

# Trials Under Fire:

## RCT and Women's Empowerment Amid Insecurity in Burkina Faso



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### 1 Research Questions

**Questions:** How do unforeseen shocks affect the implementation and impacts of randomized controlled trials? How to measure if interventions can mitigate negative effects of these shocks?

We study these questions in Burkina Faso, where rising insecurity increasingly disrupted a nutrition- and gender-focused behavior change communication (BCC) randomized controlled trial implemented between 2017 and 2022.

### 2 Introduction & Motivation

#### Conceptual framework:

- Women's empowerment is multi-dimensional, encompassing instrumental, intrinsic, and collective agency (Malapit et al. 2019; Rowlands 1998).
- Exposure and perceived risk of conflict may affect empowerment through the following mechanisms:
  - Safety concerns limit where women can go and how they allocate their time.
  - Household structure may change, due to death, avoiding recruitment, or engagement in conflict (more often men) (Justino et al. 2012).
  - Conflict may increase general stress and alter intrahousehold gender dynamics.
  - Conflict may disrupt social institutions, thus altering gender norms.

#### Study Context & Motivating evidence:

- Western Burkina Faso
- Low status of women, even compared to similar countries (Heckert et al. 2023; Quisumbing et al. 2024)
- Formerly an island of stability in the Sahel, Burkina Faso is now at the center of an armed conflict that has spilled over from neighboring countries (Haavik, Bøås, and Iocchi 2022)

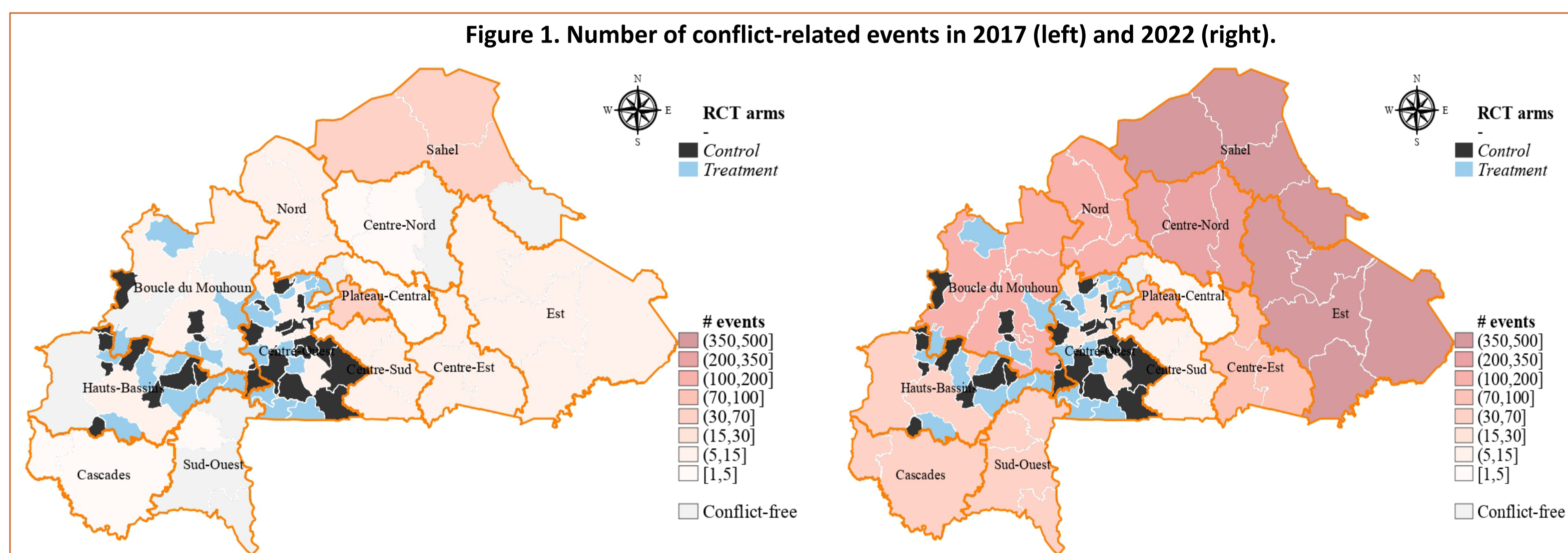
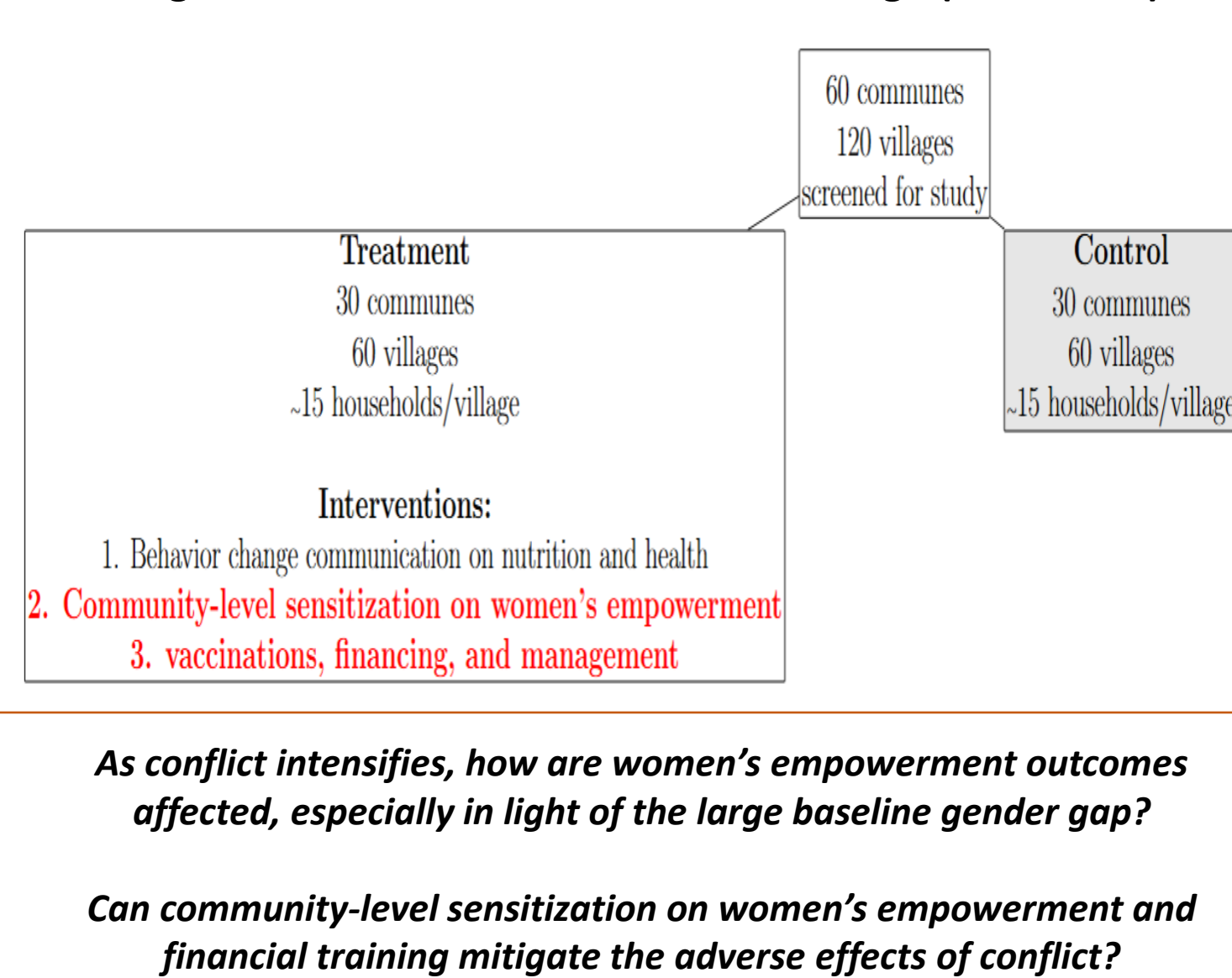


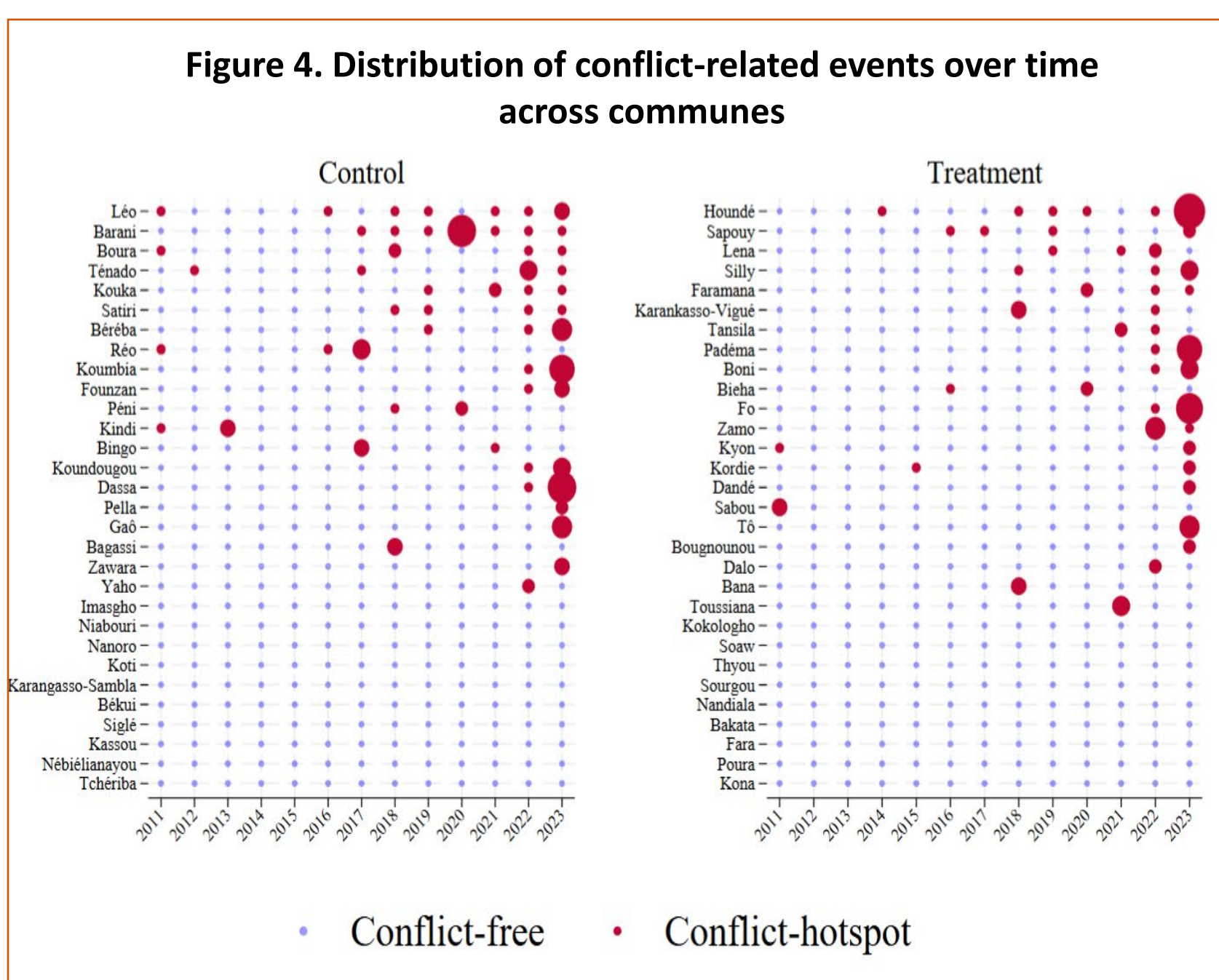
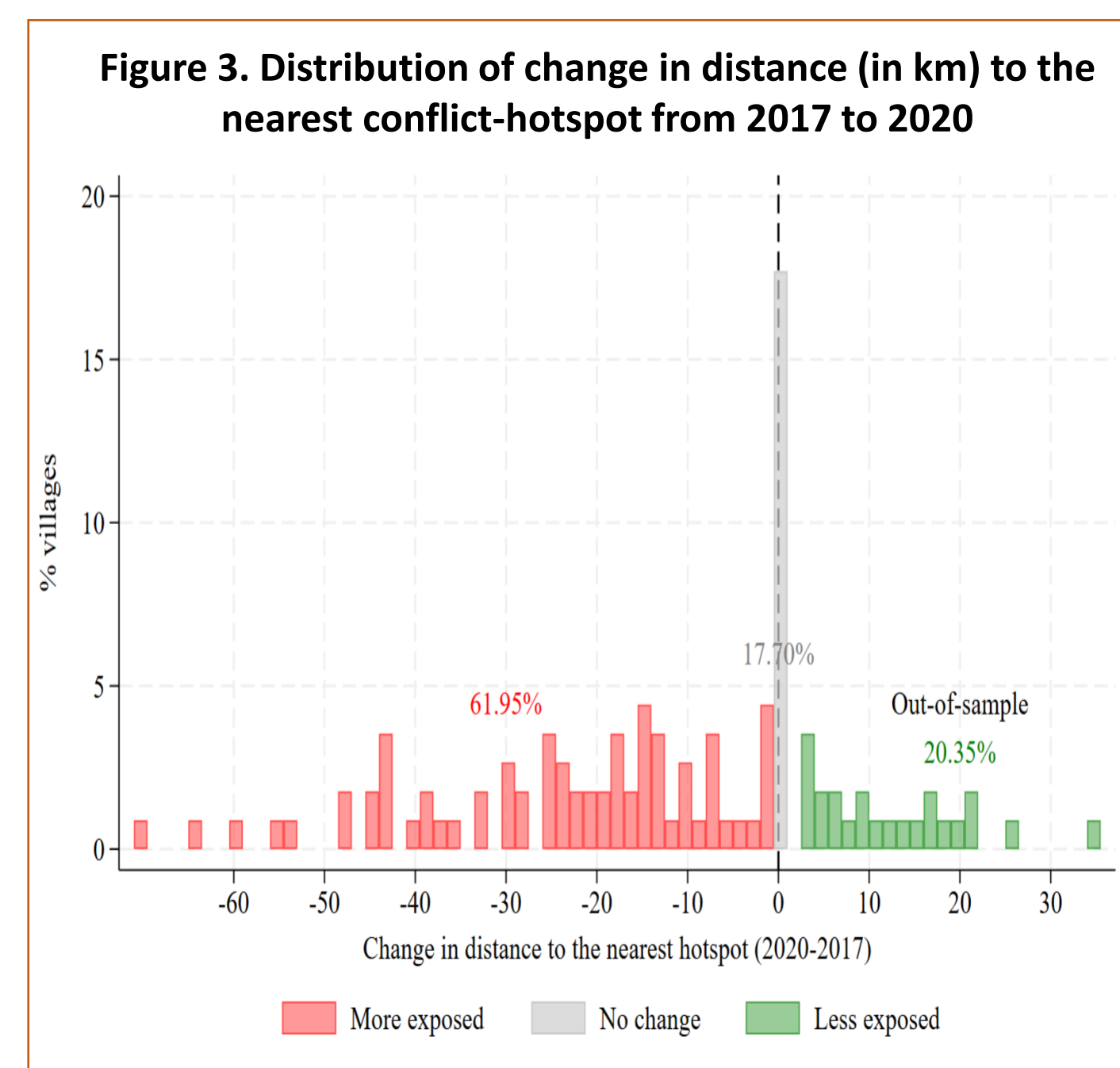
Table 1. Empowerment measurements and baseline (2017) means					
Variable	(1)		(2)		(5) Differen (M-W)
	Men Mean	N	Women Mean	N	
Binary version of pro-WEAI indicators (Mean in %)					
Intrinsic agency					
Autonomy in income	54.60	1478	44.17	1637	0.1043***
Self-efficacy	66.37	1478	53.82	1637	0.1256***
Rejection of IPV	74.63	1478	51.86	1637	0.2276***
Instrumental agency					
Input in productive decisions	94.86	1478	77.70	1637	0.1715***
Ownership of land and other assets	99.26	1478	87.17	1637	0.1208***
Access to and decisions on financial services	37.82	1478	21.08	1637	0.1675***
Control over use of income	82.48	1478	60.97	1637	0.2151***
Work balance	71.49	1473	31.34	1637	0.4015***
Visiting important locations	62.52	1478	45.82	1637	0.1670***
Collective agency					
Group membership	51.22	1478	46.79	1637	0.0442**
Respect among household members	77.18	1402	60.36	1496	0.1681***

Figure 2. Schematic view of the RCT design (2020-2022)



### 3 Data

- Impact evaluation of SELEVER, a gender- and nutrition-sensitive poultry value chain intervention; cluster randomized controlled trial; 1800 households (120 villages); separate interviews with women and men; randomized at the commune level (2 villages per commune). Data collection in 2017, 2020, and 2022.
- Time and georeferenced conflict data from the Armed Conflict Location and Event Data (ACLED) project database, 2017 to 2022, linked with villages GPS from surveys.



We address non-random conflict exposure using difference-in-differences designs with within-village variation over time and household panel data.

### 4 Estimation Strategies & Results

#### As conflict moves closer, what is its impact on empowerment?

##### Difference-in-differences specification

##### Continuous DiD\*:

(de chaisemartin et al. 2025)

$$\beta := -E\left(\frac{|d_t - d_{t-1}|}{E(|d_t - d_{t-1}| \mid \Delta d_t^-)} \times \frac{Y_t(-d_t) - Y_t(-d_{t-1})}{d_t - d_{t-1}} \mid \Delta d_t^-\right), \quad (1)$$

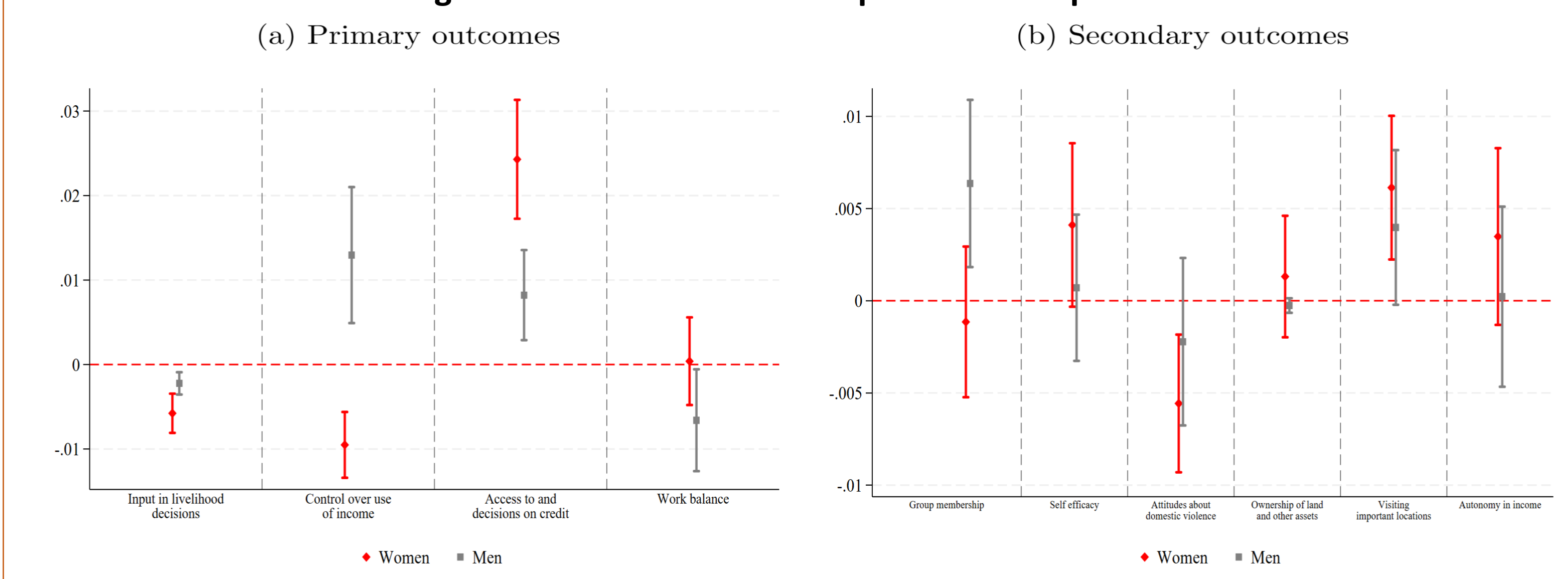
where  $\Delta d_t^- = \mathbb{1}_{\{d_t < 0\}}$ ,  $d_t :=$  distance to conflict.

##### Binary DiD:

$$Y_{it} = \alpha_1 \text{POST} + \alpha_2 \text{ConflictExposure}_v + \beta (\text{ConflictExposure}_v \times \text{POST}) + \delta (\text{SELEVER}_v \times \text{POST}) + \alpha_v + \varepsilon_{it},$$

where  $\text{ConflictExposure}_v = \mathbb{1}_{\{\Delta d_t \leq -15\text{km}\}}$ .

Figure 5. Effects of conflict exposure on empowerment



#### Did SELEVER mitigate the effects of conflict?

##### Triple difference estimation:

By comparing treated and untreated villages before and after SELEVER, across areas more or less exposed to conflict, we test whether the program buffers women/men against conflict-related setbacks.

$$\hat{\beta}_{DDD} = \left\{ \left[ \bar{Y}_{C=1, S=1, T=1} - \bar{Y}_{C=1, S=1, T=0} \right] - \left[ \bar{Y}_{C=0, S=1, T=1} - \bar{Y}_{C=0, S=1, T=0} \right] \right\} - \left\{ \left[ \bar{Y}_{C=1, S=0, T=1} - \bar{Y}_{C=1, S=0, T=0} \right] - \left[ \bar{Y}_{C=0, S=0, T=1} - \bar{Y}_{C=0, S=0, T=0} \right] \right\}$$

$DiD^{S=1}$ : Effect of conflict ( $C=1$ ) on SELEVER-treatment ( $S=1$ ) villages  
 $DiD^{S=0}$ : Effect of conflict ( $C=1$ ) on SELEVER-control ( $S=0$ ) villages

Table 2. Protective effects of the interventions

	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
	Input in livelihood decision		Control over use of income		Access to and decisions on credit		Work balance	
	Men	Women	Men	Women	Men	Women	Men	Women
Panel A. DiD on SELEVER treatment group sample								
Conflict Exposed × Post	-0.0056 (0.0254)	-0.0068 (0.0503)	-0.0478 (0.0654)	0.0357 (0.0834)	0.0002 (0.0957)	0.0431 (0.0458)	0.1102 (0.0726)	0.0395 (0.0793)
Panel B. DiD on SELEVER control group sample								
Conflict Exposed × Post	-0.0161 (0.0239)	0.0062 (0.0555)	-0.1050* (0.0554)	-0.0966 (0.0911)	0.2184*** (0.0731)	0.0790 (0.0577)	-0.1348** (0.0640)	-0.1629 (0.1001)
Panel C. Triple difference using full sample								
SELEVER × Conflict Exposed × Post	0.0105 (0.0345)	-0.0130 (0.0741)	0.0571 (0.0847)	0.1323 (0.1221)	-0.2182* (0.1190)	-0.0359 (0.0728)	0.2450** (0.0957)	0.2023 (0.1264)
Conflict Exposed × Post	-0.0161 (0.0236)	0.0062 (0.0550)	-0.1050* (0.0548)	-0.0966 (0.0902)	0.2184*** (0.0724)	0.0790 (0.0571)	-0.1348** (0.0634)	-0.1629 (0.0992)
Post=1	0.0151 (0.0189)	-0.0238 (0.0382)	0.0235 (0.0430)	-0.0057 (0.0591)	-0.1423** (0.0602)	-0.0509 (0.0502)	0.0528 (0.0506)	0.0887 (0.0934)
SELEVER × Post	-0.0093 (0.0270)	0.0308 (0.0521)	-0.0560 (0.0593)	-0.0688 (0.0758)	0.1262 (0.0833)	0.0707 (0.0597)	-0.1403** (0.0671)	-0.0962 (0.1080)
Observations	2266	2534	2266	2534	2266	2534	2107	2365
Village FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

#### Did proximity to conflict influence treatment take-up? Yes

Table 3. Correlation between distance to conflict hotspots and treatment take-up rate

	(1)	(2)	(3)	(4)
	Distance to the nearest conflict hotspot in 2022			
	First quartile ( $Q_1$ ) ( $< 11\text{km}$ )	Inter-quartile	Third quartile ( $Q_3$ ) $\geq 32\text{km}$	Difference ( $Q_1 - Q_3$ )
Attended at least one session	0.438	0.489	0.602	-0.164***
Number of attended sessions	1.451	1.778	3.075	-1.624***
Total duration (in hours)	4.429	3.599	10.051	-5.623***

### 5 Discussion & Conclusion

- Rising insecurity substantially disrupts program implementation by reducing participation, attendance, and engagement.
- Conflict exposure worsens women's empowerment by shifting income control and decision-making toward men and increasing acceptance of intimate partner violence.
- Some empowerment gains near conflict zones (e.g., credit access, self-efficacy) likely reflect targeted humanitarian responses rather than program effects.
- The SELEVER intervention partially mitigated conflict-related harm for women's work balance but not across all empowerment dimensions.
- In fragile settings, estimated treatment effects may reflect both program impacts and conflict-induced distortions, challenging the interpretation of RCT evidence.

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#### References

