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Does Gender-Sensitive Agricultural Intervention Improve Food Security and Profit Efficiency?

TEMESGEN FITAMO BOCHER, SINDI KIRIMI, JAN LOW

International Potato Centre, Mozambique

Abstract

Sweetpotato (*Ipomoea batatas* L.) is an important staple food crop in Rwanda. This study analysed the impacts of gender-sensitive sweetpotato based intervention on food security, food consumption, and profit efficiency; by applying stochastic profit frontier, propensity score matching (PSM), and endogenous switching regression (ESR) models. The study is based on the data collected from 846 households from rural Rwanda, in 2014. The data contains 39 % beneficiaries, 37 % spill-overs, and 24 % control households.

The finding suggested that on average female headed households were less educated, older, own fewer livestock, less likely to participate in sweetpotato marketing, less likely to be involved in informal business, and more likely to be food insecure than male-headed households. Gender-sensitive agricultural intervention increased food consumption scores by 25 and 23 points ($p < 0.001$), for female and male headed households, respectively; and it has reduced the food insecurity of female and male headed households by 35 % and 53 %, respectively. Average level of profit efficiency in sweetpotato production system is 55%; profit efficiency of female beneficiary, and female spill-over is found to be 3.5 %, and 5 %, higher than that of control male households, respectively. The profit efficiency of participant households was 64 % compared to 20 % of the control. It is indicated that food security and food consumption score were positively and significantly ($p < 0.05$) associated with head education, number of sweetpotato varieties planted, participation in informal business, and livestock ownership; and negatively with household size.

It is concluded that gender-sensitive agricultural intervention increased profit efficiency, food security, and food consumption. Furthermore, to achieve the goal of gender-equitable changes in livelihood through agricultural intervention, it is crucial to design programs, policies, and projects explicitly targeting the women; if designed with special attention to women's need, agricultural intervention, can enhance food security, food consumption, and profit efficiency of the poor and disadvantageous households.

Keywords: Biofortified crops, food consumption, food security, gender-sensitive intervention, Rwanda