

Does Sustainable Intensification Pay for Small-Scale Producers? An Analysis of Earnings from SSA

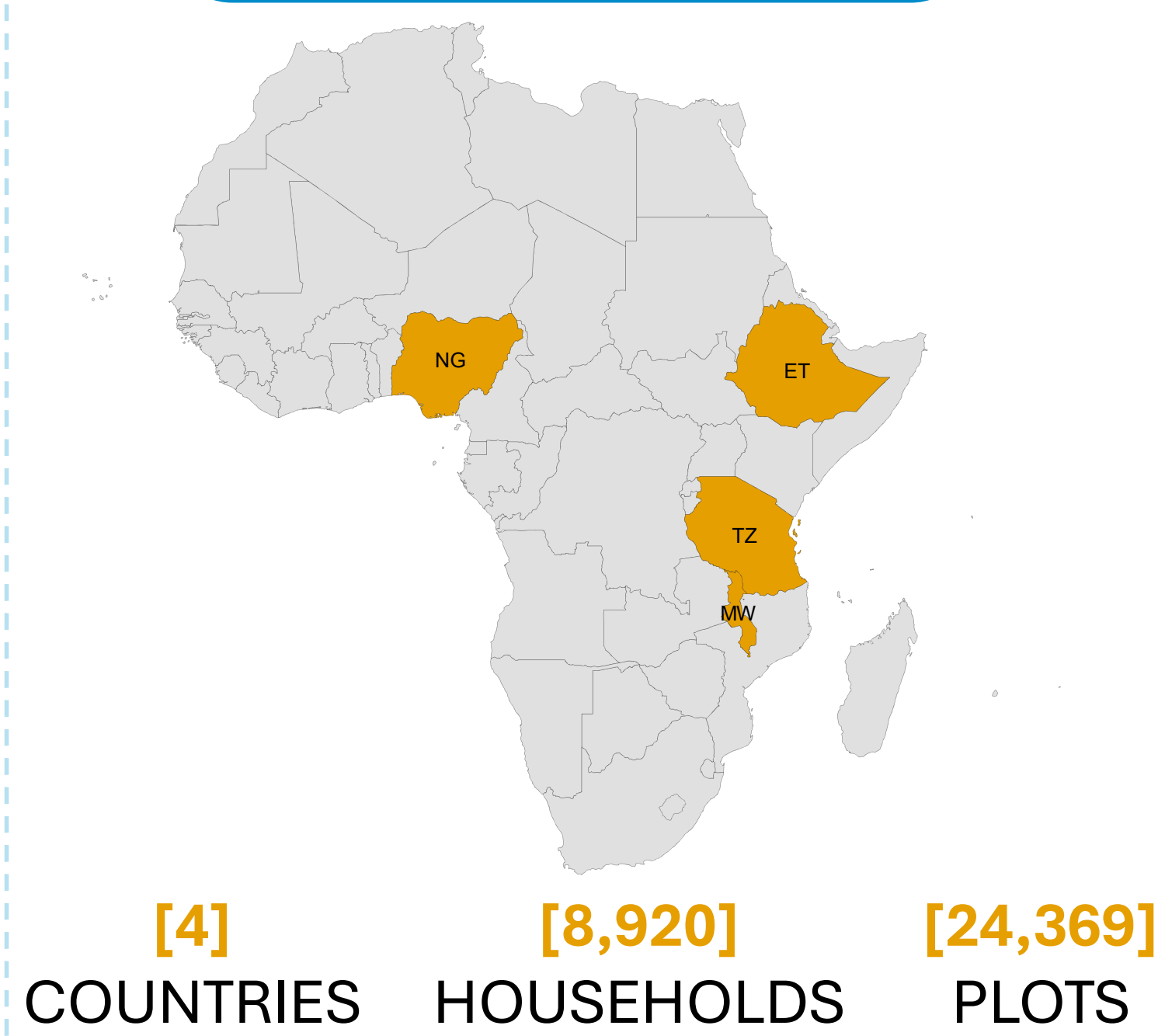
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WHY THIS MATTERS

- Widespread soil degradation & more erratic and changing weather.
- SI practices' environmental benefits are well established with existing literature focused on land productivity.
- Little known about the labor requirements of SI practices and the returns to family labor.

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Data



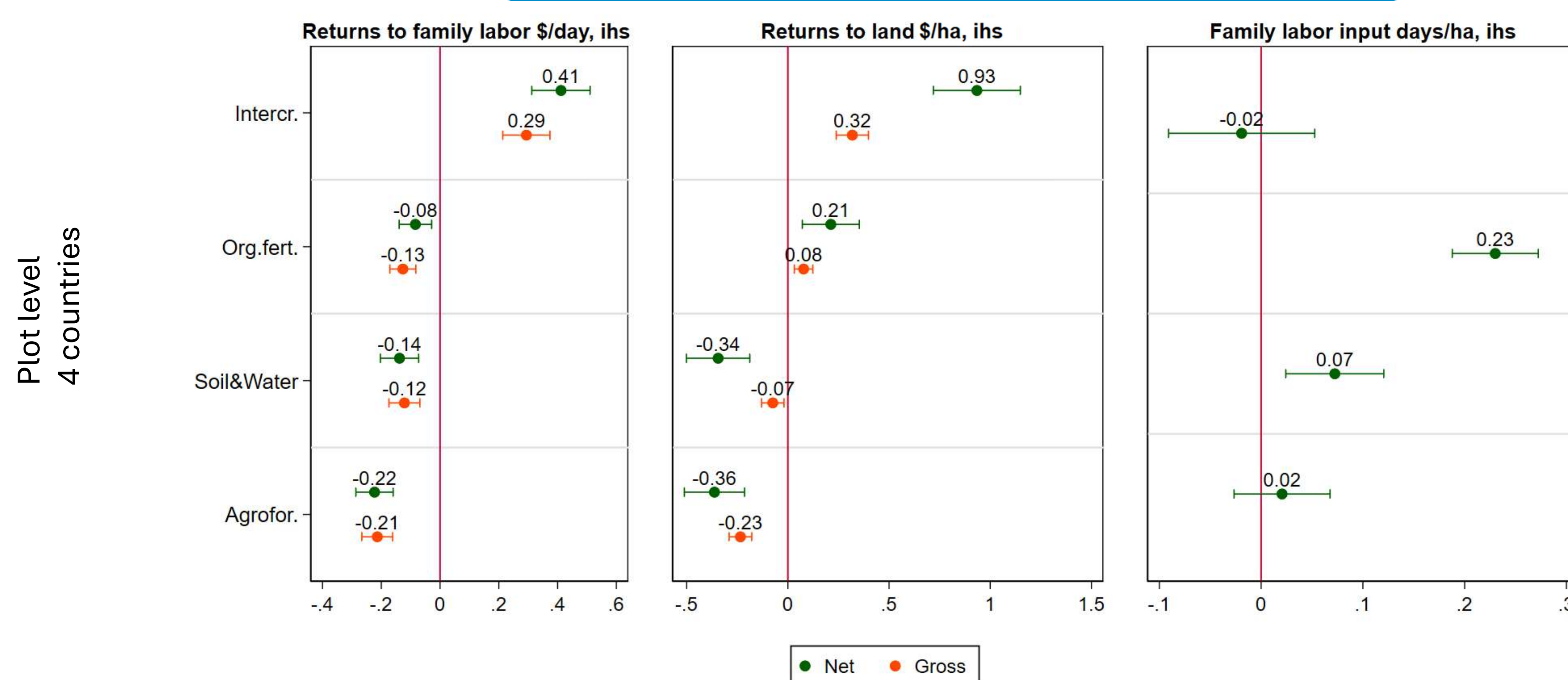
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Methods

- Household and plot level OLS analyses with household, farm and spatial covariates, plus country fixed effects.
- Outcomes considered:
 - Net returns to family labor: Gross value of total harvest minus farm expenditure divided by the total family labor (in person-day)
 - Net returns to land: Gross value of total harvest minus farm expenditure divided by cultivated land
 - Labor input days/ha: Family labor days divided by cultivated land
- SI Practices considered:
 - Intercropping: Growing cereals with legumes
 - Organic fertilizer: Decomposed plant/animal matter
 - Soil and water conservation: Bunding, ridging, hedgerows, basins
 - Agroforestry: Integrating trees with crops

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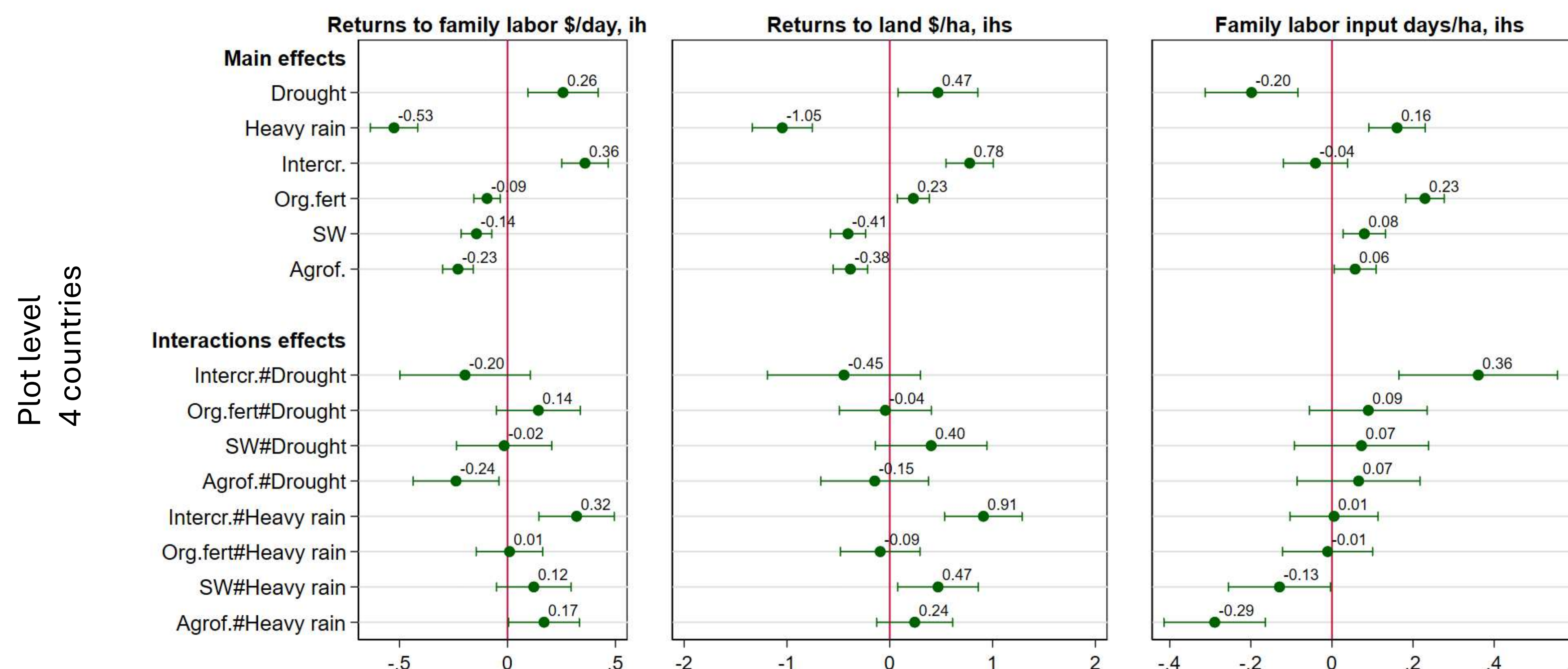
SUSTAINABLE INTENSIFICATION & NET RETURNS



Positive returns to family labor from intercropping, but negative returns for the other practices

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SUSTAINABLE INTENSIFICATION & RESILIENCE



Drought affects return to labor positively (less labor); flood negatively

SI does not protect against drought (exc. org fert) but helps w/flood

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KEY INSIGHTS

- SI adoption is often associated with **reduced net returns to family labor b/c increased labor needs are not offset by higher returns to land.**
- Only cereal-legume intercropping** consistently shows positive returns. Context also matters (agroforestry positive in West Africa).
- SI **partially offsets decline in labor returns under flood.**

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POLICY IMPLICATIONS

- SI is not a universal “win-win” solution. It can impose private costs on small-scale farmers while generating public environmental goods.
- Three entry points to address potential income losses:
 - Mechanization and labor-saving technologies can help offset the increased labor demand associated with adopting SI practices.
 - Payments for ecosystem services (climate finance, carbon markets)
 - Social protection programs (e.g. public works, cash transfers)
- More attention needed to the labor implications of SI practices (RCTs; long term effects; effectiveness of support).

