Project Title

Improving Nutrition Outcomes through Optimized Agricultural Investments (ATONU)

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1. Introduction

The African Chicken Genetic Gains –Agriculture to Nutrition (ACGG - ATONU) project is funded by BMGF and implemented in Ethiopia and Tanzania. ATONU is built on ACGG project; which is an ILRI led-project; works with partners and beneficiaries to design and evaluate effective agriculture-tailored nutrition interventions, and advocate for them. Its primary beneficiaries are smallholder farm families in four regional states; Amhara, Tigray, Oromia and Southern Nations Nationalities and peoples' Region in Ethiopia, and in three agricultural Zones; Central zone, Southern Highlands and Eastern zone of Tanzania. The project targets are women of child-bearing age and young children in the first 1000 days of life in rural households, where high nutritional demands of pregnancy, development and early childhood must largely be met through food grown, or income earned, on family farms in both Ethiopia and Tanzania. The project reaches to 1600 households in both countries. A total of 20 villages from each project countries, are randomly allocated to each of the two intervention arms. The two arms in these villages where households do receive are either ACGG's intervention (chickens) alone, or both chickens and ATONU's nutrition-sensitive intervention (NSI) package.

2. ATONU Objectives

2.1 General Objective

To evaluate the impact of integrating nutrition sensitive interventions (NSIs) with a chicken production intervention on maternal and child nutrition in smallholder chicken-producing households in rural Ethiopia.

The ATONU project is providing technical assistance to integrate tailored nutrition interventions into planned and ongoing agricultural investments through

(i) Generating tools and frameworks for diagnosing the opportunities to incorporate tailored nutrition interventions into agriculture investments;
(ii) Offering technical assistance for designing, testing, and rigorously monitoring and evaluating results of the tailored nutrition interventions (proof of concept);
(iii) Documenting best practices and evidence and adding to the agriculture for nutrition knowledge base;
(iv) Advocating for evidence-based decision making at all levels, and
(v) Strengthening African capacity and building a community of practice in agriculture for improved nutrition

These actions will ultimately contribute to both improved agricultural productivity and to the improved nutritional status among rural poor households, in particular among women of child-bearing age and young children in the first 1000 days of life after conception.

3. Target groups

- Smallholder farm families especially women of child-bearing age and young children in the first 1000 days of life after conception,
- Development practitioners responsible for the design, implementation and evaluation of agriculture investments,
- National line ministries (agriculture, finance, economic planning, gender, etc.), and

- Financiers of agricultural projects (government, donors, foundations, NGOs and private sector)

4. The ATONU Approach

The ATONU approach details the research questions that will be addressed, explains the impact pathways and possible tailored nutrition interventions, describes the theory of change, outlines the work packages, describes the ATONU institutional arrangements, describes the inception and feasibility phase, and paints a picture of what the success of the project would look like.

5. Methodology

5.1 Study Design

ACGG_ATONU baseline study used a cluster randomized design to evaluate the two main interventions implemented by ACGG and ATONU: (1) distribution of high-producing chicks to households along with provision of technical input on production ("ACGG"); and (2) a BCC intervention on poultry-specific aspects of nutrition, WASH, women's empowerment, and use of income combined with home gardening ("ATONU"). The clusters are villages and each village was assigned to one of the following treatment arms:

1. ACGG + ATONU
2. ACGG alone
3. Control (no intervention)

As the ACGG Program has already selected its villages, a two-step process is used for the assignment of villages to treatment arms. The ACGG Program is active in the capital, Addis Ababa, and the four major regions of Ethiopia: Amhara, Oromia, Tigray, and the Southern Nations, Nationalities, and Peoples' Region (SNNPR). This study will exclude Addis Ababa to focus on the more rural four major regions. Within ACGG's target regions, zones and districts (known as "Woredas" and districts in Ethiopia and Tanzania respectively) were selected based on certain criteria, such as high levels of poultry production, determined by the program. In each program district, all villages were listed and stratified by agro ecology (highland, mid altitude, or lowland). Some agro ecologies in given districts were excluded if the villages in that agro ecology were deemed sufficiently inaccessible that they would create difficulties in program implementation.

Among the remaining agro ecologies and villages in a given district, three villages were randomly selected to participate in ACGG. If the available villages in a district fell into one agro ecology or predominantly one agro ecology, all three ACGG villages in that district were randomly selected from that agro ecology. If there were two dominant agro ecologies in a district, two villages were randomly selected from the agro ecology represented by a greater number of villages, and one village was randomly selected from the less dominant agro ecology. In rare cases, all three agro ecologies were represented in a given district, and one ACGG village was randomly selected in each agro ecology. In three districts in Tigray, the program made a decision to sample two villages per district rather than three.

The stratification by district, and agro ecology within district, reflects the possibility that characteristics of districts, such as local leadership and quality and accessibility of services, and

agro ecological differences will affect outcomes of interest to the ACGG Program. It is similarly possible that differences among districts and agro ecologies will affect outcomes targeted by ATONU's NSIs. The primary aim of this evaluation is to compare the three treatments given above within the context of areas that would be targeted by a poultry production intervention. This evaluation will therefore work in all 20 ACGG districts in Ethiopia and Tanzania.

The ACGG Program has already selected participating households in each ACGG village. In each such village, the program obtained a list of all households from the village administrative office. Households that raised chickens but had fewer than 50 birds were identified with the assistance of local officials including "development agents" (village-level governmental staff who provide agricultural extension services). Potential participating households were randomly selected from the eligible households on the list. These households were visited and those confirmed as meeting all ACGG eligibility criteria, including documentation of informed consent, were enrolled in ACGG. The same process will be used in control villages to identify households that will participate in this evaluation.

The ACGG Program began disseminating chicks to households in the summer of 2016, and all ACGG households are believed to receive chicks before the end of 2016. ATONU similarly began implementation of its intervention during this period. While the non-ACGG villages will receive no interventions, they will receive standard of care agricultural and health services as are provided in Ethiopia.

5.2 Study Duration

The evaluation will be conducted over 18 months, starting in the 4th quarter of 2016 and with primary data analysis estimated to complete in the 3rd quarter of 2018.

5.3 Study Population

This evaluation is being conducted in all ACGG implementation areas in Ethiopia and Tanzania, which were selected based on ACGG's criteria of geographic diversity, poultry producing capacity, and number of smallholder households producing chicken. Within target households, the evaluation will assess effects of the ACGG and ATONU interventions on household heads, women of reproductive age, and infants and young children under the age of three years.

5.4 Households Inclusion and Exclusion Criteria

In all project villages, households were selected and enrolled into the ACGG program based on history of chicken production for at least two years, keeping of no more than 50 chickens, and willingness to accept, shelter, and feed an additional 25 chickens. We shall maintain the same inclusion criteria for households that will be selected for the control group.

Households in one of the two ACGG treatment arms were eligible for inclusion as they met all of the following criteria:

1. Are participating in the ACGG program
2. Have at least one woman of reproductive age (18-49 years at enrollment)
3. Provide informed consent.

Households in the control arm were also eligible for inclusion as they met all of the following criteria:

1. Meet the criteria for participating in the ACGG program, namely, they have produced chickens for at least two years and are currently keeping no more than 50 chickens with interest to expand production in the future
2. Have at least one woman of reproductive age (18-49 years at enrollment)
3. Provide informed consent.

Households were excluded when they failed to meet any of the criteria listed above.

6. NSIs

The ATONU NSI package comprises three components that are being delivered to participating households:

(i) Behavior change communication (BCC) on nutrition education and hygiene to increase consumption of eggs and chicken meat;
(ii) BCC for women empowerment and to influence income expenditure on other nutrient dense foods; and
(iii) Promotion of home gardens for improved dietary diversity.

7. Outcomes and Impacts of ATONU

The ultimate outcome of ATONU will be an institutionalized agriculture led multi-sectorial approach to addressing malnutrition through agricultural investments in the two focal countries (Ethiopia and Tanzania) that are designed to produce positive nutrition outcomes. The trust built by ATONU between the agriculture and nutrition sectors that will institutionalize a culture of using rigorous data and evidence for improving nutrition outcomes through agriculture investments; resulting in measurable improvements in African households nutritional status with specific reference to women and children. The four work packages will produce the following outcomes:

- Agriculture widely known and accepted as a significant contributor to nutrition outcomes.
- Appropriate nutrition-sensitive agriculture approaches and best practices known and applied within ATONU focal countries.
- Capacity to design and implement nutrition sensitive agriculture investments strengthened.
- Institutional Capacity strengthened.
- Nutrition-sensitive agriculture interventions delivered at a massive scale on a regular basis and in different contexts and geographic locations.
- Robust evidence influencing decision making at household, project/practice and policy levels.
- Increased agricultural productivity and improved nutritional status will happen in tandem.
- ATONU contribution observable at both the household and population level.
- A positive behavior change at all levels: household/farming; project/practice, policy.
- Agriculture-nutrition investments are gender-responsive, culturally-sensitive and ensure environmental sustainability.
- Women's capacity to deliver nutrition outcomes strengthened.
- Evidence from ATONU informs policy processes.

The ATONU consortium recognizes the importance of rigorous research, monitoring, evaluation and learning for generating evidence to guide policy and decision-making and to ensure continuous program improvements. Therefore, ATONU intends to ensure that agricultural investments which intend to have a nutritional impact have a robust evaluation component that will advance knowledge on how to maximize the impact of agricultural investments on nutritional outcomes.

The overall expected impact of ATONU will be the improved nutritional status of smallholder farm families; particularly women of child bearing age and children up to 1000 days in the four focus countries. This will ultimately improve the nutritional status of poor households and smallholder farm families in focal countries. Also, the ATONU project will stimulate agricultural development investments in Ethiopia and Tanzania designed to improve nutritional outcomes, as well as economic outcomes while taking into account social-cultural and environmental factors resulting in reduced stunting and other manifestations of malnutrition.

8. Number of ACGG-ATONU HHs in Ethiopia and Tanzania

As shown in annex A and B, there are 1600 households participating in ACGG-ATONU project in both Ethiopia and Tanzania classified by different agro-ecological zones.

Annex A: Number of ACGG-ATONU HHs and villages in Ethiopia

Regions	District	Village	Agro ecology	Implementation	Number of HHs
Amhara	Banja	Surta	High land	ACGHG + ATONU	40
Amhara	FagetaLekoma	Gafera	High land	ACGHG + ATONU	40
Amhara	Gonder Zuria	Tsionteguaz	Mid altitude	ACGHG + ATONU	40
Amhara	Kalu	021-Arabo	Lowland	ACGHG + ATONU	40
Amhara	South Achefer	Dikuli	Mid Land	ACGHG + ATONU	40
Oromia	AdamiTulu	Anannoo Shishoo	Lowland	ACGHG + ATONU	40
Oromia	BakoTibe	OdaHaro	Lowland	ACGHG + ATONU	40
Oromia	Dano	Bake sirba	Midland	ACGHG + ATONU	40
Oromia	Darolabu	Chafe Hara	Midland	ACGHG + ATONU	40
Oromia	Dugda	Seeraa Waakalee	Lowland	ACGHG + ATONU	40
Oromia	Haramaya	Adele weltaha	Mid land	ACGHG + ATONU	40
SNNPR	Boloso Sore	Gedo homba	Mid altitude	ACGHG + ATONU	40
SNNPR	Dara	Abera Atila	Highland	ACGHG + ATONU	40
SNNPR	Doyo Gena	Gemora Gawada	highland	ACGHG + ATONU	40
SNNPR	Hulbareg	Demeke	Mid altitude	ACGHG + ATONU	40
SNNPR	Meskan	Mekicho	Midaltitude	ACGHG + ATONU	40
Tigray	Kilteawlealo	Mesanu	Midland	ACGHG + ATONU	40
Tigray	Mereb-Lekhe	Mhquan	Lowland	ACGHG + ATONU	40
Tigray	Saharti-Samre	Gijet	Midland	ACGHG + ATONU	40
Tigray	Tahtay-Machew	Hadush-adi	Midland	ACGHG + ATONU	40
Total					800

Annex B: Number of ACGG-ATONU HHs and villages in Tanzania

Zone	Region	District	Implementation	Number of HHs
Southern highlands	Songwe former Mbeya	Ileje	ACGHG + ATONU	40
Southern highlands	Songwe former Mbeya	Ileje	ACGHG + ATONU	40
Southern highlands	Mbeya	Mbeya rural	ACGHG + ATONU	40
Southern highlands	Mbeya	Mbeya rural	ACGHG + ATONU	40
Southern highlands	Njombe	Njombe rural	ACGHG + ATONU	40
Southern highlands	Njombe	Njombe rural	ACGHG + ATONU	40
Southern highlands	Njombe	Wanging'ombe	ACGHG + ATONU	40
Southern highlands	Njombe	Wanging'ombe	ACGHG + ATONU	40
Central semi-arid	Dodoma	Bahi	ACGHG + ATONU	40
Central semi-arid	Dodoma	Bahi	ACGHG + ATONU	40
Central semi-arid	Dodoma	Chamwino	ACGHG + ATONU	40
Central semi-arid	Dodoma	Chamwino	ACGHG + ATONU	40
Central semi-arid	Singida	Iramba	ACGHG + ATONU	40
Central semi-arid	Singida	Iramba	ACGHG + ATONU	40
Central semi-arid	Singida	Manyoni	ACGHG + ATONU	40
Central semi-arid	Singida	Manyoni	ACGHG + ATONU	40
Eastern sub-humid	Morogoro	Kilombero	ACGHG + ATONU	40
Eastern sub-humid	Morogoro	Kilombero	ACGHG + ATONU	40
Eastern sub-humid	Morogoro	Mvomero	ACGHG + ATONU	40
Eastern sub-humid	Morogoro	Mvomero	ACGHG + ATONU	40
Total				800