



# Empowering rural farm women in agricultural development: A decision analysis approach with a focus on gender

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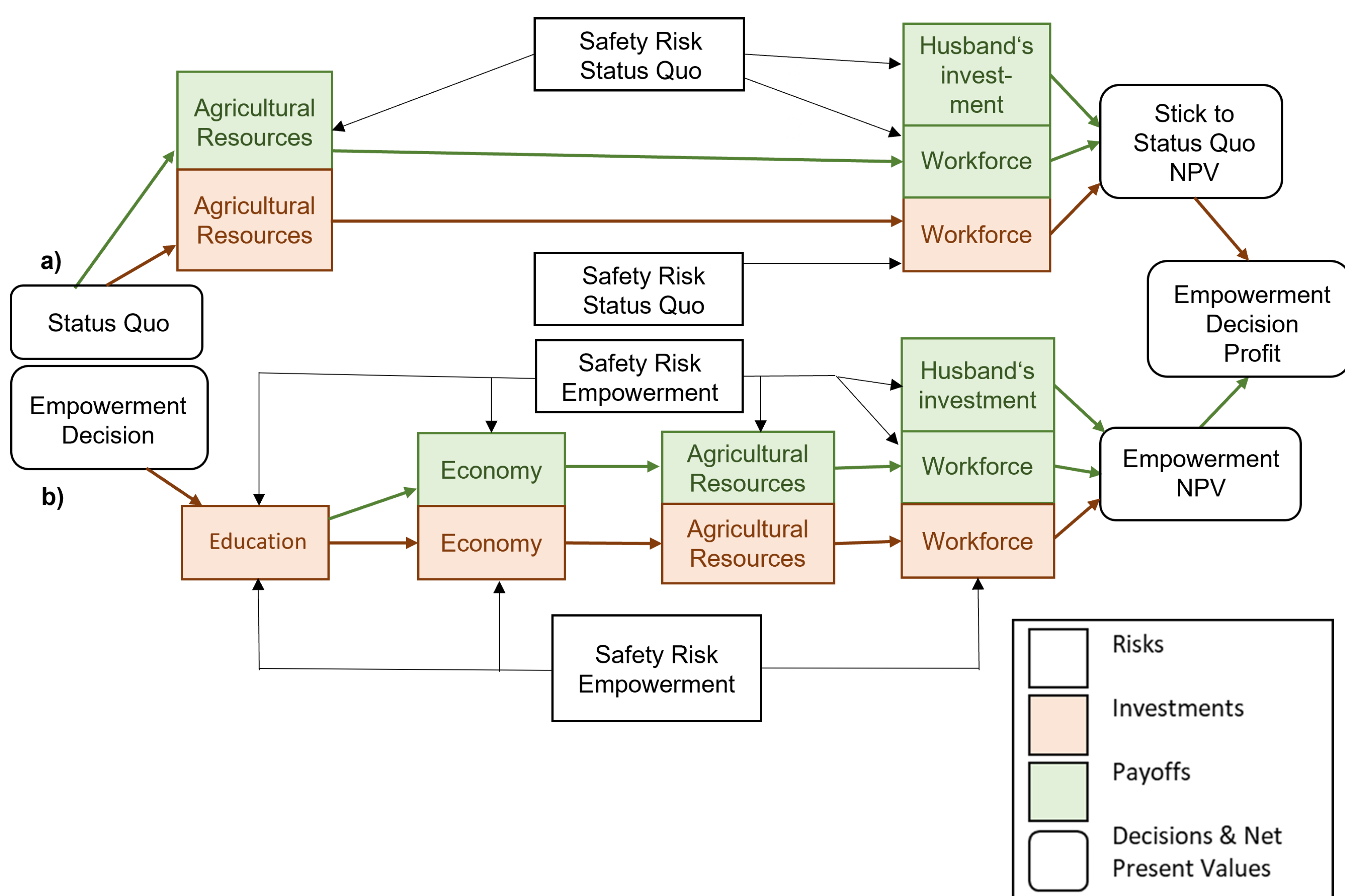
## Capturing gender in development-oriented agricultural modeling

- Rural farm women in low- and middle-income countries are the main subject of rural agriculture development interventions for women's empowerment
- We study factors influencing their empowerment in agricultural development to support researchers in capturing gender in development-oriented agricultural modeling efforts

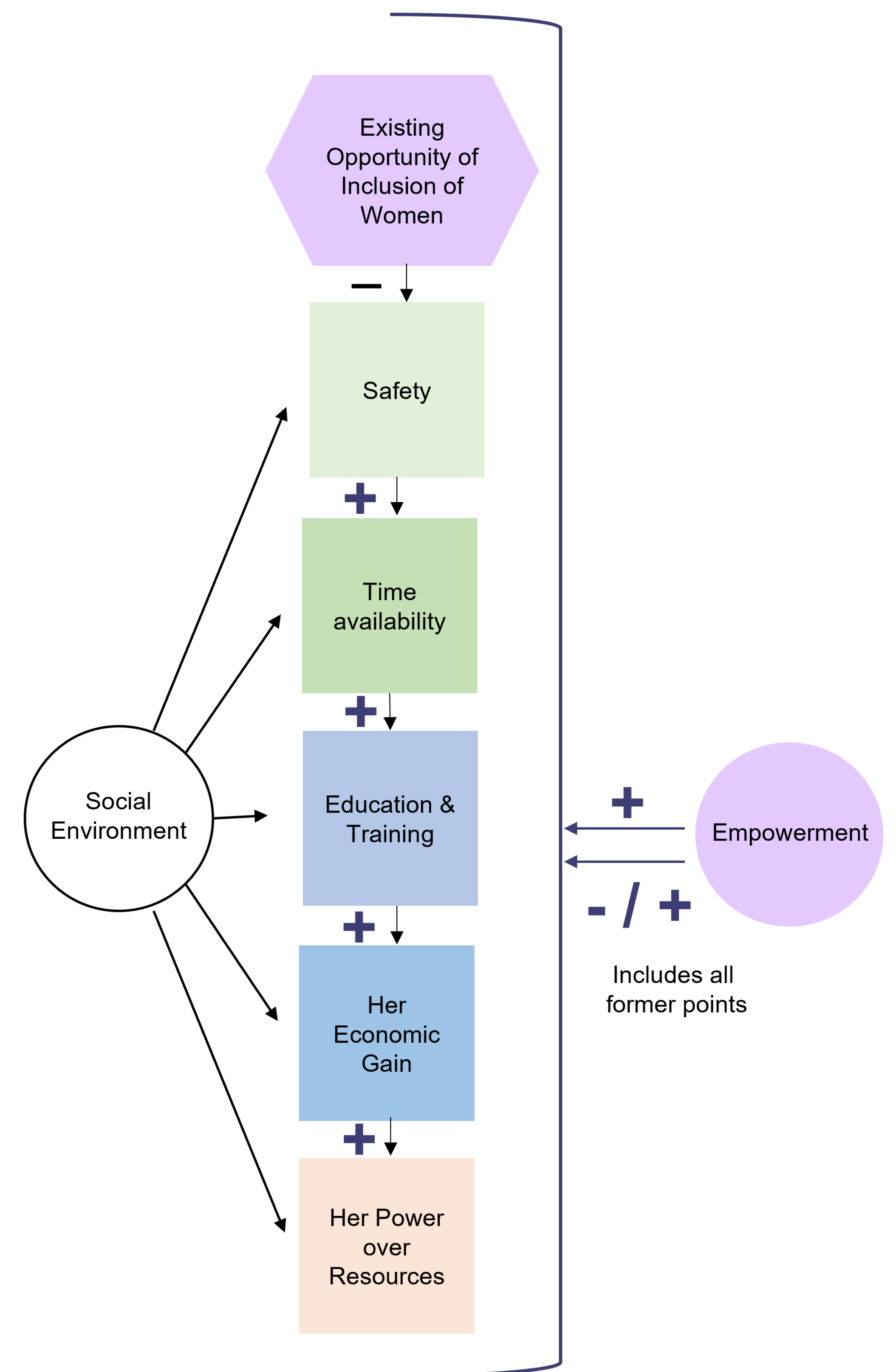
## Literature-derived decision model

We developed a model to overview the process:

- We began with a literature search
  - based on literature findings, we formulated a conceptual model
  - we created a mathematical model from the conceptual model
  - we generated uncertainty distributions for use in the model
  - we ran the model as a Monte Carlo simulation



Decision Analysis Impact Pathway for capturing gender in development-oriented agricultural modeling. **a)** An unchanged status quo situation where women are restricted in access and power over agricultural resources and monetary restrictions leads to a lower ability to work due to lower health. **b)** Women's empowerment within their social environments can be reached through gains in the areas where they are disadvantaged.



Six primary factors of empowerment

## Primary factors in the empowerment status of women

- We found that the empowerment status of women differs between countries and regionally with six primary factors:
  1. *Safety*,
  2. *Time availability*,
  3. *Education & Training*,
  4. *Her economic gain*, and
  5. *Her power over resources*
  6. *Social environment* influences all five points
- Safety is a crucial constraint for rural women since they can face danger within families and communities
- Based on research on prior empowerment interventions and the system of empowerment, we show that increasing gains for women and supporting empowerment is superior to the status quo if violence against women does not increase

## Conclusions

- Holistic, system-oriented thinking and trans- and interdisciplinary research can reduce bias and include women as decision-makers over their empowerment
- Our research can assist actionable models and web apps that can potentially empower rural women in different areas
- Our theoretical model is usable as a web app (<https://femiaculture.shinyapps.io/femiaculture/>)

