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Fonio production implications on household food and nutrition security in Saboba Chereponi districts, northern Ghana

YAW BONSU OSEI-ASARE¹, CUTHBERT KABA NABILSE²

¹ *University of Ghana, Dept. of Agricultural Economics and Agribusiness, Ghana*

² *University of Ghana, Agricultural Economics and Agribusiness,*

Abstract

The 2021 UN Food Systems Summit and the declaration of 2024 as the International Year of Millets, highlighted the importance of Underutilised Indigenous Food Crops (UIFCs) for building more inclusive, resilient and sustainable local food systems to address short to long-term food and nutrition security (FNS) needs. Fonio, an UFC, a nutrient-rich and gluten-free grain, is a fast-maturing crop and well adapted to local environments, is considered a functional food and is believed to contribute to fonio producers' household welfare. However, fonio is under-researched, neglected in Ghana's agricultural policy, and has limited empirical evidence linking its production to household food and nutrition security (FNS). This study examined the effects of fonio production on household's FNS relative to main staples in the Saboba and Chereponi districts of northern Ghana using a sample of 476 smallholder farmers. Relative Importance Indices (RII) of crops cultivated were computed to derive their five most important crops. The conditional mixed process (CMP) estimation was utilised to determine the effects of each crop's output on households' FNS using months of adequate household food provisioning (MAHFP), HFI-AS, and HDDS as measures for food availability, food access, and nutritional adequacy respectively. Maize, rice, soyabean, fonio and sesame were determined to be the five most important crops, with RII of 0.87, 0.43, 0.42, 0.34, and 0.31, respectively. While maize is mainly for household consumption, rice and fonio are for both consumption and income, and soyabean and sesame serve as cash crops. Increasing fonio production was significantly associated with more food security (lower HFIAS), and less food diversity (lower HDDS), but with no significant effect on MAHFP. Higher consumption of own-produced fonio was associated with lower dietary diversity but with no significant effects on MAHFP and HFI-AS. The study concludes that fonio production improves household food security through the food access domain. However, increased production without associated increased fonio commercialisation may lead to a potential negative nutritional trade-off for households. These nutritional dynamics require further investigation. It is recommended that fonio be promoted as an income crop among households to boost food security among smallholder food crop farmers.

Keywords: Fonio, food and nutrition security, Ghana, indigenous crop, underutilised