SHIFTING GENDER ROLES IN AGRICULTURE

Estimating the impact of a women-centric R&D program in India

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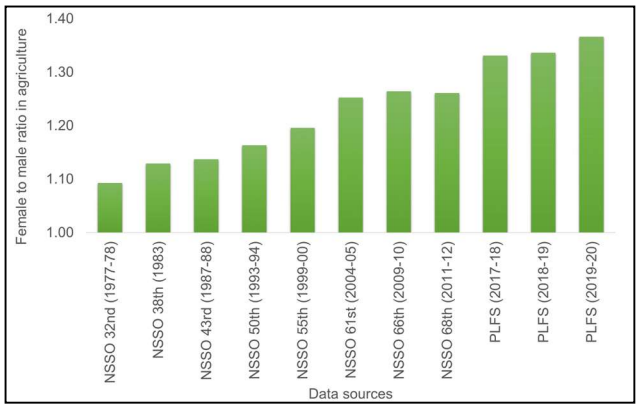
Introduction

- Indian agriculture is feminizing over time.



However,

- Women's involvement in decision-making is still limited (i.e., labour feminization rather than managerial feminization)
- Most agricultural R&D programs are oriented toward male farmers due to their decision-making powers.
- The impact assessment literature generally does not document the effects of interventions on women's welfare (*the research gap*)

- In the research project called "Cereal Systems Initiative for South Asia" (CSISA), maize hybrids and improved agronomic practices were introduced through women self-help groups (SHGs) in the Odisha State of eastern India.
- Objective of intervention: Increasing the income of female farmers and farm households.
- About 220 demonstration trials were established in farmers' fields in the Mayurbhanj District during 2016-2019.
- Field days and information dissemination activities were conducted through women's self-help groups (SHGs).

Research Questions

- Did the targeted intervention and the complementary extension activities affect women farmers' adoption decisions?
- Did the maize adoption through SHGs alter their empowerment status?

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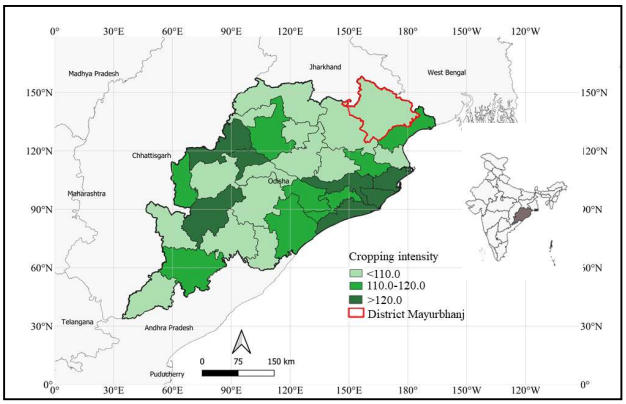
Study area: Mayurbhanj district has a low cropping intensity.



Methodology to establish causality:

- A quasi-experimental approach with instrumental variables to establish a causal relationship between maize adoption and women empowerment.
- Instrument: Presence and density of demonstration plots in the neighborhood & distance to the nearest demonstration plot

Results

Finding 1: The effect of proximity to demonstration plots on maize adoption (2017-2019) is significant.

Explanatory variable	Effect on	
	Maize adoption (dummy; probit)	Maize area (ha; Tobit)
Model 1: Presence of (at least one) demonstration plot in 1 km radius, dummy (IV1)	0.078* (0.044)	0.212*** (0.062)
Model 2: Distance to the nearest demonstration plot, km (log; IV2)	-0.042*** (0.014)	-0.077*** (0.023)

***: p< 0.01; *: p< 0.10

Finding 2: Maize adoption increases women's empowerment (Women's Empowerment in Agriculture Index, WEAI) status.

	Impact of maize adoption on	
	Empowerment (WEAI index; 0-1)	Empowerment (dummy; 0&1)
Model 1 (when IV1 was used)	0.398*** (0.049)	0.371* (0.211)
Model 2 (when IV1 was used)	0.387*** (0.042)	0.429*** (0.051)

***: p< 0.01; *: p< 0.10

Finding 3: The increased empowerment status is mainly derived from women's increased access to credit and group membership.

- No concrete evidence that maize adoption caused enhanced decision-making abilities and better control over household income for women participants of the program.

Take-home message: Transformative changes take time. Increased investment and research focus are needed to better understand and integrate gendered technology preferences into the broader sustainable intensification framework.

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