



RESEARCH  
PROGRAM ON  
Grain Legumes



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## Participatory research and plant breeding in Honduras: Improving livelihoods, transforming gender relations

**Foundation for Participatory Research with Honduran Farmers (FIPAH):** Agronomists: Marvin Gomez, Jose Jimenez, Omar Gallardo, Fredy Sierra, Carlos Avila, Merida Barahona, Paola Orellana

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15-Feb-16

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to combat poverty, hunger, malnutrition and  
environmental degradation.*

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institutes and organizations,  
governments, and farmers  
worldwide

# Outline

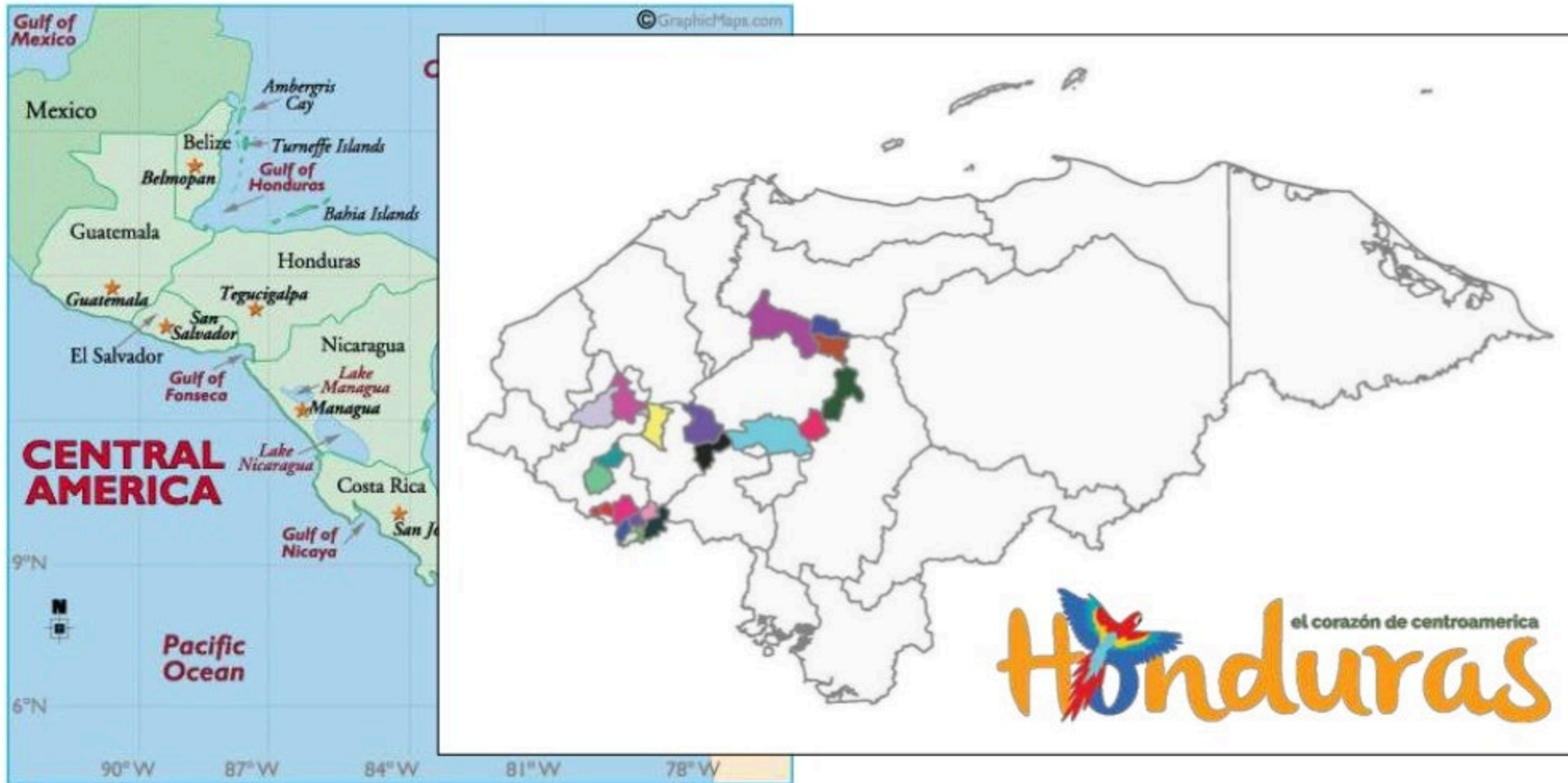
- Participatory project overview and outcomes
- Evaluating impacts
- Livelihood impacts
- Impact on gender relations
- Lessons learned

# Local Agricultural Research Committees (CIALs)



- Supported by CIAT (1993-95), IDRC (1995-2000), USC Canada (2000-present)
- Foundation for Participatory Research with Honduran Farmers (FIPAH) supports most CIALs in Honduras
- Partnership between CIALs, NGOs and breeders at Pan American Agricultural School, (Zamorano)


# CIAL/farmer group locations, Honduras



**109** CIALs in **139** communities, **15** municipalities, **5** departments in western and central Honduras

Scale up to 191 communities, 173 farmer groups by 2020

# The problem we address



Severe food insecurity in  
Honduran hillsides

# Teaching formal research methods to farmers



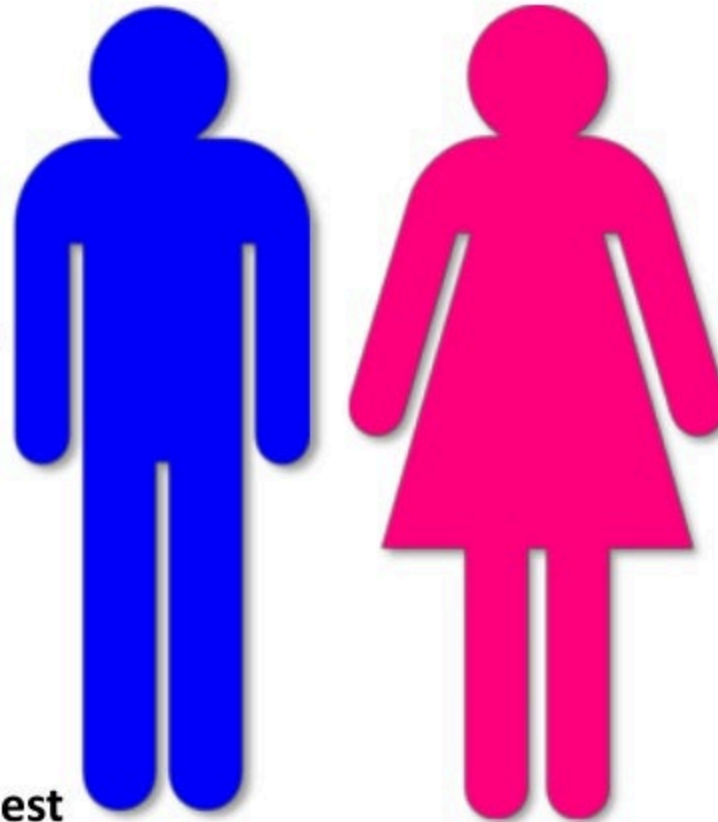
- Through CIALs farmers learn how to conduct simple experiments in maize and beans
- Poor performance of formal sector varieties
- NGOs-Zamorano look towards participatory plant breeding as a solution

# Identifying farmers' ideal bean traits by gender, Yorito, Honduras, 2000



# Identifying farmers' ideal bean traits by gender, Yorito, Honduras, 2000

- non-trailing bush beans, 35-40 cm in height
- yields of 25-40 pods/plant
- little disease
- even ripening
- thick stem
- rain- and drought-resistant
- thickish pod to prevent sprouting
- 7-8 beans/pod
- longish, thick, heavy bean
- dark reddish colour, shiny
- firm bean skin to prevent pest infestation in storage



- early maturing varieties
- produces a thick soup in the cooking process and doesn't need lard
- 'yields' or expands in the pot
- soft, good tasting bean
- cooks quickly without much fire
- easy to shell



# Introducing participatory plant breeding (PPB) into upland communities, 2000-present



- First PPB variety generated from popular landrace with early maturity, selected by CIALs across 2 municipalities, central Honduras
- Landrace crossed with breeder materials at Zamorano and returned to CIALs
- 53 members (23 w, 30 m) from 4 CIALs selected (F3) lines from 120 families
- Originally concentrated in one plot but decentralized at members' request to community plots to incorporate contextual differences, especially elevation

# Learning to select in early generations

- Learning process approach: each of the partners (breeder, NGO, CIAs) learned how to engage in PPB
- CIAs learned to select in segregating populations, ignoring seed colour in early generations
- Members picked up language of science, basic genetics
- Labour-intensive at outset



# For women, in particular, involvement in CIALs and PPB has meant acquiring new agricultural knowledge



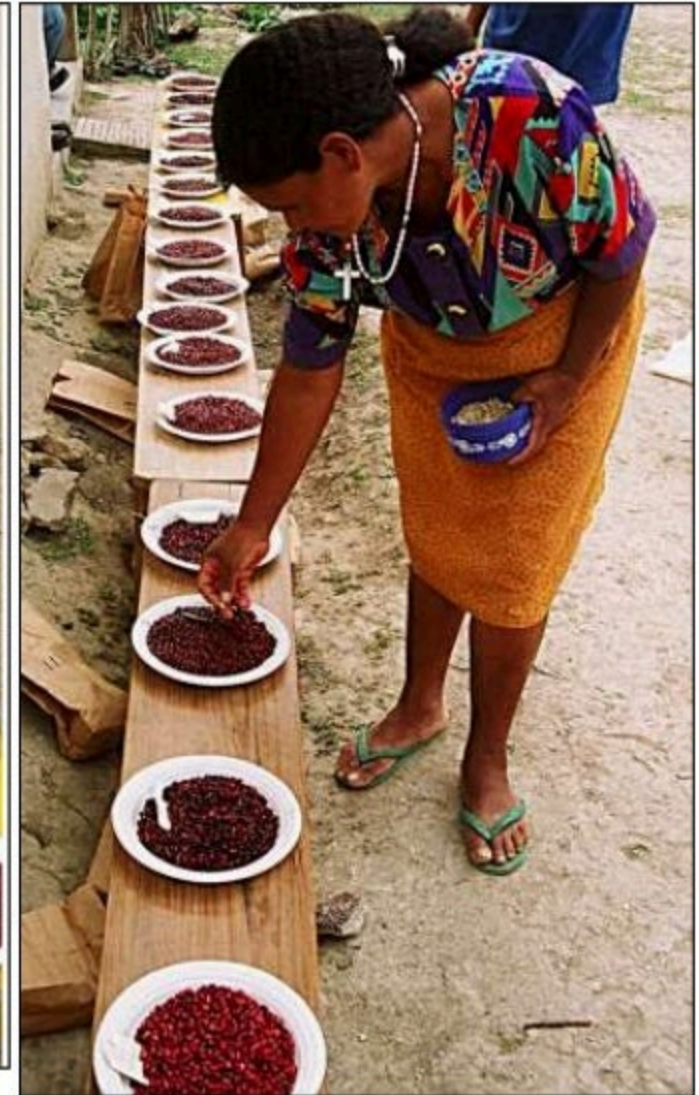
- Early gender-specific CIALs became mixed CIALs at members' request



- Research was new to all CIAL members encouraging shared learning between men and women
- Women took seed selection skills out of kitchen into public space

# Farmers and scientists select different materials

- Materials selected on-station by breeder, not selected by farmers, reflecting different conditions and cultural criteria
- First PPB bean, 'Macuzalito', selected by farmers for best overall average traits
- Selected by both men and women



# Bean release at municipal level



- Macuzalito released in 2004 at the municipal level, four years after process began
- Honduran CIALs/NGOs/Zamorano have generated **23** new bean varieties, most using advanced lines
- Most released at municipal level; one released at the national level in 2014
- Participatory mass evaluation showed that 6 PPB CIAL varieties outperformed formal sector check on all but one criterion – independent of altitude and zone.

# Increasing seed supply

- Honduran seed laws currently prevent CIALs selling seed nationally
- Individual seed growers use foundation seed to increase volume of “seed” for sale in local markets
- Profits from local “seed” sales increasingly help to drive long term PPB research
- Credit through the Association of CIALs allows farmers to buy fresh seed and maintain high quality bean grain sales



# Evaluating Impacts

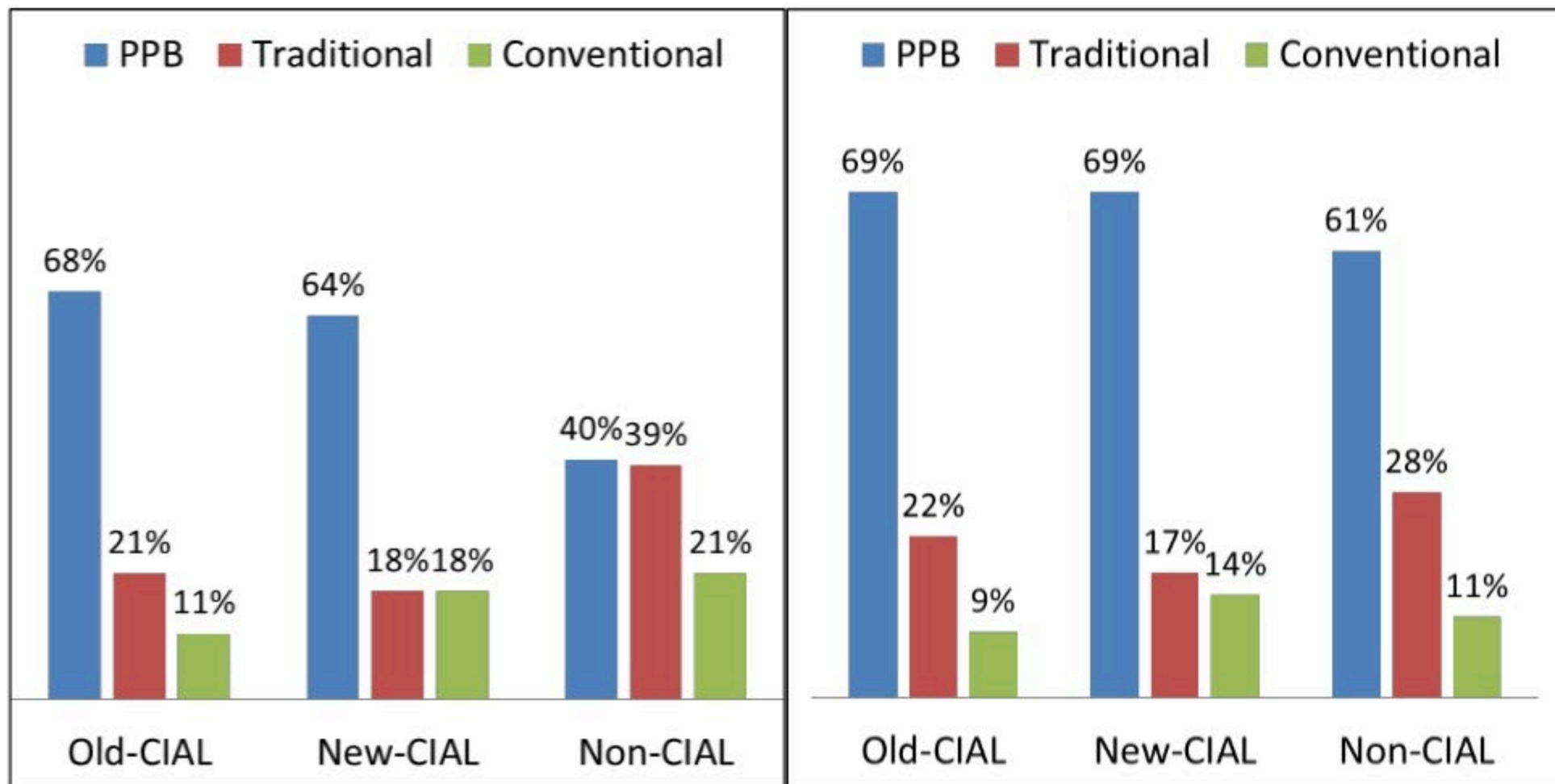
- 2003 – Indicator Identification
  - 7 focus groups, 40 before and after interviews
- 2004 – Survey
  - n=300
- 2005 – Participatory Analysis of Survey Results
  - 10 focus groups
- 2006 – Life/Project Histories
  - 31 life histories
- 2011 – Survey of Male Partners
  - 20 men interviewed
- 2013 – Cost/Benefit Analysis of PPB



# Bean Category Adoption Rates by Season across 3 Municipalities in Honduras, 2013

- Spring 2012 (n=127)

- Fall 2012 (n=140)





# Livelihood Impacts

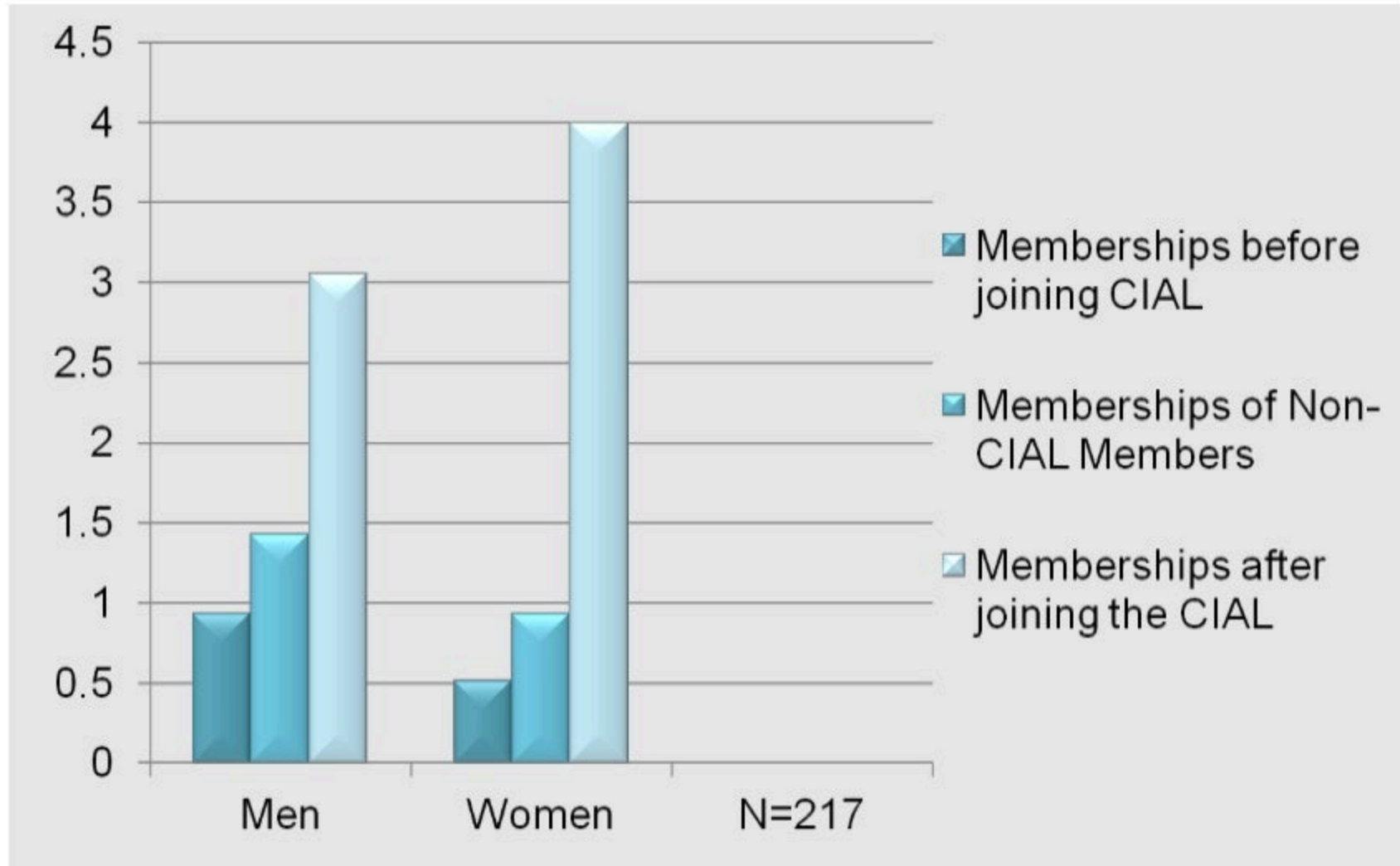
- More poultry
- More pigs
- More pack animals
- More household savings
- Increased household maize yields
- Increased household bean yields
- Increased food security
- Increased links with organizations

## Poorest farmers, including women, have been empowered through research



- Women make up 42% of membership in established CIALs supported by FIPAH. Involved in PPB research, validation of varieties, etc.

# Women gain social networks, increase social capital



# Women acquire confidence to *exercise* their 'liberty'



- Participating in organizations
- Occupying positions in the community
- Taking on salaried work
- Administering family finances
- Visiting friends and neighbours
- Working with spouse in the fields

# Women make more decisions

- What crops and where to sow
- Sale of agricultural products
- Joining local organizations
- Managing family finances



# Husbands take pride in wives' skills



- Husbands expressed pride in their wives' new skills, most likely if husband also a CIAL member
- Woman had to be CIAL member, there was no change in decision-making if only husbands were members. Empowerment earned, not bestowed
- Joint household benefits important for men's support

# CIALs help to promote community development



- Work of the CIALs helps to foster stronger, more prosperous, more open communities
- CIAL members promote local development through community leadership roles

# Lessons Learned

- Involving farmers in participatory research and PPB is a long term undertaking, requiring stable funding for different partners
- Research-focused NGOs effectively mediate between breeders and farmers
- PPB varieties have high adoption rates
- Learning to do research gave poor women and men self-confidence
- Self-confidence allowed women to use their liberty effectively and empowered them to make important h/h decisions





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# Thank You

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