Assessing the Contribution of Smallholder Irrigation to Household Food Security in Zimbabwe

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Abstract

Sustainable Development Goal (SDG) 2 seeks to end hunger and guarantee food and nutrition security worldwide by 2030. Smallholder irrigation development remains a key strategy to achieve SDG 2. This study assesses how smallholder irrigation contributes to household food security in Mberengwa district, Zimbabwe. Primary data were gathered from a randomly chosen sample of 444 farmers (344 irrigators and 100 non-irrigators) using a structured questionnaire. Microsoft Excel and Statistical Package for Social Sciences version 27 software packages were used to analyse the data. Descriptive statistics, chi-square test, t-test, and binary logistic regression were performed. The t-test results show significant differences in mean between irrigators and non-irrigators for household size, the dependency ratio, farming experience, farm income, food expenditure share, and livestock owned ($p < 0.05$). Irrigators had significantly higher area planted, yield, and quantity sold for maize during the summer than non-irrigators ($p < 0.05$). Food Consumption Score results show that 97% of irrigators and 45% of non-irrigators were food secure. Binary logistic regression results reveal a significant association between food security and household size, irrigation access, and farm income ($p < 0.05$). In conclusion, access to smallholder irrigation increases household food security. The government and its development partners should prioritise investments in smallholder irrigation development, expansion, and rehabilitation.

Keywords: smallholder irrigation; food security; food consumption score; Sustainable Development Goal; Zimbabwe