



Assessing the Impact of Sustainable Input Intensification on Crop Production and Household Income in Malawi.

Chadra Moreen Gama¹, Thabbie Chilongo², Julius Manda²

¹Lilongwe University of Agriculture and Natural Resources, ²International Institute of Tropical Agriculture



Introduction

- In **2022, 262 million** people in SSA faced hunger (FAO, 2023).
- Between **2023 and 2024, 4.4 million** Malawians faced hunger (IPC, 2023).
- Land has reduced from **1.53ha** to **0.4ha**/household and adverse weather conditions (Mgomezulu et al., 2024).
- The Malawi population is expected to be **24.2 million** by **2030** (Yeboua et al., 2023).

➤ **Research question:** What is the impact of the individual and combined effects of inorganic fertilizer (IF), organic fertilizer (OF), and improved varieties (IV) on crop production value and household income in Malawi?

Results

- The value of crop production (VOCP) is the economic gain from all crops grown by a household per individual.

1. Descriptive Statistics

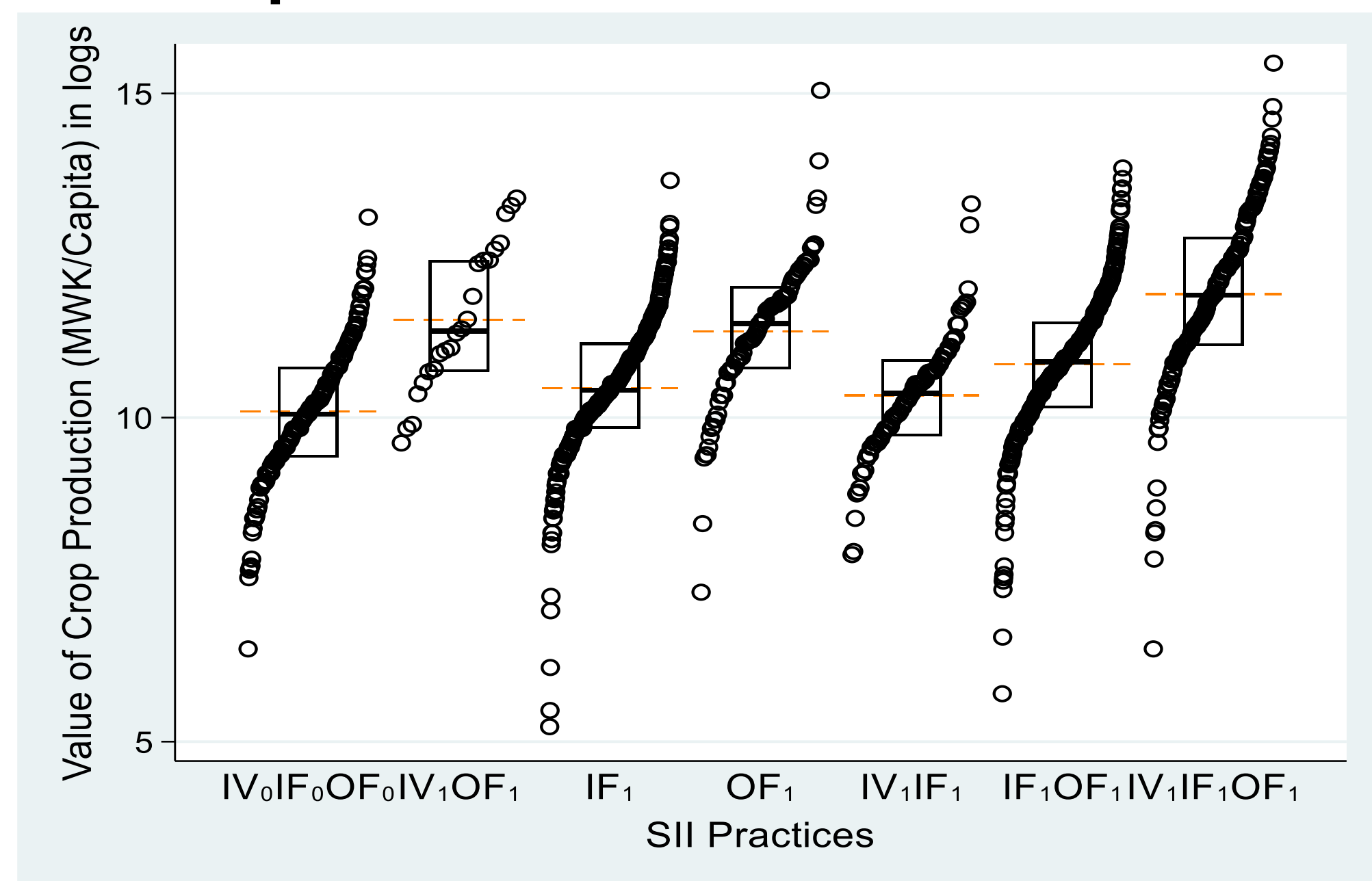


Figure 2: Strip plot showing the VOCP across SII practices.

- Household income per capita is total income from crops, livestock, and their products and income from off-farm activities.

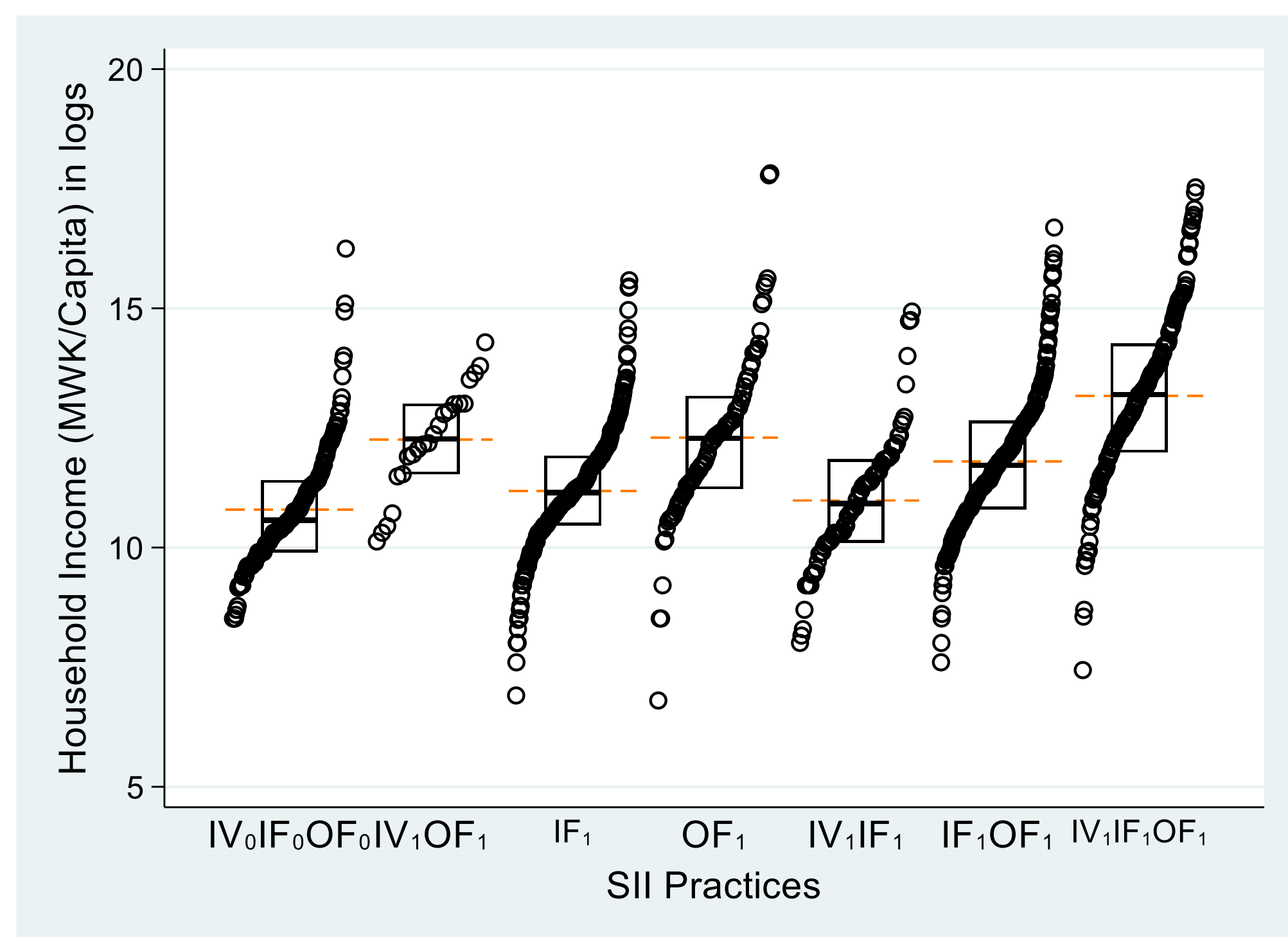


Figure 3: Strip plot showing the household income across SII Practices.



Figure 1: Farmers experiencing crop Failure in Malawi in 2024

Data and Methods

Data source: Survey data from the International Institute of Tropical Agriculture (IITA) on Sustainable Intensification of Mixed Farming Systems (SI-MSF) initiative.

Study area: Six districts in Malawi — Balaka, Mangochi, Zomba, Mzimba, Kasungu, and Dedza.

Sample size: 1269 households surveyed.

Analytical approach: Multinomial Endogenous Treatments Effects (METE) model.

Sustainable input intensification (SII) practices: Combinations of organic fertilizer, either with improved varieties, inorganic fertilizer, or both.

Results

2. Analytical Results

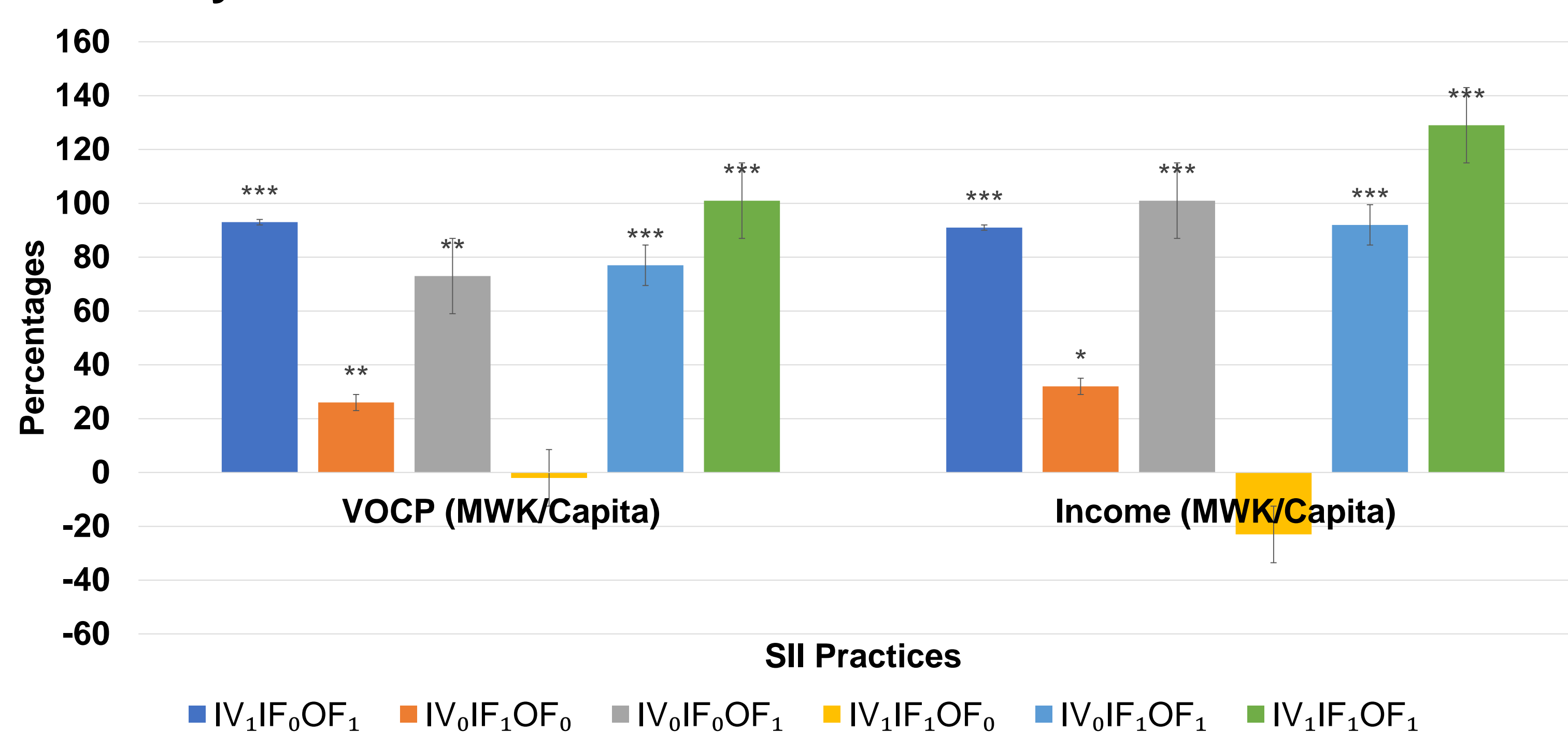


Figure 3: SII Impact on VOCP and Household Income

- Joint adoption of organic fertilizer, inorganic fertilizer, and improved varieties yields a substantial increase in crop value (101%) and household income (129%).

Conclusion

Positive Influence of SII adoption

- Years of education, group membership, land ownership, mobile phone ownership, livestock ownership, experiencing floods, and being from North.

Negative Influence of SII adoption

- Gender, household size, access to extension services, and being Central.

Impact of SII practices on VOCP and household income

- Ranges from a 77% to 101% increase in VOCP per capita and from a 91% to 129% increase in household income per capita.

Policies that promote the adoption of a comprehensive SII package and targeted extension services are important.

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Chadragama@gmail.com,
tchilongo@luanar.ac.mw
j.manda@cigar.org