



Women power! Gender-related inequality in agriculture and labour: empirical evidence from seven sub-Saharan countries

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1. Background and research questions

- Gendered differences in climate vulnerability are due to in social and cultural norms that shape gendered patterns in resource access, time use, income and access to services in rural areas.
- How do climate shocks and stressors influence agriculture-related outcomes across differing levels of gender equality in agricultural decision making?
- Do climate stressors influence labor decisions differently for men and women?

2. Methodology

- Descriptive and inferential analysis using seven nationally representative LSMS-ISA surveys (Ethiopia 2019, Malawi 2017, Mali 2017, Niger 2014, Nigeria, 2019, Tanzania 2013, and Uganda 2016) matched with gridcell time series bioclimatic variables on rainfall and temperature, identifying
 - Heavy rain: Days in which precipitation > the 95th percentile of the historic distribution
 - Hot day: Maximum daily temperature > 99th percentile of the historic distribution
 - Dry spell: Longest spell of consecutive days with < 1mm rainfall

3. Descriptive – Household level summary

	(1) All male- headed HHs	(2) Female- managed plots	(3) Male- managed plots	(4) Jointly managed plots	(5) Difference (2)-(3)
Crop Yields:					
Maize yields, kg/ha	1284.85	1214.98	1350.77	1252.21	-135.79**
Sorghum yields, kg/ha	801.72	270.74	751.75	1056.28	-481.01***
Millet yields, kg/ha	888.36	618.68	884.32	948.70	-265.63***
Bean yields, kg/ha	773.33	772.87	675.82	828.64	97.05
Groundnut yields, kg/ha	1023.62	1116.45	1130.22	822.16	-13.78
Value of harvest, USD	271.47	171.58	389.00	182.16	-217.42***
Value per ha, USD	1279.67	1091.21	1282.74	1301.82	-191.54
Agricultural characteristics:					
Mech. ag. equipment	0.17	0.19	0.25	0.10	-0.06***
Crop area, in ha	0.62	0.39	0.99	0.32	-0.61***
Ownership title	0.19	0.04	0.16	0.23	-0.13***
Moderate/steep slope	0.13	0.06	0.10	0.17	-0.04***
Observations (crop-plot combinations)	55,524	3,652	24,162	27,710	27,814
Countries	7	7	7	7	7

*p<0.10, **<0.05; ***<0.001

- Male-managed cereal plots achieve average yields that are up to 481 kilogrammes per hectare higher than those of female-managed plots.
- Women's work is often more irregular and part-time than men's

	(1) Full sample	(2) Women	(3) Men	(4) Difference (2)-(3)
Individual-level labour outcomes I:				
Respondent has a job	0.66	0.62	0.70	-0.08***
Observations	70,797	36,389	34,408	70,797
Individual-level labour outcomes II:				
Total labour hours (7-day recall period)	24.57	21.57	27.30	-5.73***
Share of hours on HH farm	0.72	0.75	0.69	0.06***
Observations	41,186	19,683	21,503	41,186
Countries	6	6	6	6

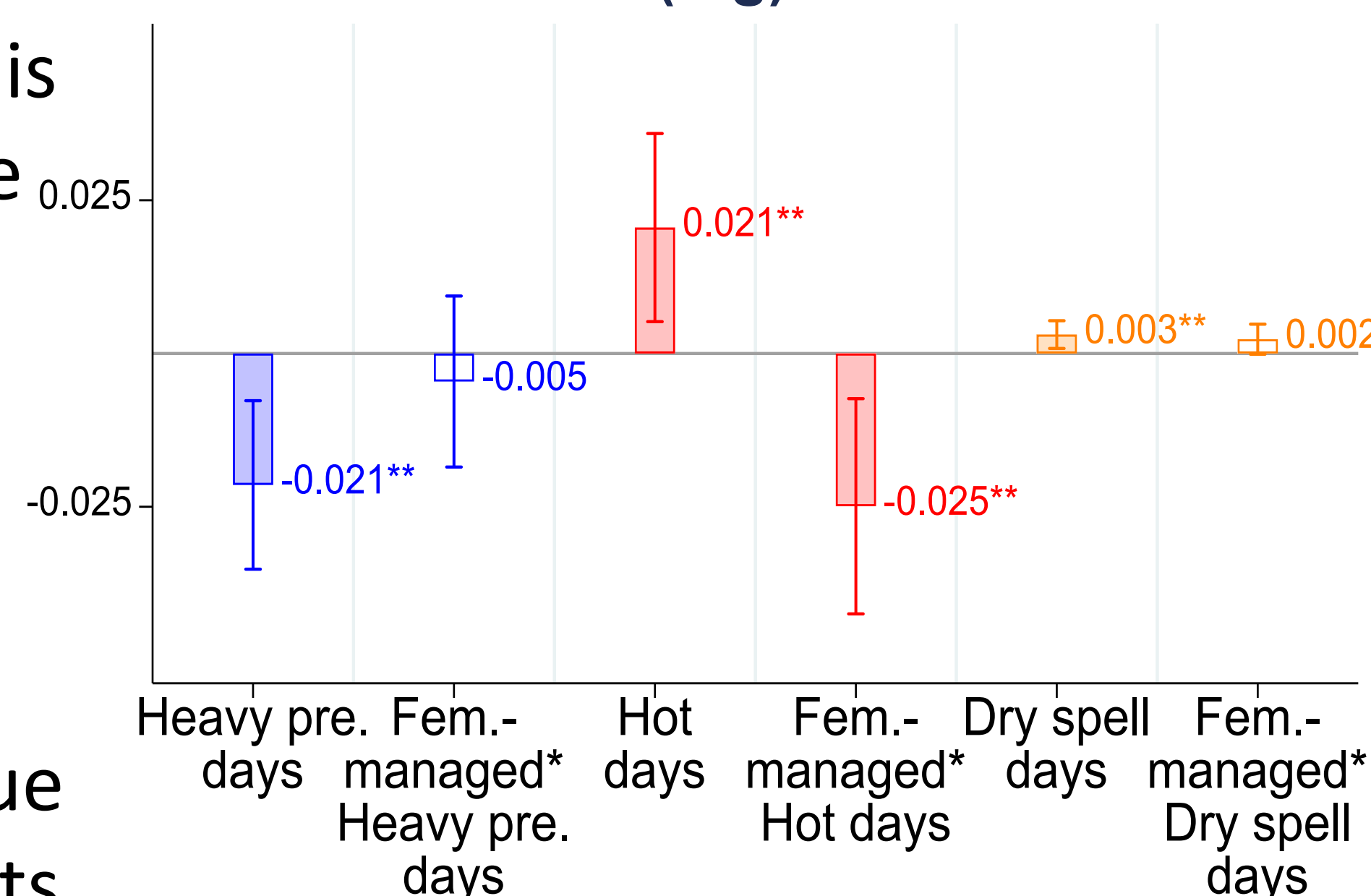
*p<0.10, **<0.05; ***<0.001

4. Results

Productivity

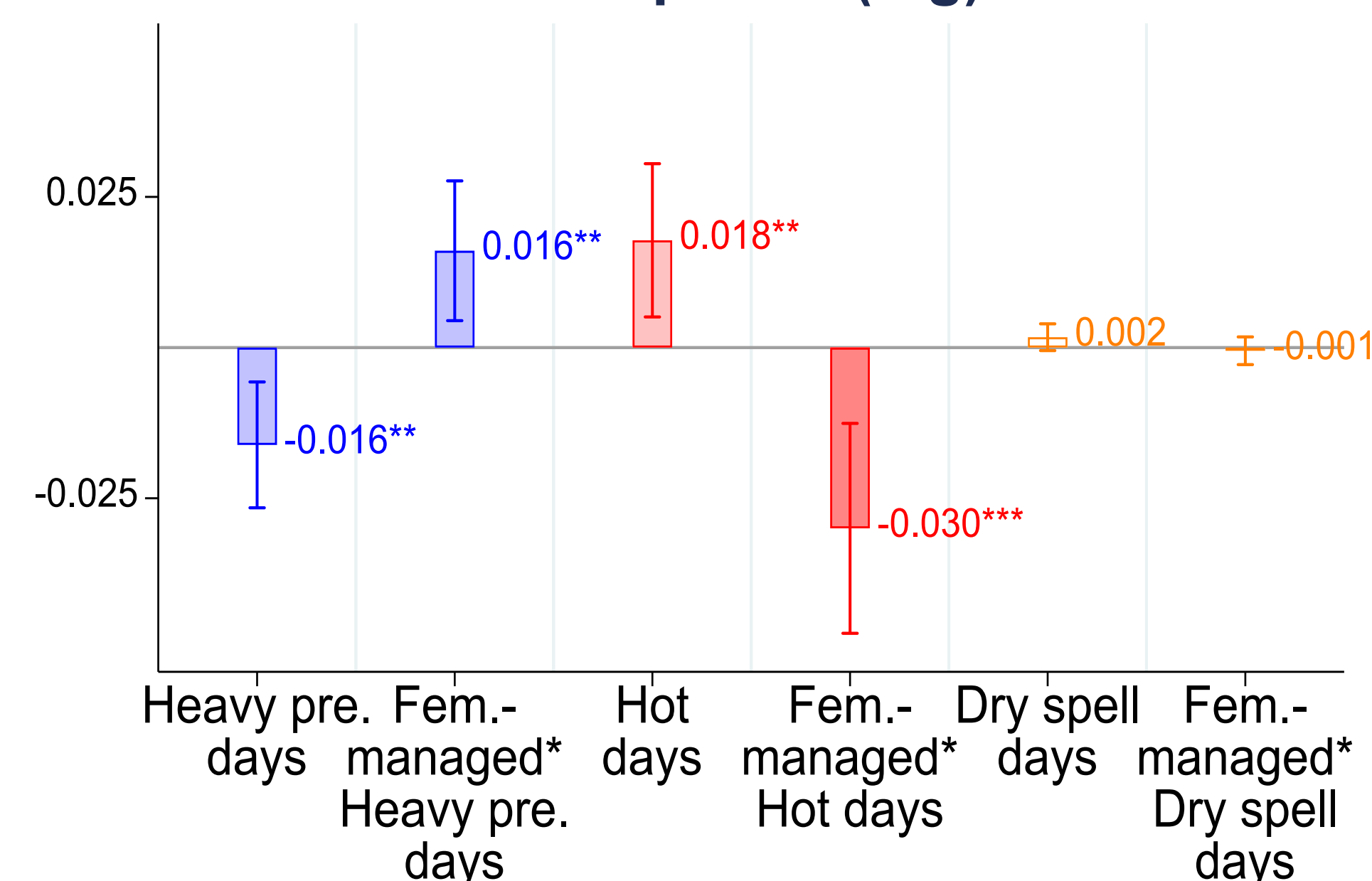
- An additional day of high temperature is associated with a 2.5% reduction in the total value of crops produced on women's plots compared to men's, no difference in terms of sensitivity to floods or droughts
- An additional day of high precipitation leads to an increase by 1.6% in the value of harvest per hectare on women's plots

Value of harvest (log)



*p<0.10, **<0.05; ***<0.001

Value of harvest per ha (log)

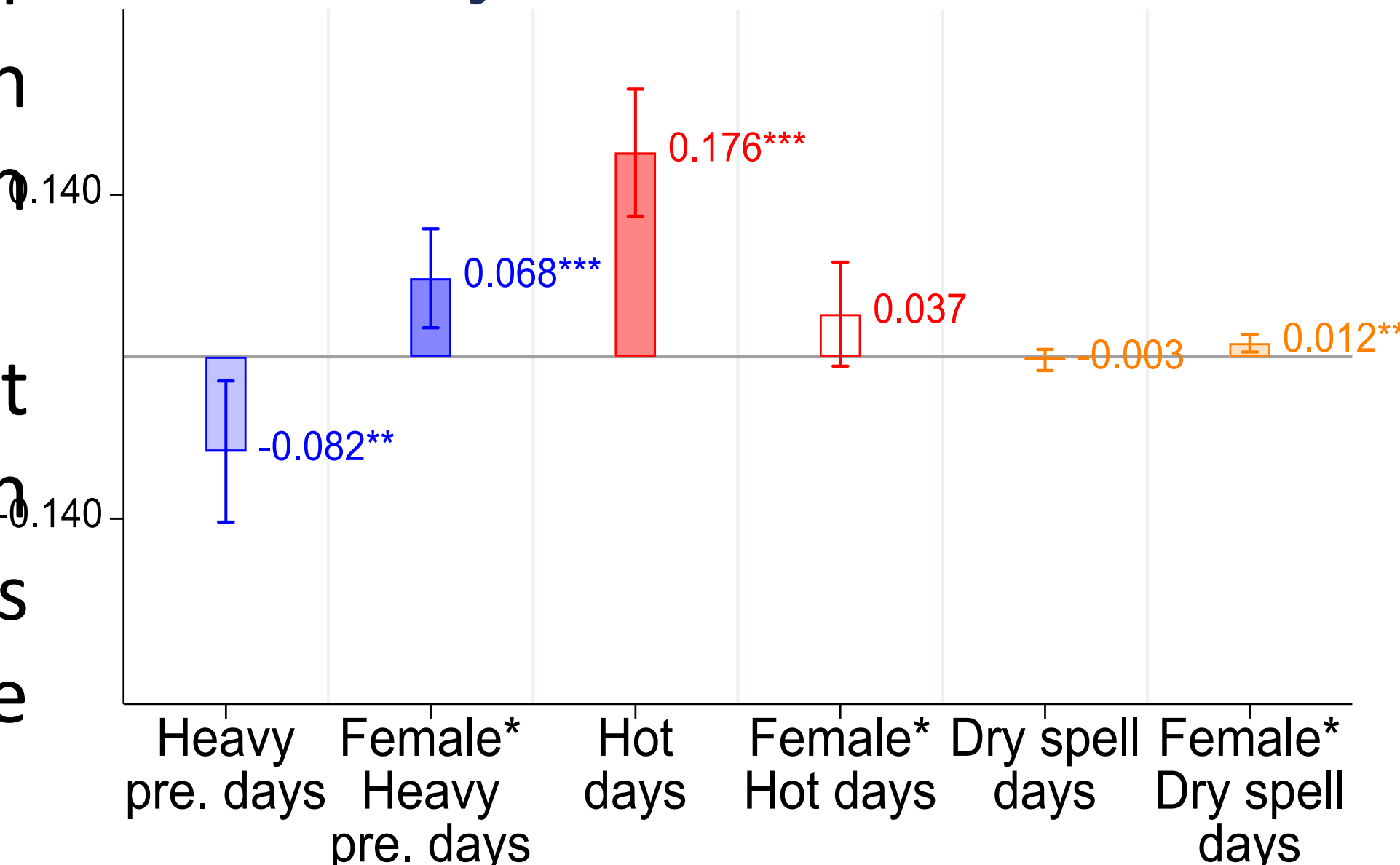


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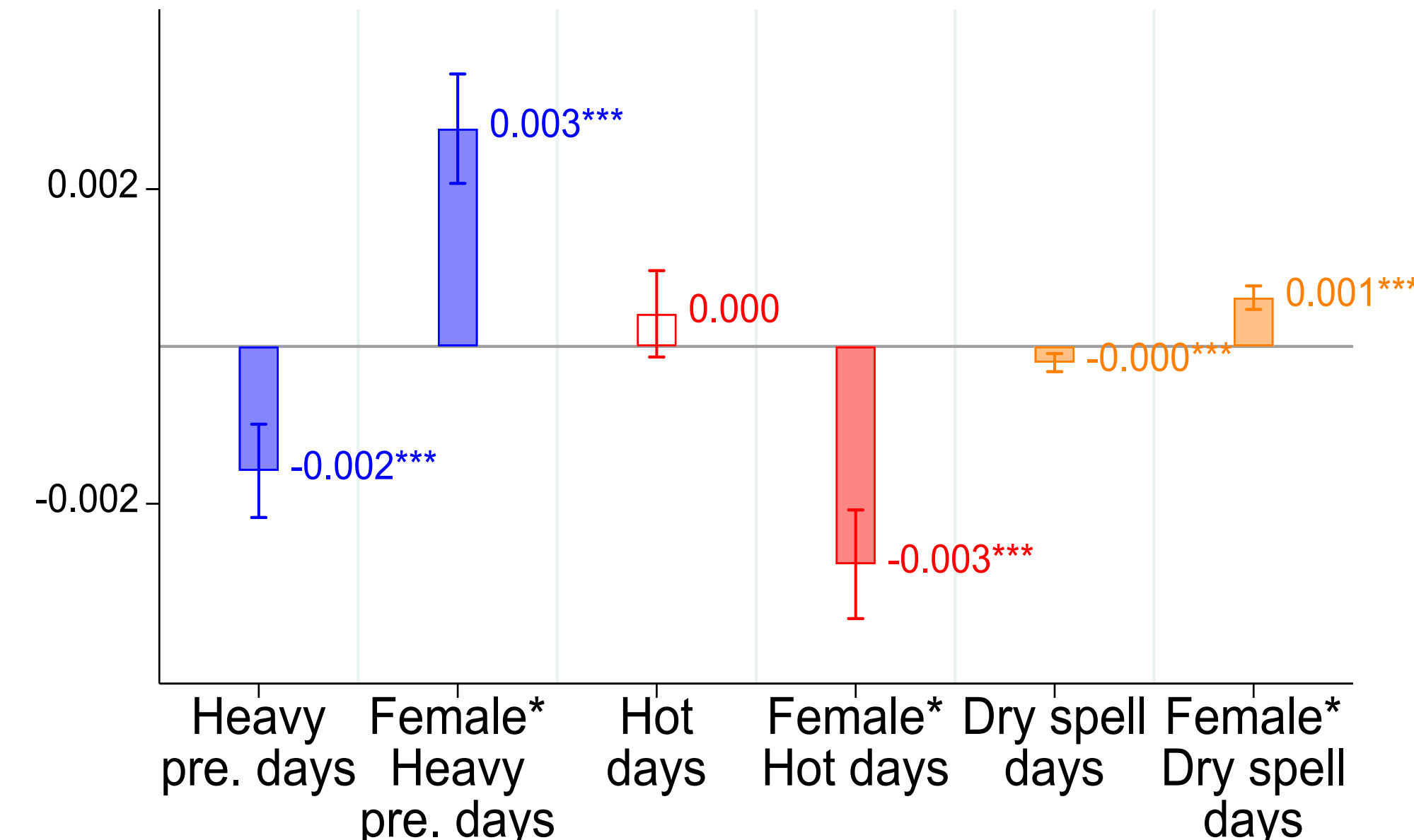
Labour

- Women's labour time and labour allocations is significantly higher than men's in the case of heavy precipitation and drought
- Exposure to high temperature days is not associated with differences between women and men in terms of total hours worked, but is associated with a relative reduction in on farm labour

Total weekly labour hours



Share of hours on HH farm



5. Conclusions

The disproportionately negative effect extreme weather events on women calls for local advocacy initiatives in support of agricultural and labor market policies for climate adaptation. Sustainable, climate-resilient policies and interventions remain a key priority alongside vulnerable group protection in planning and promoting agriculture- and job-related programmes.