Tropentag, September 17-19, 2018, Ghent

"Global food security and food safety:
The role of universities"

Grain Legume Cultivation and Children's Dietary Diversity in Smallholder Farming Households in Rural Ghana and Kenya

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Abstract

Boosting smallholder food production can potentially improve children's nutrition in rural sub-Saharan Africa through a production-own consumption pathway and an income-food purchase pathway. Rigorously designed studies are needed to provide evidence for nutrition impact, but are often difficult to implement in agricultural projects. Within the framework of a large agricultural development project supporting legume production (N_2Africa), we studied the potential to improve children's dietary diversity by comparing N_2Africa and non-N_2Africa households in a cross-sectional quasi-experimental design, followed by structural equation modelling (SEM) and focus group discussions in rural Ghana and Kenya. Comparing N_2Africa and non-N_2Africa households, we found that participating in N_2Africa was not associated with improved dietary diversity of children. However, for soybean, SEM indicated a relatively good fit to the *a posteriori* model in Kenya but not in Ghana, and in Kenya only the production-own consumption pathway was fully supported, with no effect through the income-food purchase pathway. Results are possibly related to differences in the food environment between the two countries, related to attribution of positive characteristics to soybean, the variety of local soybean-based dishes, being a new crop or not, women's involvement in soybean cultivation, the presence of markets, and being treated as a food or cash crop. These findings confirm the importance of the food environment for translation of enhanced crop production into improved human nutrition. This study also shows that in a situation where rigorous study designs cannot be implemented, SEM is a useful option to analyse whether agriculture projects have the potential to improve nutrition.

Keywords: Children, dietary diversity, Ghana, Kenya, legume production, SEM analysis

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