

UNDERSTANDING THE GENDER AND CLIMATE CHANGE NEXUS

CONFERENCE PROCEEDINGS

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Gendered Effects of Crop Diversification and Climate Shocks on Household Food Security Status in Nigeria

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I. INTRODUCTION

Climate shocks represent a major constraint for households' food security status and have varying effects depending on household characteristics [1, 2]. A large proportion of households in Sub-Saharan Africa (SSA) are reliant on agriculture, producing food for home consumption and selling off surplus for income [3]. Hence, a sudden change in rainfall patterns (and temperature) threatens households' food production capacity and security status, disproportionately affecting vulnerable households and individuals. Recent studies suggest crop diversification is important in promoting household food security [4]. However, the crop diversification capability of households or individuals is limited by access to land, inputs, and information. Women in SSA are often characterized as having limited access to these three factors. Hence it is important to understand the nexus between climate shocks, crop diversification, and household food security while exploring the inter-and intra-household gender perspective.

The paper answers the questions – What are the differential impacts of climate shocks on the food security status of households based on the gender of the plot manager? Is crop diversification linked to improved food security status?

II. DATA AND METHODS

A. Data

We combine historical rainfall and temperature datasets with the World Bank Living Standards Measurement Study-Integrated Surveys on Agriculture (LSMS-ISA) for Nigeria. We then use an adapted version of the Crop Diversification Shannon index (WSI) to measure crop diversification. The adopted food security indicators are the Household Dietary Diversity Score (HDDS), the reduced coping strategies (rCSI), and the food per capita expenditures. We focus on plot managers rather than household heads to explore the gender dimension for this study. Nigeria[5, 6].

B. Methods

We use the adapted version of Crop Diversification, the Weighted Shannon index (WSI). We then employed a GMM regression method to answer our research questions and correct for attrition across survey waves using Inverse Probability

Weighting (IPW). In addition, we use percentile weight regression to study the heterogeneity of impacts according to a set of other factors, such as land size.

III. RESULTS

Our results show that climate shocks have a negative and significant impact on the food security status of households with men and women plot managers. However, a rise in extreme dryness that is drought is linked to five unit reduction in the number of food groups consumed by households with male plot managers. However, the effect on households with female plot managers is albeit small and not statistically significant. We attribute this to the muting effects of crop diversification as we find that crop diversification is positively linked to food security.

We also find that excess water, that is, flood shock is linked to a large and significant fall in female plot managers' household expenditure on food.

Our results show the need to target policies to encourage crop diversification in households and promote crop diversification components in women empowerment programs.

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