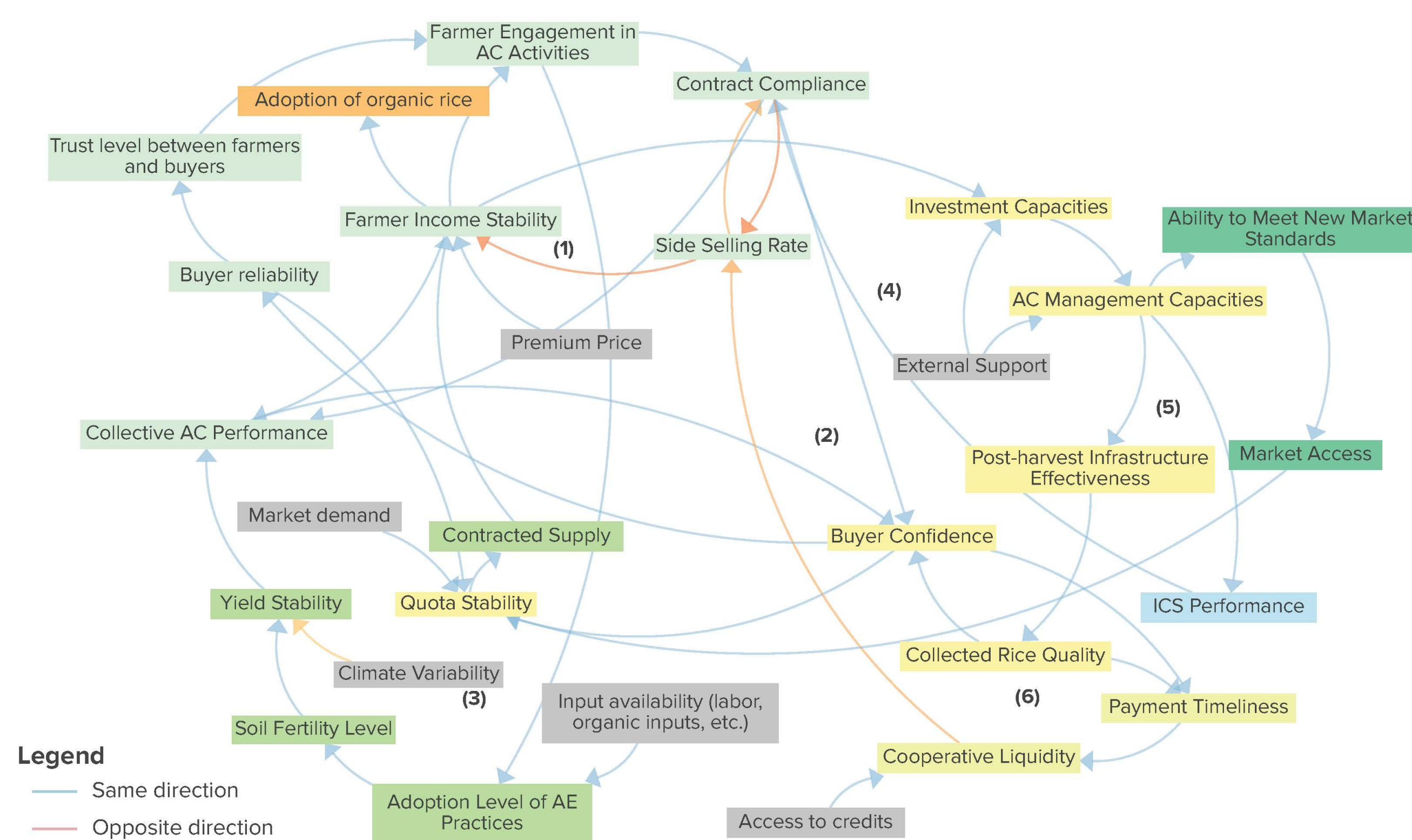
(A) The BLOCRISE involves actors in the organic rice value chain and (B) Evolution of organic rice contract farming from 2015 to 2019

### Major Constraints Reported by Farmers

- Production risks and market instability dominate farmer concerns (n=282).*
- Climate sensitivity (56%) and pest/weed pressure (54%)
  - Weak organic market infrastructure (43%)
  - Access to appropriate machinery (23%) and finding labor (22%)
  - Limited access to finance (14%)

## PRELIMINARY RESULTS (CONTD.)

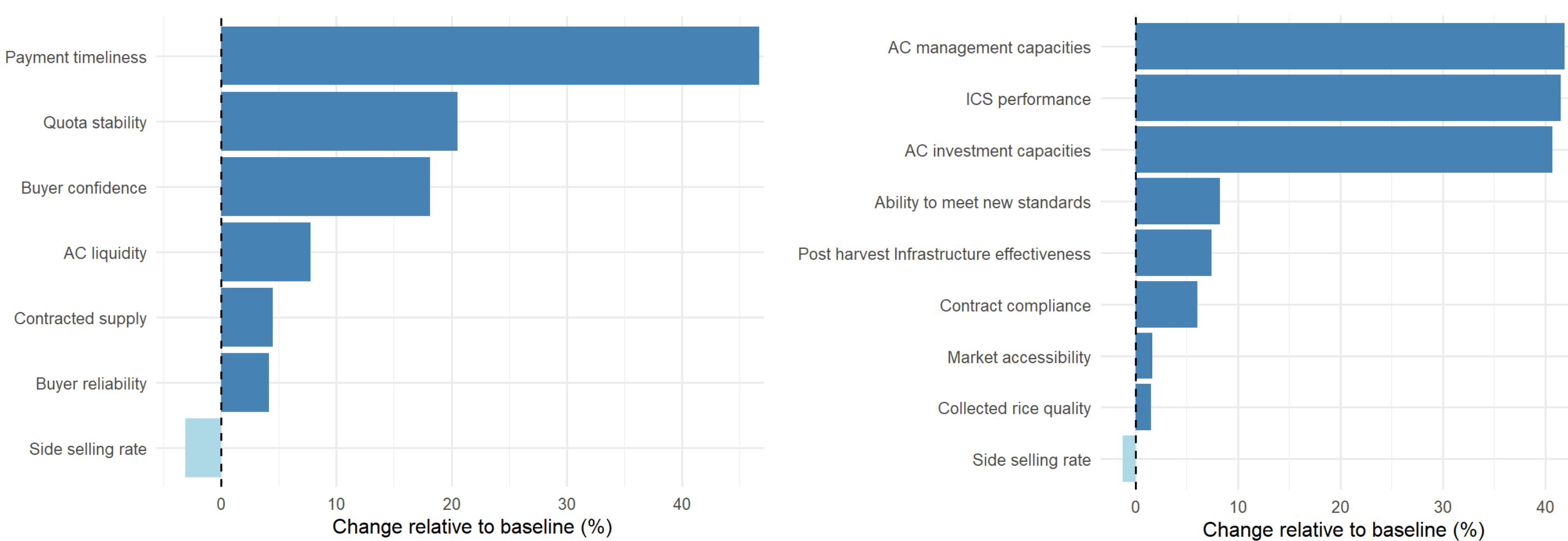
- **Systemic Barriers:** Instability is driven by reinforcing feedbacks between trust, liquidity, and compliance.



### Key Drivers Identified by FCMs

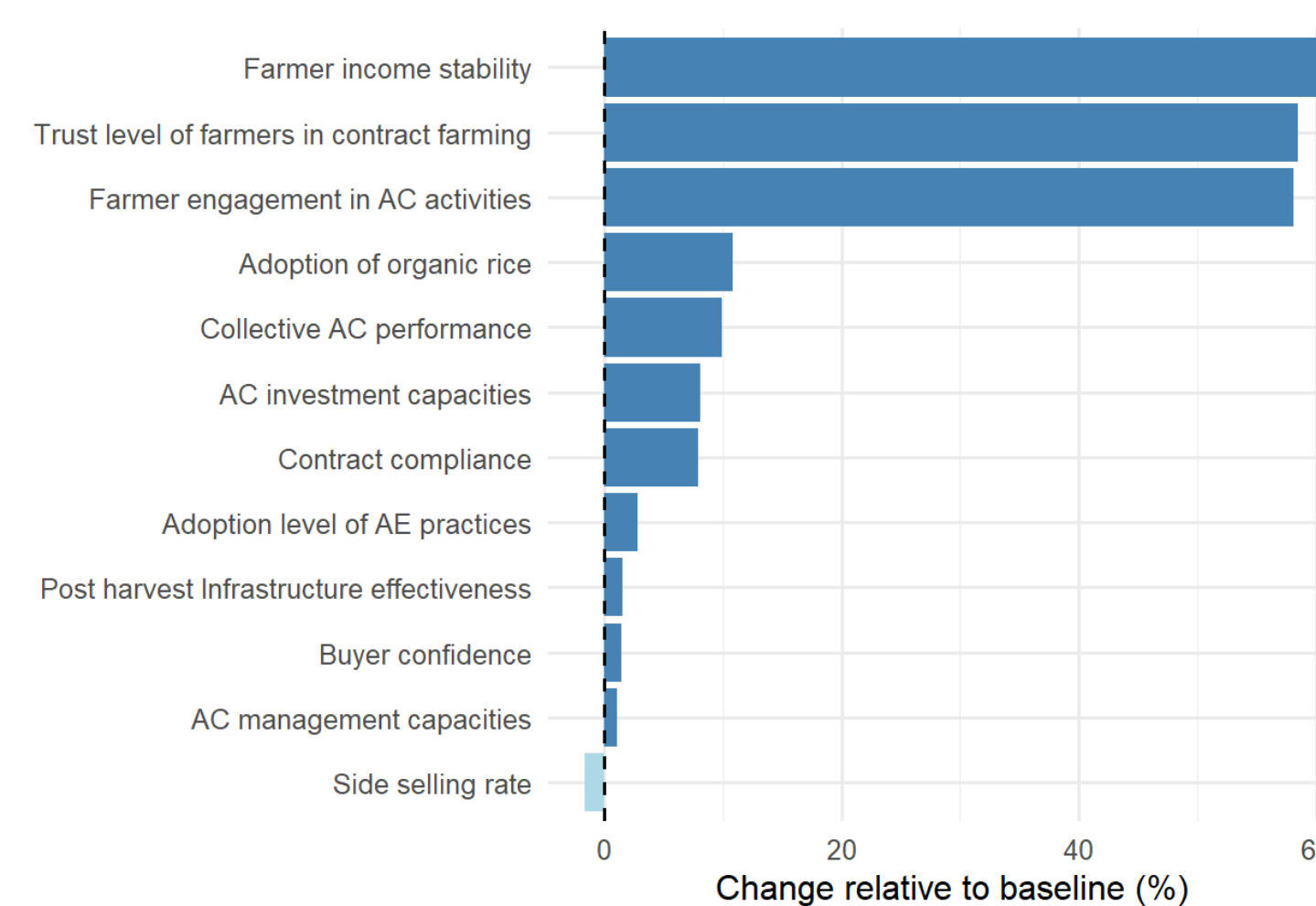
- Participatory FCM builds on CLDs to quantify system interactions
- Network of 29 components and 39 links reveals concentrated influence
- Buyer confidence, income stability, and contract compliance are the most central drivers
- Cooperative management, liquidity, and ICS condition system performance
- Biophysical and technical factors influence outcomes indirectly

### Scenario Analysis: Leverage Points for the Transition



#1: Market stabilization (buyer confidence, payment reliability, quotas)

#2: Cooperative capacity (management, ICS, investment)



#3: Farmer income stabilization (income security, trust, engagement)

- *The transition is not driven by a single intervention, but by complementary feedbacks linking market reliability, cooperative capacity, and livelihood improvement.*

## KEY REFERENCES

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