



Tropentag, September 16-18, 2026, hybrid conference

“Towards multi-functional agro-ecosystems
promoting climate resilient futures”

Resilience capacity and food security in post-conflict northern Ethiopia: Baseline evidence from Tigray and Afar

TESFAYE BERHANU WOLDEYOHANES¹, HILDA KEGODE², GEORGE WAKESHO³, MIEKE BOURNE⁴,
NIGUSE HAGAZI⁵, GEBREHIWOT HAILEMARIAM⁶, KARL HUGHES⁷

¹ Center for International Forestry Research and World Agroforestry (CIFOR-ICRAF), Impact Lab, Kenya

² Center for International Forestry Research and World Agroforestry (CIFOR-ICRAF), Kenya

³ Center for International Forestry Research and World Agroforestry (CIFOR-ICRAF), Impact Lab,

⁴ Center for International Forestry Research and World Agroforestry (CIFOR-ICRAF),

⁵ World Agroforestry (ICRAF), Ethiopia

⁶ World Agroforestry (ICRAF), Ethiopia

⁷ Center for International Forestry Research and World Agroforestry (CIFOR-ICRAF), Kenya

Abstract

Rural households in northern Ethiopia face chronic exposure to climate and market shocks, compounded by the 2020–22 civil war that displaced many and depleted their assets. This study draws on baseline household survey data under the Regreening Africa II programme collected in 2025 to examine the household level capacities that buffer against shocks and food insecurity. We also assess whether these capacities differ between households in rain fed highlands and pastoral lowlands.

The survey covered 1,008 rural households across five woredas in Tigray ($n = 908$) and one woreda in Afar ($n = 100$). We build indices of absorptive, adaptive and transformative resilience capacity from the survey items and estimate how each interacts with shock exposure in predicting the Food Insecurity Experience Scale (FIES) and a Household Dietary Diversity Score (HDDS), with kebele fixed effects and kebele-clustered standard errors.

Our result shows that households in Afar report three times as many shocks and hold ten times more livestock per household than Tigray households, yet food-security outcomes are similar in the two regions. We find that resilience capacity reduces the shock cost but does not eliminate food insecurity. Splitting shocks into covariate events (those that affect many households at once) and idiosyncratic ones (affecting individual households) clarifies the mechanism: absorptive capacity lowers the FIES cost of a covariate shock but not of an idiosyncratic one. Communities can pool idiosyncratic risk; covariate risk must be absorbed at the household level.

The implication of our findings is that programmes operating in similar settings should priorities investments in absorptive capacity, particularly savings, informal safety nets, and psycho-social agency. A follow-up survey with a cluster-randomised design will support causal identification of the programme at endline, including both average and heterogeneous treatment effects.

Keywords: Afar, agroforestry, cluster randomisation, factor analysis, food security, northern Ethiopia, pastoral systems, resilience capacity, Tigray

Contact Address: Tesfaye Berhanu Woldeyohanes, Center for International Forestry Research and World Agroforestry (CIFOR-ICRAF), Impact Lab, c/o World Agroforestry (ICRAF), UN Avenue, Gigiri, 30677 Nairobi, Kenya, e-mail: t.woldeyohanes@cifor-icraf.org