





**Let's agree to disagree**  
**Female bargaining power and adoption of  
modern wheat varieties in Ethiopia**

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# Background

- Dynamics in intra-household decision making often neglected in studies on adoption of agricultural innovation
- Households' farm management choices often result from negotiations between men and women farmers 
- Positive associations between female empowerment household dietary diversity, health, and child education   
- Better understanding of linkages between gender roles in household decision-making and related farm choices
- Enhance efficiency and effectiveness of extension systems and uptake rates of innovations in smallholder agriculture



# Data

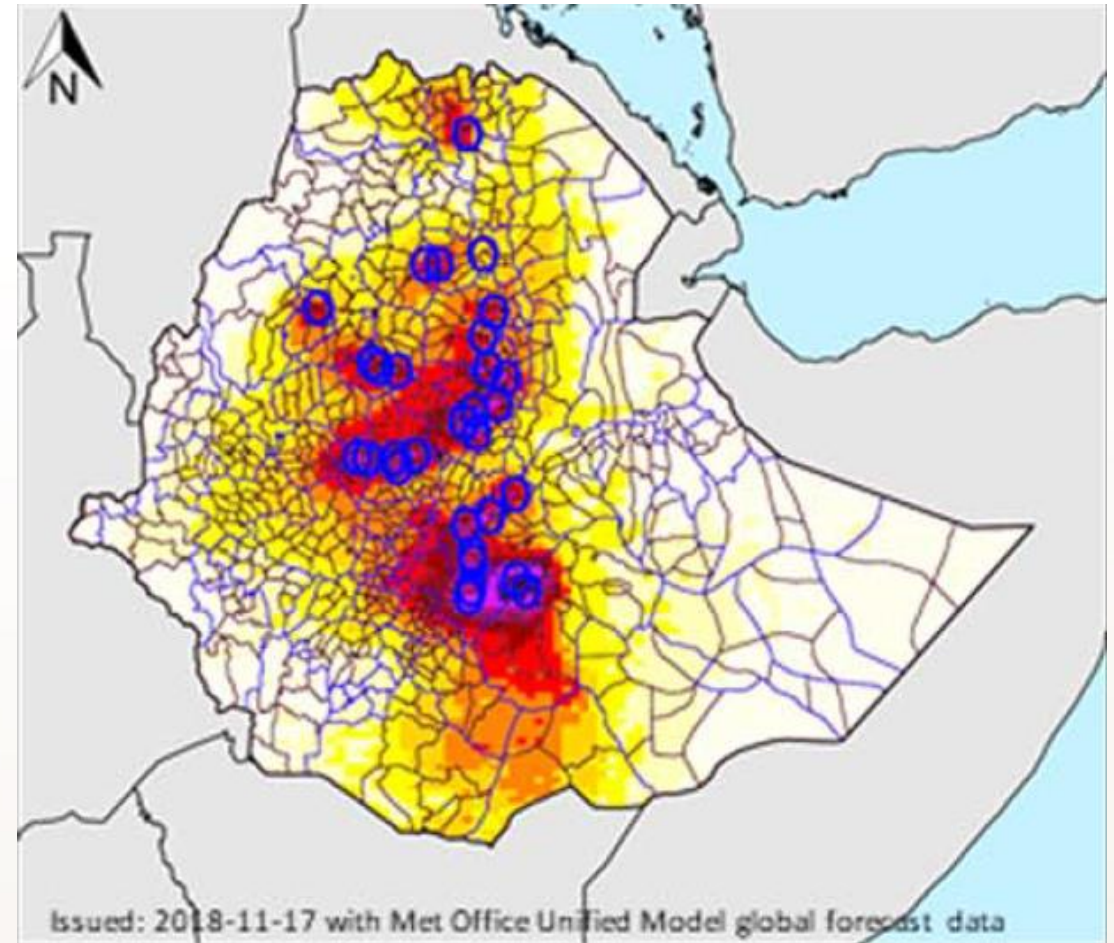
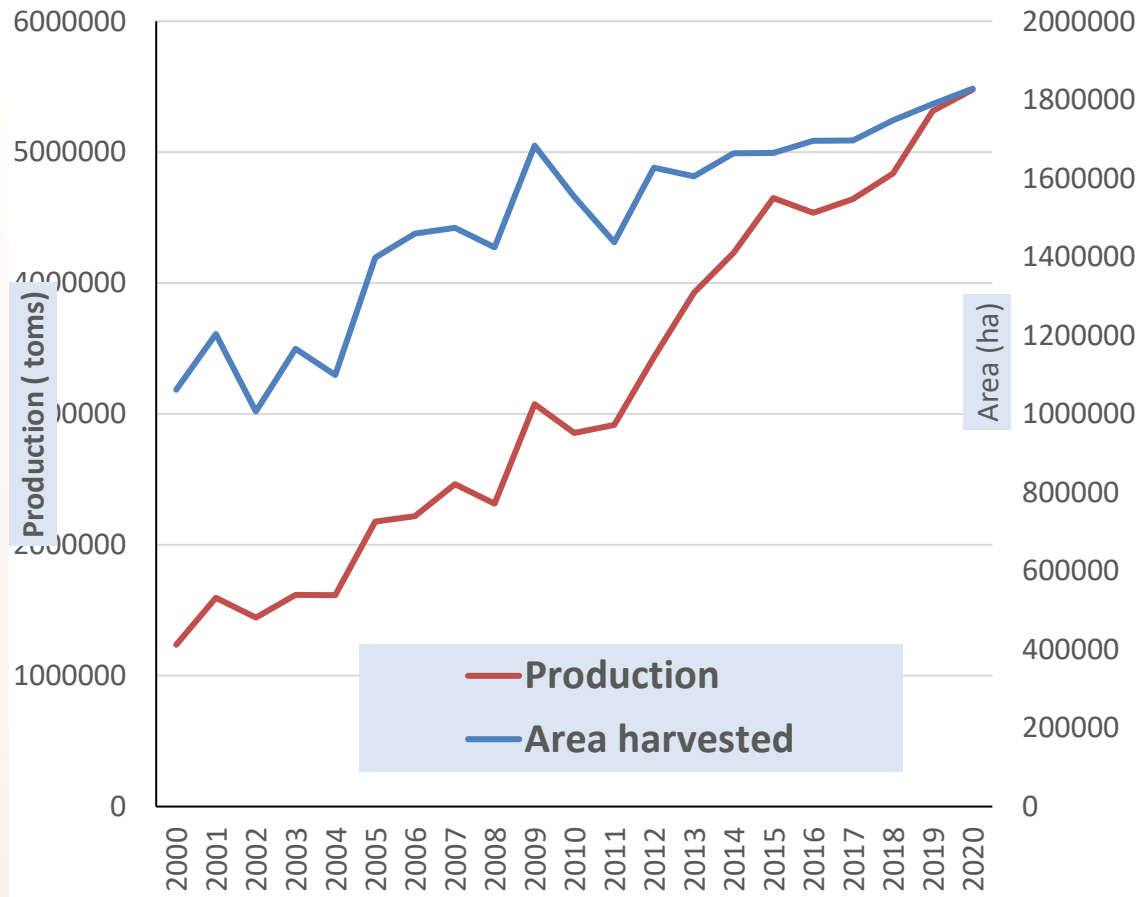


- Survey data from **1088** wheat producing **households in Ethiopia's** major wheat growing areas (Oromia, Amhara, SNNP)
- Conducted between July and September 2021
- Survey addressed **separately to female and male respondents from same household**

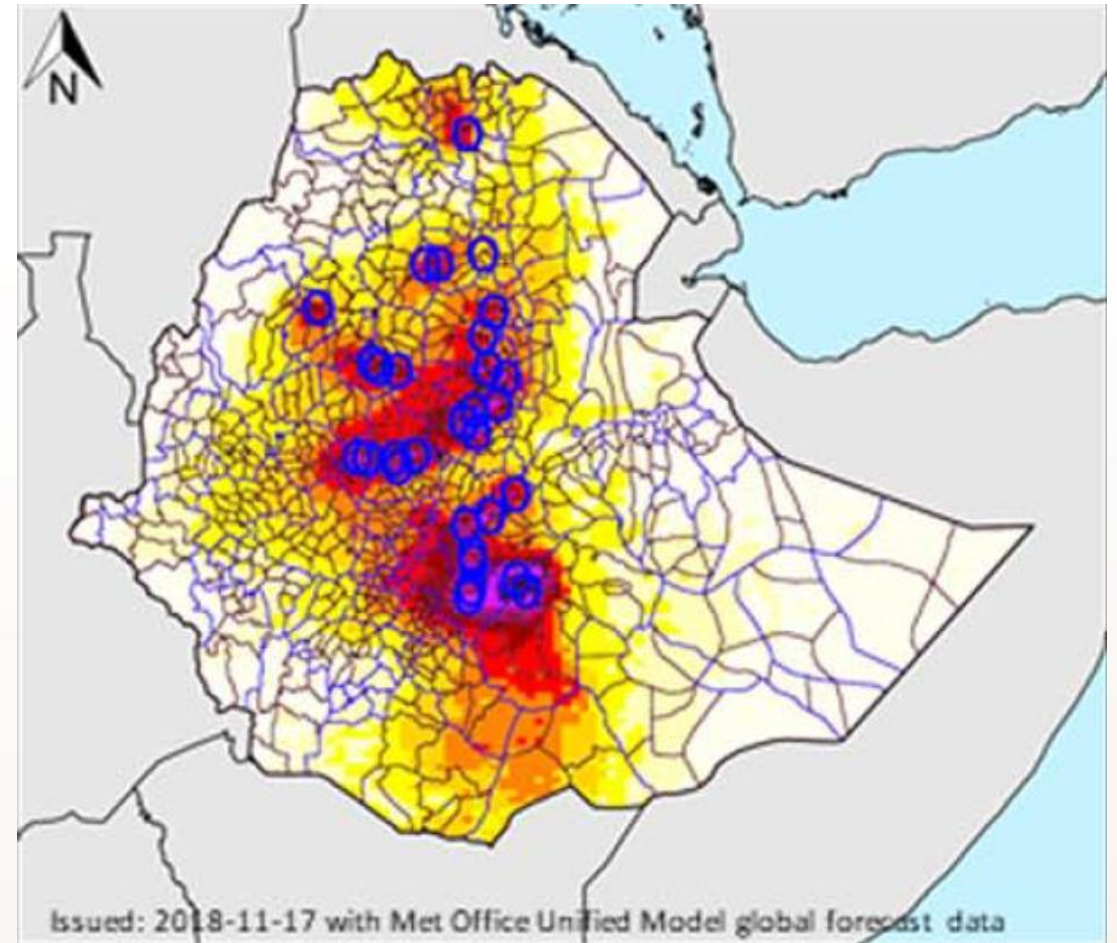
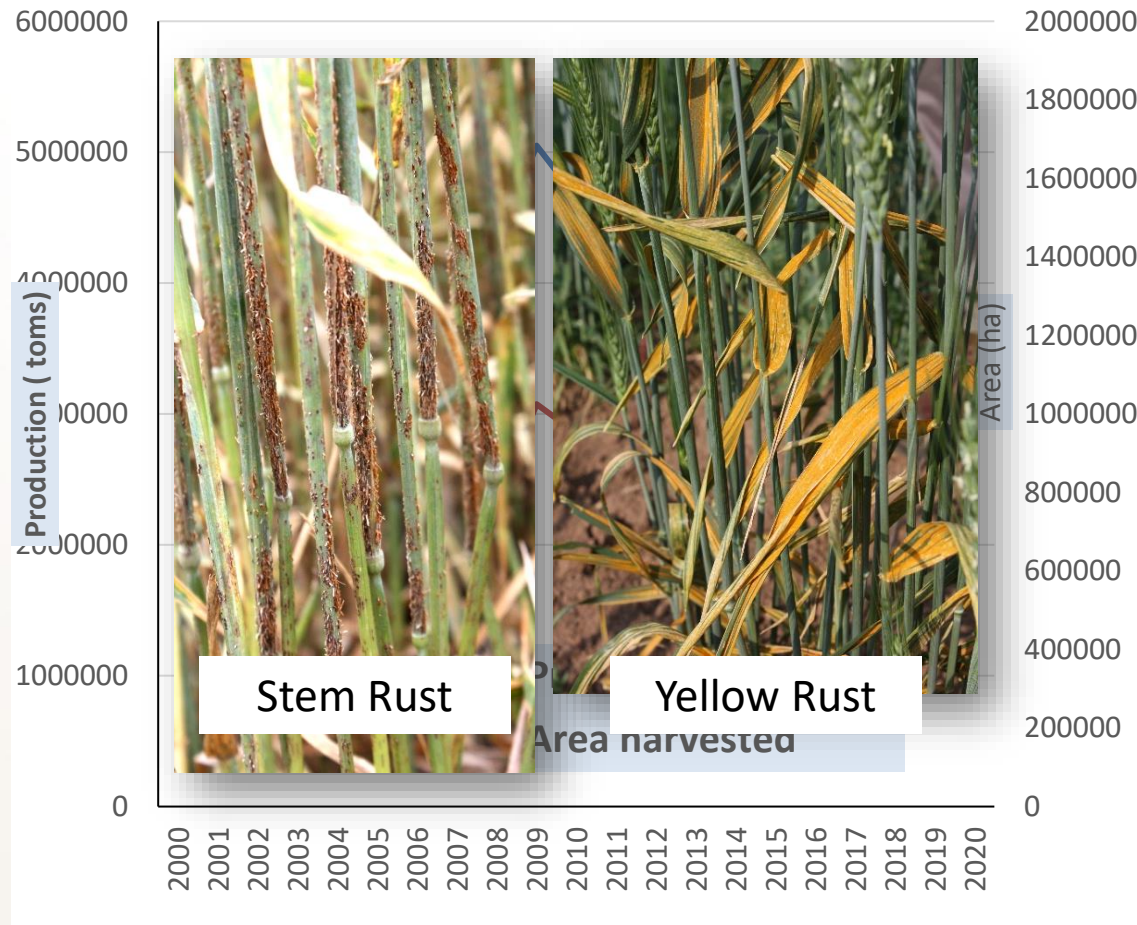




# Wheat production in Ethiopia

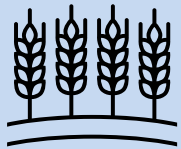


# Wheat production in Ethiopia



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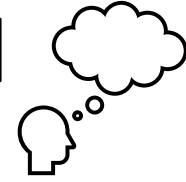
Does female influence in household crop farming decisions affect adoption of rust resistant wheat varieties?



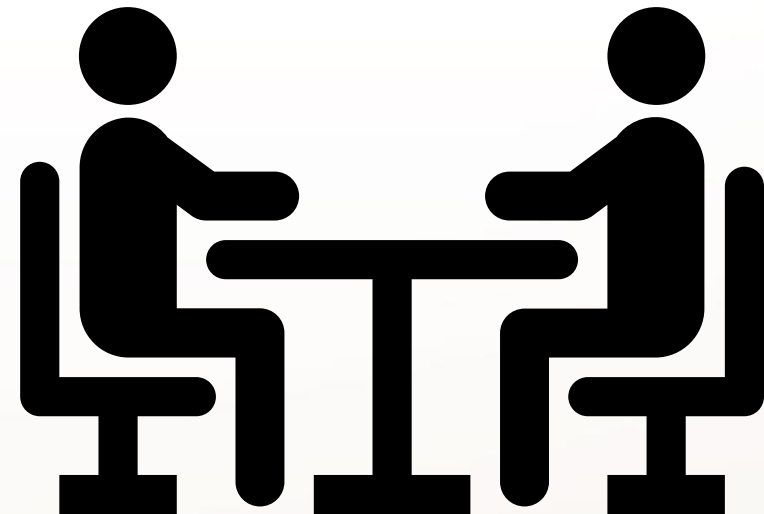
Issued: 2018-11-17 with Met Office Unified Model global forecast data



# Bargaining power within a household



- Difficult to observe esp. in quant. survey
- Proxies used in literature include **earned income, working status outside home, control over and ownership of household assets, level of education, and influence in decision-making**
- In this study, (so far) levels of **women partaking in household crop variety decisions and agreement between spouses** thereon



# Female influence in household decision-making in crop varietal choices

## Female influence in selection of crop varieties

	Female response		Male response	
	N	%	N	%
Female makes decision	149	17.09	84	10.69***
Joint decision	345	39.56	286	36.39*
Female not involved in decision	378	43.35	416	52.93***
Total	872	100	786	



Notes: \*\*\* and \* denote, that differences between female and male responses are statistically significant at the 1% and 10% level, respectively.




# Agreement on household decision making in crop variety choice

	N	%
Agreement on no female role	266	33.84
Agreement on female role	268	34.1
Disagreement, male says female has role “power-giving”	102	12.98
Disagreement, female says female has role “power-taking”	150	19.08
Total	786	100

# Estimation

- Associations of female influence in decision-making (female –decision, joint decision, male-decision) and
  1. Adoption of wheat varieties released after 2010 (*dummy*) 
  2. Average age of wheat variety grown by household in 2021 (*years*) 
- Additional covariates characteristics of female and male spouses, household and farm characteristics, information access proxies, and location dummies

# Results

- HH with female-decision of crop variety choice (as opposed to joint or male decision) 
  - Are significant more likely to have adopted wheat varieties released after 2010 (**+25 to +29% more likely**)
  - Cultivate wheat varieties that are younger on average (**6.4 to 6.7 years younger**)

# Conclusion

- Positive association between female influence in HH decision making and adoption and turnover of rust resistant wheat varieties
- We do not (yet?) understand the underlying mechanisms
- Dynamics in intra-household decision making provides insights for accelerating farmer variety replacement, contribute to increased crop yields, improved farmer livelihoods, and the achievement of national food security objectives



# Thank you very much for your interest

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(Credit: Enawgaw Shibeshi/CIMMYT)

# Female influence in decision making and adoption of rust resistant wheat varieties

Dependent variable  
**Adoption of varieties released after 2010**



Probit

IPWRA  
(ATET)

Female makes decision <i>(reference cat. – joint and male decision)</i>	0.252*** (0.0552)	0.286*** (0.0665)
Female or joint decision <i>(reference cat. – male decision)</i>	0.0561 (0.0352)	0.0737 (0.0436)
No. observations	756	726
LR chi <sup>2</sup>	132.21	114.91
Log-likelihood	-456.26	-464.91
Pseudo R <sup>2</sup>	0.127	0.110

\*\*\*  $p < 0.001$  denote levels of statistical significance of marginal effects estimates.

# Female influence in decision making and average age of wheat varieties grown on the farm

Dependent variable:

Average variety age (in years) 

OLS

IPWRA (ATET)

Female makes decision <i>(reference cat. – joint and male decision)</i>	-6.390*** (1.122)	-6.703*** (1.241)
Joint decision <i>(reference cat. – male decision)</i>	-1.716* (0.699)	-1.279* (0.617)
Constant	12.32*** (2.361)	
Observations	581	572
F	3.54	
R <sup>2</sup>	0.102	

\*  $p < 0.05$ , \*\*\*  $p < 0.001$  denote levels of statistical significance of marginal effects estimates.