



Agriculture to Nutrition (ATONU): Dietary diversity and nutritional status in women and children in rural farming households in Ethiopia and Tanzania

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1. Introduction

Most agricultural development programs have tended to focus on increasing the production and productivity of staple foods rather than nutrition. Therefore, agricultural development initiatives must incorporate nutrition-sensitive interventions (NSIs), and ensure consumption of diverse diets with essential proteins, minerals and vitamins and sufficient caloric intake. Also, there is little direct evidence linking agricultural programs and nutrition outcomes. The Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN) and partners are implementing the Agriculture to Nutrition (ATONU) Project to answer the question of what agriculture programs can do to deliver positive nutrition outcomes. ATONU project is working with the African Chicken Genetic Gains (ACGG) Project being implemented by the International Livestock Research Institute (ILRI) in Ethiopia and Tanzania, as pilot projects. The objective of ACGG is to increase productivity and production of chickens by smallholder farmers through the introduction of improved and adapted genetics.

ATONU is implementing a package of NSIs through social behaviour change communication (SBCC) messaging as follows: nutrition education and hygiene to increase consumption of eggs and chicken meat; influencing expenditure of income from the sale of chicken and eggs to purchase other nutrient dense food; women empowerment to influence changes in women's time use and agency (decision making); and promotion of home gardens for improved dietary diversity. This paper describes highlights of results from the baseline studies in Ethiopia and Tanzania, which are part of the impact evaluation for the NSIs.

2. Objectives of Baseline Studies

The objective of the studies was to determine the baseline values of the primary and secondary outcomes of dietary diversity score among women of reproductive age (18-49 years); women's anemia status and body mass index; and young children's growth (stunting, wasting and underweight rates) and anemia status, respectively, in rural, chicken-producing areas of Ethiopia and Tanzania.

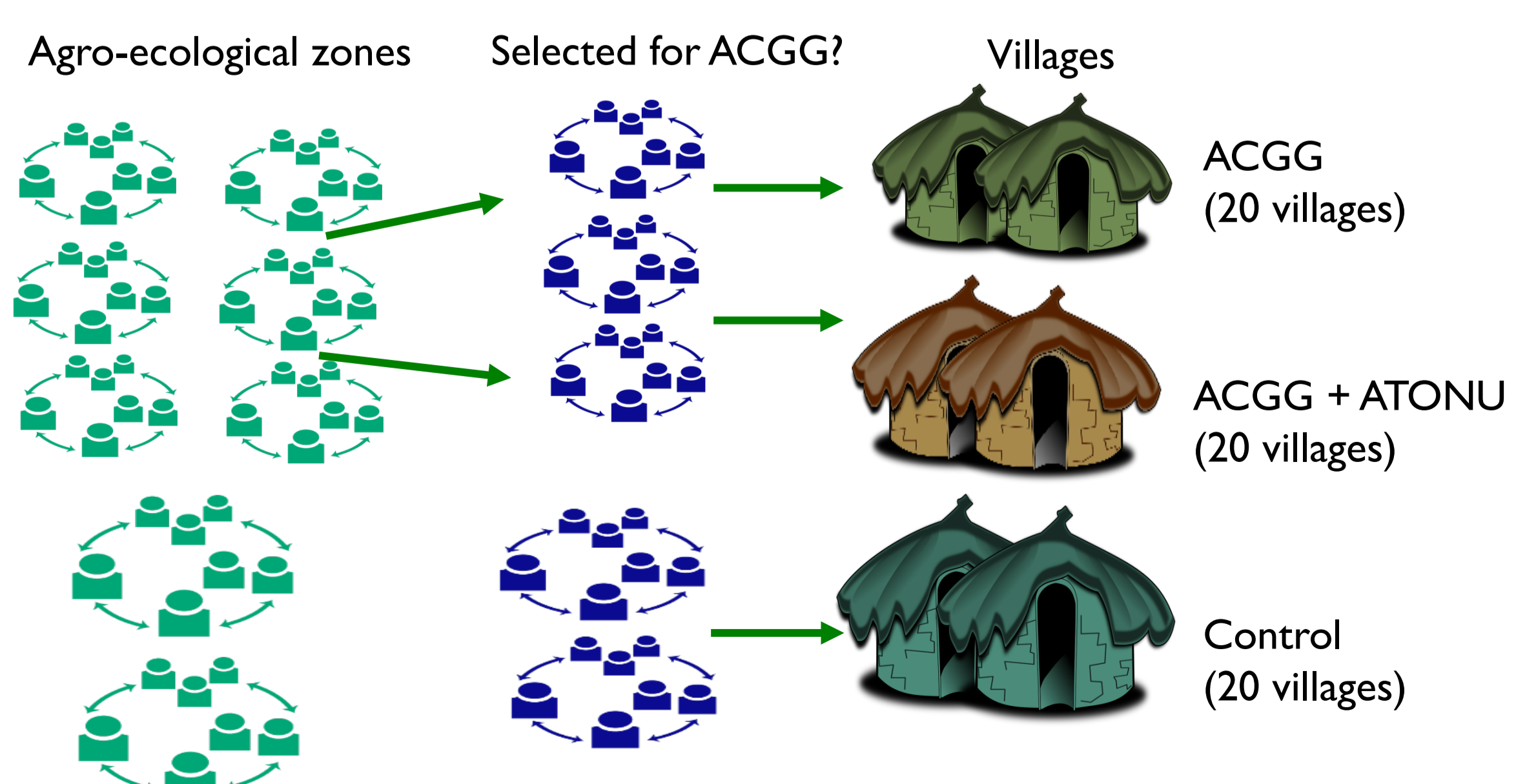


3. Methodology

This study is using a cluster randomized design to evaluate the impact of the package of NSIs. ACGG implementation villages were randomly selected in the program's target areas. Twenty villages from four regions and three zones in Ethiopia and Tanzania, respectively, were randomly allocated to each of the two intervention arms of either ACGG's intervention (chickens) alone, or both chickens and ATONU's nutrition-sensitive intervention (NSI) package. A comparable group of 20 villages in each country was randomly selected from the same sampling frame to serve as a control group, resulting in a three-arm study (Figure 1).

Dietary diversity was assessed using two methods: (i) 24-hour dietary recall, and (ii) food frequency. Growth parameters were measured using standard anthropometric tools, while anemia was determined from hemoglobin levels in whole blood samples using HemoCue 201 machines.

Sampling of Villages



4. Highlights of Baseline Results

Impact area	Variable	Ethiopia	Tanzania
Nutrition Knowledge	Proportion of women accessing information on nutrition and health	80%	72%
Dietary Diversity	Children's dietary diversity score (CDDS) (i.e. using 8 food groups)	2.7 food groups (sd 1.4)	-
	Women's dietary diversity score (WDDS) (i.e. using 10 food groups): 24hr recall	2.7 food groups (sd 1.1)	-
	Women's dietary diversity score (WDDS) (i.e., using 10 food groups): Food frequency	3.7 food groups (sd 1.6)	-
	Household-WDDS (i.e., using 12 food groups): 24-hour recall	-	3.5 food groups (sd 1.7)
Nutritional Status of Women	Proportion of women with BMI of less than 18.5 kg/m ²	23.7%	3%
Nutritional Status of Children (i.e., prevalence)	Stunting (i.e., height-for-age)	36.6%	42%
	Underweight (i.e., weight-for-height)		27%
	Wasting (i.e., weight-for-age)	5.7%	4%
	Anaemia in children of age 6-59 months (haemoglobin concentration < 11.0 g/dl)	58%	-

5. Conclusion

The results of the studies in the two countries show that there is high malnutrition among women and children in the study population. These populations are highly vulnerable to food and nutrition insecurity and the nutrition-sensitive interventions are correctly targeted. The results will serve as the baseline in the evaluation of the impact of nutrition-sensitive interventions.

NSIs Implementing Partners



Impact Assessment Partners



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