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Can a Smallholder Farm Sufficiently Feed the Family? A Case Study from Kapchorwa District, Uganda

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Abstract

Despite Uganda's high agricultural potential, the hunger situation is classified as "serious". Access to food is limited for many people and subsistence farming often represents the main source of food. Recent research has been working on finding a link between increased agrobiodiversity and household nutrition. However, no research has been done focussing on the amount of nutrients produced on farms and to what extent the nutrients could potentially cover the households' requirements. Therefore, the objectives of this study were to (i) investigate whether smallholder farmers could produce enough nutrients to cover the households' requirements and (ii) identify whether missing nutrients are specific to certain households or insufficient in the whole region. The results will be used for linked agriculture – nutrition interventions.

The data was collected during the long rainy season (March-August 2016) and covered the produced food diversity (plant and animal products) and yields of 58 smallholder farmers' households in Kapchorwa, Uganda. Energy, carbohydrates, fat, protein, iron, zinc, vitamin A, vitamin C, calcium, potassium, magnesium, copper, folate, vitamin B12 and selenium content were calculated for all produced yields of each household using food composition databases. Dietary requirements of each household were calculated using recommended daily allowances. Finally, the average daily amount of nutrients produced per household was calculated and compared to the households' requirements respectively.

Not a single household produced enough nutrients to meet its members' requirements, nor was there a nutrient that every household could produce sufficiently. Particularly vitamin B12, vitamin A, calcium, and iron were insufficiently produced. While only one or two households could supply enough vitamin B12 and calcium, six households could potentially meet their vitamin A requirements. The main source of nutrients came from plants, as animal source foods were very rarely consumed. Hence, the bioavailability of some nutrients was likely to be low. A higher diversity of cultivated crops was associated with a higher coverage of some nutrients. Identified entry points for interventions would therefore include adding a higher diversity of micronutrient-rich plant source foods to the food basket through subsistence farming, as well as encouraging an increased consumption of animal source foods.

Keywords: Agriculture, biodiversity, food composition, nutrition

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