Farmers’ Decisions to Cultivate in the Short Rainy Season and Expected Educational Expenditure: Evidence from Rural Tanzania

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Recently, growing literature on Sub-Saharan Africa (SSA) has focused on farmers’ strategies to secure the level of livelihoods under limited resources. For example, farmers diversify portfolios of planted crops or sources of on-farm and non-farm income to alleviate climatic and economic shocks. SSA farmers address livelihood issues by utilizing opportunities provided in their environments.

As a strategic option for SSA farmers to address livelihood issues, this study sheds light on farmers’ cultivation in the short rainy season. In East Africa, the bimodal rainfall pattern offers two cropping seasons: the long rainy season as a main cultivation season and the short rainy season as a secondary cultivation season. The short rainy season provides an additional opportunity for farmers to produce food before the start of the long rainy season, which may enable farmers to solve their livelihood issues.

Despite the economic importance of the short rainy season for farmers’ livelihoods, few empirical studies have clarified what economic issue farmers solve by cultivating in short rains in addition to long rains. Most studies neither focused on the cultivation in the short rainy season as a main research topic nor examined its economic role.

To reveal what motivates farmers to cultivate in the short rainy season, this study focuses on their need for educational expenses. We hypothesize that educational expenditure expected in the future induces farmers to cultivate in the short rainy season. If households expect their children to start their schooling or go on to the next educational stage (e.g., from primary to secondary schools), households have to prepare for additional educational expenditure in the near future. To cover a deficit of educational expenditure caused by children’s new enrollments in schools, farmers decide to cultivate in short rains. Moreover, we hypothesize that this effect is greater for poor farmers because they have limited income-earning opportunities other than on-farm activities, relative to wealthy farmers.

Our dataset comes from two phases of the Tanzanian National Panel Survey (NPS), which collected socioeconomic and agricultural information of households nationwide. Controlling for unobserved time-constant household heterogeneity using a pooled correlated random effects (CRE) probit model, we investigate whether farmers’ expectation for educational-stage shifts of their children increases the probability of farmers’ cultivation in short rains.

Our analysis shows that one more educational-stage shift of children in the future increases the probability of farmers’ cultivation in short rains by around 10%. Moreover, assuming that one child will experience an educational-stage shift in a household, the probability of farmers’ cultivating in short rains decreases by around 2.5% per food consumption increase of 100,000 Tanzanian shillings, which implies that farmers’ decisions on short-rains cultivation are heterogeneous between poor and wealthy farmers.

Our findings suggest that farmers strategically determine the cultivation in the short rainy season to prepare for future cash outflows such as education. Few empirical studies clarified a purpose that farmers cultivate in the short rainy season as well as in the long one. Our findings also emphasize the role of universal public systems in shaping farmers’ cultivation decisions. In this study, farmers’ cultivation decisions in the short rainy season may be affected by how to design the formal educational system in Tanzania.