



Figure 1. A GFC couple with twins discussing nutrition goals to practice in Alhassankurah (West Gonja District). Credit Beatrice Adongo

GROWING Nutritious Foods, GROWING Futures: The first cycle of the gender-transformative integrated climate smart agriculture-nutrition-marketing intervention gets off the ground in Northern Ghana

With the completion of the Project Implementation Plan in October 2022, work setting up the first two-year cycle of GROWING Future Clubs (GFCs) among households with young children in 36 communities began in earnest, focusing first on ensuring agricultural interventions occurred in a timely manner, then nutrition trainings, and getting gender champions in place to initiate gender dialogues at district and local levels. Much is being learned that will inform and improve the integrated intervention by the start of Cycle 2 in December 2023.

Progress Update: November 2022-August 2023

Where are we starting from?

Our baseline survey¹, conducted in 1,800 households across the six project districts in three regions (Northern, Savannah, and North East) in Ghana, confirmed that GROWING operates in communities suffering from a high degree of poverty, food insecurity, poor diet quality, and gender inequity. We prioritized working with households with young children. Households are overwhelmingly male headed (98%), with an average household size of 7.5 members. Approximately every fifth household member (21.5%) lives in a polygamous marriage. Levels of formal education are extremely low, with 89% of the reference women and 77% of household heads attaining only basic education or having no formal education at all. Just 8.7% of households have at least one member with a salaried job. Only 15% are accessing a Village Savings and Loan Association (VSLA) or Self-Help Group and a mere 2.4% have microfinance loans.

These agriculturally dependent households must cope with a short, unimodal growing season, cultivating on average 3.7 hectares. Only 8.6% engaged in dry season irrigated production the previous year. Less than a third (31.7%) are food secure. Dietary diversity is low, with young children only consuming an average of 3.5 of 9 food groups in the 24 hours prior to the interview. Only 14.4% of young children achieved an adequate frequency of intake of vitamin A-rich foods during the week prior to the survey. During the last growing season, only 15% of these households grew any type of sweetpotato, 3.6% grew moringa, 2.3% had papaya, and 1.7% cultivated amaranth. Thus, these four nutritious food crops being promoted by GROWING will truly contribute to diet diversification and improved incomes, with orange-fleshed sweetpotato (OFSP) and papaya being excellent sources of provitamin A in the diet. Given that 56% of households cultivate groundnuts and 62% soybean, promotion of

¹ Data were collected between November 2022 until February 2023; these same households will be visited at endline. Within the six districts, there are 165 Community-based Health Planning and Services (CHPS) zones: 47 were classified as CHPS zones with high irrigation potential and 118 as having low irrigation potential. In each of these two categories, 36 CHPS zones were randomly selected, 18 of which were randomly assigned into a treatment group and 18 into a control group. For each high/low irrigation potential and treatment/control group combination, 180 communities were randomly selected. Within each community, 10 households having mothers with a young child or a pregnant woman were randomly selected from a list of eligible households.

OFSP sweetpotato-legume dishes and rotation schemes can be prioritized. There is a high awareness of the effects of climate change, but knowledge of and adoption of climate-smart agriculture practices is low, with only 8% accessing extension services during the last 12 months.

The main objective of the project is to reduce gender inequity within the home. Using the project Women's Empowerment Index in Agriculture (pro-WEIA) as a key indicator, baseline results indicate that only 13% of women have achieved empowerment, compared to 42% of men. Only 30% of couples have achieved gender parity. The overall pro-WEIA score (ranging from 0 to a high of 1) is 0.55. It should be noted that both women and men achieve a significantly higher level of empowerment in most measures in CHPS zones with higher irrigation potential compared to those in areas with a low irrigation potential. Considerable variation exists between districts concerning the degree of gender inequity. Of particular concern is the Gushegu district, where the pro-WEIA score is only 0.36. Gushegu and East Mamprusi also have the lowest scores on several nutrition indicators.

Clearly, there are no magic bullets to improve nutrition and financial security in such a setting. An integrated approach that addresses agroclimatic, sociocultural, and economic constraints is required.

What do we want to achieve?

The Generating Revenues and Opportunities for Women to Improve Nutrition in Ghana (GROWING) project is an action research project that uses an integrated intervention strategy (Figure 2) and nine innovations to: 1) achieve more equitable and enhanced nutrition, 2) increase control of income by women and youth, and 3) improve support for a more inclusive, gender-equitable, nutritious, climate-smart and resilient food system. By improving the enabling environment, increasing the agency of women, and transforming unequal gender relations, we seek to achieve the **ultimate goal of improved nutritional and financial security of women, youth, and young children in 6 districts** of former Northern Region².

Young children under five years of age, lactating women, and pregnant women are at greatest risk of micronutrient deficiencies. Hence, the direct beneficiaries are 7,560 women of reproductive age (15-49 years) with their children under five years of age and 5,292 men (mostly spouses). There will be three two-year cycles of the integrated intervention: Cycle 1 (2023-2024) reaching 1,080 households; Cycle 2 (2024-2025) reaching 2,160 households, and Cycle 3 (2024-2026) reaching 4,320 households. In each selected community, an average of 30 households will constitute a GROWING Futures Club (GFC), with both the woman and man in the household expected to participate in all components.

In addition, for the marketing component, 12 Healthy Food Connectors--traders selected with community participation--will be trained and supported with financial services for 3 years. Twenty-four urban women will be recruited as

Nutritious Food Corps Agents to sell nutritious foods in 12 urban markets and demonstrate their safe preparation.



Figure 2. Components of the Integrated GROWING approach

There will be substantially strengthening of Ghana Health Service (GHS) personnel and Community-Based Extension Agents (CBEAs) for the agricultural and market components. To create a more enabling environment to transform gender relations and enhance women's access to inputs and services, gender dialogues and trainings will be conducted with religious, local, and government leaders. In addition, we estimate over 15,000 indirect rural household and 40,000 indirect urban consumer beneficiaries.

Any positive evidence generated will be used by advocates encouraging the uptake of the part or all of GROWING integrated approach by government programs and other project investments. The main expected outcomes are positive improvements in the Women's Empowerment in Agriculture Index, gender parity, the diversity of the diet consumed by women and young children, and revenue generated due to the adoption and marketing of climate-resilient nutritious foods and better practices.

How far have we progressed to date?

After conducting formative research during the first six months, the team prepared its Project Implementation Plan which was reviewed by a Technical Working Group and the Steering Committee (October 2022), with the revised document approved by the donor, Global Affairs Canada.

Since October 2022, the focus has been on moving from theory to practice. The first step was to form the 37 GROWING Futures Clubs (GFC) in Cycle 1, explaining first to community leaders then to communities themselves the intent of the intervention and why the focus was on recruiting households with young children—preferably those under two years of age and pregnant women for each GFC. With our strong commitment to learning, a digital registration system was established, not only

² Six districts selected for GROWING intervention from the former northern region now come from three separate regions: Saboba and Gushegu districts in the Northern Region; North Gonja and West Gonja districts in the Savannah Region; Chereponi and East Mamprusi districts in the North East Region.

capturing essential demographic information on the reference woman and man from each household but providing each with a badge containing a QR code to facilitate monitoring actual participation in project trainings and events (Figure 3).



Figure 3. Scanning the QR code on the ID badge of a GFC member in Nasome (Saboba District) on day received amaranth seeds. Credit CIP

In all components, a training of trainers (ToT) approach is being used, where GROWING staff train district-level government personnel and local implementing partners, who in turn train the implementing agents based in the community in step-down trainings. The GROWING staff continue to support and supervise how the community agents implement the trainings.

Agriculture: the CORE circle. Throughout 2022, field trials were conducted to select the varieties to promote. Each GFC selected someone from within their Club, after listening to criteria for selection provided by GROWING, to be their Community-Based Extension Agent (CBEA). Half are women. Each CBEA is trained on all agricultural components, focusing on climate-smart production and post-harvest techniques by District Government Extension Personnel and implementing partners, both of whom have been trained by GROWING extension staff, including use of digital tools that contain additional reference materials and ODK programs for monitoring participation.

As learning by doing is key to the acceptance of technology, a demonstration plot was established within each GFC community. This is the site of practical trainings for GFC members by the CBEAs. The project promotes climate-smart practices, including the use of improved groundnut (SARINUT2) and soybean (Jenguma) varieties, the use of inoculant as a biofertilizer and compost instead of chemical fertilizer for legumes, the same season rotation of groundnuts followed by OFSP in two districts (North Gonja and West Gonja), and soybean-maize intercropping in the remaining districts. Moreover, the project promotes the Storage in Sand, then Sprouting (Triple S) technology³ which is a root-based approach for generating sweetpotato vine cuttings as planting material for the following season.

Crops Research Institute supplied the pre-basic, disease-free cuttings of the OFSP varieties (JanLow and Suyolo). Then three basic seed multipliers were supported with miniscreen houses and training to establish a stock of clean basic OFSP seed and further multiply it (Figure 4).



Figure 4. Planting disease free pre-basic seed in screenhouse of basic seed producer in January 2023. Credit Abdul-Lateef Yakubu

In addition, five district-level vine multipliers (DVMs) had to be properly identified, trained, and supplied with quality starter material⁴. The distribution of cuttings to households of GFC members began in June, and by mid-August 1,131 households had received 300 cuttings each (Figure 5). The Agriculture for Nutrition and Poverty Alleviation (ANPA) nursery was contracted to multiply moringa and papaya seedlings, with each GFC household receiving 3 seedlings of moringa, 2 seedlings of papaya (variety Solo)⁵, and 5 grams of amaranth. Backyard cropping of tree crops (moringa and papaya) and amaranth leaves has been demonstrated.



Figure 5. GFC members receiving their OFSP planting materials. Credit Abdul-Lateef Yakubu

Nutrition: joint goal selection for change. The manual with nine nutrition modules was printed for the implementation of Cycle 1, along with the field tools: laminated cards with the 4 Star Diet for the North; the goal card for decision making, and the counseling card for feeding practices. During this period, two ToT sessions were held for district and regional Nutrition Officers, the first for modules 1-3;

³ In collaboration with AIDData at the College of William and Mary, social diffusion of the Triple S technology will be studied in depth in the Cycle 1 households. The objective is to determine whether differences in how the Triple S technology is introduced, and by whom it is promoted make a difference to uptake. Hence, there were instructions for each community regarding the gender (male/female) and social status (leader, peer) of the CBEA to be selected.

⁴ 3 DVMs received PumpTech climate smart solar-powered irrigation pumps with a subsidy from the German Agency for International Cooperation (GIZ) to enable multiplication during the dry season. These pumps have very low running costs as they do not require fuel and lubricants.

⁵ Challenges were incurred with papaya during the seedling multiplication and hence, the dissemination of papaya was delayed in five GFCs at West Gonja and 1 in Chereponi. The main challenge was that both papaya and moringa seedling transport time was long from the nursery and hence, some did not survive upon arrival.

the second for modules 4-6. Then, step-down trainings were conducted for Community Health Officers (CHO), who subsequently implemented modules 1-3. The first topic was focused on introducing the concept of GFC and why the selected agricultural crops were chosen to improve the diet. The second topic on maternal nutrition for exclusive breastfeeding tested the use of an audio story in the local language. The third topic focused on texture and diversity of food choice when introducing complementary feeding in infants, during which the Healthy Baby Toolkits were introduced (Figure 6). At the end of each session, the mother and father of each household jointly decided which good practice they will implement until the next session, marking it on their goal card (Figure 1). This facilitated approach to getting participants to engage in discussion, instead of just hearing lectures, is new to many CHOs and supervision to reinforce CHO facilitation skills has been critical to date.



Figure 6. Women in Gbangu GFC (North East Region) testing the texture of different porridges using the Healthy Baby Toolkit bowl and spoon. Credit Amos Bukari

Gender Dialogues: local champions in place. After performing an extensive gender and social inclusion analysis in 25 GROWING communities in the six districts in January 2023 and presenting the results at a stakeholders consultative meeting of stakeholders, the resulting feedback was incorporated into the gender strategy. All GROWING staff and implementing partners were trained from 22-24th March 2023 in CARE's Social Action and Analysis (SAA) model, designed to support gender and social barrier norm transformation. The criteria for selecting two gender champions (one woman, one man) in each community were determined, and all 72 were selected by their communities and trained on the gender tools. To date, the facilitation of the first gender dialogue for the GFCs has been implemented by the gender champions. Entitled "Introducing your Partner to the Project", the champions facilitated both women and men to enumerate and then discuss what support they would like to see from their partner. The champions began implementing the second module, on "Envisioning Empowerment: Vision Drawings" in August 2023 (Figure 7). The tool helps communities explore their views towards empowerment, identify key domains for change, and be able to track progress toward their goals during the project—this is in itself an empowering process.

During the formative research period, access to quality land emerged as a major constraint to women's



Figure 7. Facilitator introducing 2nd gender dialogue topic to GFC in Nawari (Chereponi District) Credit Abubakari Alhassan

empowerment. Therefore, a major training in land rights and access was held in each district from 12 June through 6 July 2023. This dialogue between community members, local authorities, project staff and other relevant actors, on gender roles, stereotypes, and customary practices that affect women's land rights and influence livelihoods, resulted in greater understanding. Each community developed an action plan for follow-up.

Financial Services: figuring out the way forward. The intention to use the Village and Loan Savings approach as a way to support GFCs to evolve into income-earning clubs has been complicated by the reality that other organizations had already introduced VSLAs in many of our target communities with varying success. Therefore, resources were first deployed to map out their existence (January); then conduct a "health assessment" to determine whether existing VSLAs function as per their bylaws or not. Furthermore, an evaluation was carried out to check whether existing VSLAs already had sufficient GFC members and could be strengthened, or whether the formation of new VSLAs, composed only of GFC members, was required in a given community. The health assessment was carried out from 29 May to 8th June 2023 on VSLAs with GFC membership (145 of the 198 VSLAs mapped). 84 were found to have "uncertain health condition." Assessment findings are expected in September 2023 and will stipulate the number of new VSLA groups to be formed.

In preparation for the VSLA intervention, 35 project and partner staff members were trained in seven standard VSLA modules; they subsequently delivered step-down training to 37 identified Village Agents (24 men; 13 women), selected by the 36 communities using criteria provided by GROWING.

Income-Earning Opportunities: doing the ground work for sustaining GFCs. The goal is for the GFCs in year 2 of each cycle to become self-sustainable income generating units that will be well-linked to marketing opportunities in 1 of 3 potential areas: a) selling fresh nutritious crops (that is, Farming as a Business Clubs); b) processing OFSP baked or fried products (Agro-processing); or c) rearing cavies (*Cavia porcellus*) for sale and consumption. Considerable prior experience exists in implementing Farmer Field Business Schools (FFBS), with a well-developed toolkit in existence. Therefore, 35 GROWING staff, implementing partners and Department of Agriculture crop officers were trained on FFBS tools from 28 February through 3 March 2023. These marketing and business skills development

tools can be adapted for use in all three income-earning options. More than half of the GFCs will evolve into Farming as Business Clubs. However, the technical approach to be used for the remaining two clubs has to be developed and tested during Cycle 1.

Agro-processing: recipe development and costing. With the support of an expert from Euro-Ingredients Ltd. (EIL), the incorporation of OFSP puree into the main existing processed products, including koose, bofrot, and bread, was carried out with the GROWING food technologist and local agro-processors, with clear economic and quality benefits exhibited when wheat flour is partially substituted (30-50%) with OFSP puree (Figure 8).



Figure 8. Owner of Shekina Bakery Anna Baah Ofori inspecting bread made with OFSP Puree. Credit Jan Low

Manually operated machines were imported and tested to produce puree (*Puree Pro*) or cut roots into chips or crisps (*Cut-a-Chip*) (Figure 9). Training materials are being developed to use with six pilot GFCs (one per district) in the fourth quarter of 2023.



Figure 9. Antonio Magnaghi (EIL) demonstrating how to use the Cut-a-Chip machine. Credit Jan Low

In addition, to facilitate the use of OFSP puree on a larger scale in the major urban market, Tamale, a half-day workshop was held in April 2023 to inform six medium-scale agro-processors about the potential of OFSP puree as a functional ingredient. As a consequence, one local bakery was selected based on their willingness to co-invest with GROWING on developing an OFSP puree factory to have support to develop further a business case for investment before the end of 2023.

Cavy rearing: a potential source of meat and income. There is limited expertise in cavy rearing in Ghana. As a consequence, the GROWING small livestock officer

was sent to study for 3 weeks with an expert in cavy rearing working at the University of Abomey-Calavi in Benin, during which a draft cavy rearing training program was developed and breeding stock sourced to bring to Ghana. Two men with rabbit rearing experience in the Tamale area were engaged to be cavy breeders, producing stock to be supplied to GFCs selected to raise cavies (Figure 10). Later, a third breeder was added in Damango (West Gonja). Breeders received quality cages and training in cavy management. The Beninian stock did not adapt well, and a cavy supplier was identified in Kumasi to obtain locally adapted breeds and increase herds. Regrettably, the reproductive rates of the cavies have been below expectations; there have been significant losses during the rainy season due to pneumonia; and one breeder dropped out after all his cavies and rabbits were stolen. In addition, there was staff turnover on the GROWING side, with a new small livestock officer commencing duties in August 2023.



Figure 10. Cavy breeder Razak Haruna examining his cavies. Credit Jan Low

Market linkage interventions and demand creation activities will begin in the next quarter and will be critical for supporting the evolution into income-generating clubs in year 2.

Coordination. The management team holds internal weekly planning sessions and has initiated quarterly meetings with key stakeholders in each of the three regions. The Technical Working Group meets annually to review progress, and the Project Steering Committee (Figure 11) meets twice a year. The implementation of the communication and knowledge management strategy was initially focused on digital tool development. Increased outreach about project interventions through social media and other means began in August 2023.

What are we learning?

As expected with such a complex intervention, there is a long list of lessons learned from the ongoing intervention which will contribute to improving our approach in Cycle 2. Key lessons include:

1. The participatory facilitated approach used in the nutrition component is quite different for the CHOs from the standard approach, which has required additional reinforcement by the trainers. CHOs, however, appreciate the active engagement of participants in the learning process.

2. With digital monitoring of participation, the drop in men attending nutrition sessions coincided with the onset of the planting season. Discussions ensued as to possible alternate meeting times and engagement with community leaders to address the problem. It is clearly a challenge to align training activities on such diverse topics with the demands of a unimodal production agricultural calendar. The establishment of Cycle 2 GFCs will start in late 2023, so that learning engagements are underway by January 2023, reducing the number of learning sessions during peak periods of the agricultural calendar.
 3. Gender Champions for Cycle 2 should be recruited in a timely manner, so that gender dialogues are initiated prior to the start of the nutrition modules, so that men better understand why their participation in all aspects of the intervention is highly desirable.
 4. Nurseries will be established in each district for the multiplication of papaya and moringa seedlings for subsequent cycles. Establishing a nursery in each district will help minimize transport distance that causes low survival and enable local farmers to get plenty of vigorous seedlings locally.
 5. The challenges in breeding and maintaining cavies have been greater than anticipated. Hence, the experience from working with breeders and pilot GFC cavy groups in Cycle 1 will be carefully assessed to determine whether the cavies will be included as an income-generating option in subsequent cycles.
 6. Coordination of training activities between different sectors is required to avoid overburdening GFCs with multiple training events over a limited period.
- During the next six months, we will engage with selected GFCs in outcome mapping and hold discussions to capture participant feedback on what they hope to achieve through their participation and how the intervention can be improved.



Figure 11. The Project Steering Committee at their first meeting in October 2022. Credit Sherifdeen Abubakari

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