

Final Report: Local Innovations for Nutrition Solutions



Executive summary

Scope of the project

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The Local Innovation Nutrition Solutions (LINS) project aimed to create viable business models to enable the sustainable demand of local nutritious foods in refugee-hosting communities in Uganda. The goal of LINS was to address underlying determinants of malnutrition in refugee children living in Kyaka II and Rhino refugee settlements through the analysis and testing of appropriate small-scale solutions and practices, developed through a human-centered design process. The process aimed to ensure high standards of quality and safety in complementary foods for improved nutrition and associated sustainable business and marketing models.

The intended results were:

1. Identify and test initiatives for increased availability, affordability, and access to local complementary nutritious foods.
2. Identify and test innovative social and behavioural change practices that will improve utilization of nutritious food and encourage better nutrition practices.
3. Identify and support innovative business models that will ensure the sustainable demand and supply of local nutritious foods in the target settlements.

The LINS team launched **The Nutrition Innovation Challenge Fund** with an envelope of up to US\$200,000. 59 expressions of interests were received of which 40 full proposals were developed. After a thorough review and selection process, four pilot projects were piloted in the refugee settlements. These were:

Pilot 1: Vertical and Micro Gardening (Start-up): A vertical farms and micro greens project to increase the availability of vegetables that are high in iron, Vitamin-A and other key micronutrients.

Pilot 2: Welthungerhilfe and CEFORD (International & national NGO): A solar dryer of fruits and vegetables project to promote dietary diversity through increased accessibility of fruits and vegetables throughout the year.

Pilot 3: Afema Ventures (private sector): A project that supported creation and scale up of sustainable and inclusive poultry micro-enterprises through provision of facilities for vaccination, improved access to feeds, and trainings on good practices.

Pilot 4: Gulu University (academia): A product innovation project to test the acceptability of a nutrient dense composite flour consisting of millet, sesame, soy, orange-flesh sweet-potato (OFSP).

Key achievements

Three innovations were assessed as successful and raised the most interest among beneficiaries: the solar dryer project, the OFSP composite flour, and the vertical farms. The solar dryers were valued because of how they improved all-year round access to vegetables and other dry foods; the composite flour was appreciated mostly because it was liked by both children and adults, although its price was considered high by some and remained a deterrent; and the vertical farms raised interest among communities as a good technology for farming on very meagre land plots.

The LINS project has made a significant contribution to the search for local, creative and feasible solutions to nutrition by enhancing access to, and availability of, diverse nutritious food supplements. Even though all the pilots have been small in scale, the three mentioned innovations demonstrated a great potential for feasibility and scalability.

Lessons learned

- Anchoring the private sector to support nutrition and food security in local markets present sustainable local solutions. Intentional efforts to bring them on board must though be put in place as currently the humanitarian space is not a priority for the private sector.
- Ample time for the innovation from ideation, through testing is an imperative.
- Greater localisation is more sustainable with the right partnership mix of NGO, academia and private sector. It is possible to combine knowledge and practice to identify successful interventions.
- Beneficiary contributions are challenging, especially for refugees who have limited disposable incomes to invest in the respective innovation products such as vertical farming, microgreens farming, composite flour production, solar drying and poultry enterprises. Even at microenterprise level, some financial investment is required to kickstart and sustain production and business enterprises.
- Presence of, and regular support to beneficiaries by the innovators is necessary to sustain innovation adoption. Innovations with more innovator support demonstrated more success and high beneficiary interest and commitment.
- Continuous consultation to receive feedback enables iteration of the product to fit the market.
- Embedding micro-enterprise in the design of the intervention ensures sustainability and adoption.

The way forward

The LINS team is currently sourcing for funding to scale the three successful pilots i.e., Gulu University, Vertical & Micro-gardening and Welthungerhilfe & CEFORD, to more beneficiaries within the pilot areas and other regions in Uganda. The team is also identifying opportunities to integrate the innovations into the Save the Children Uganda operations, especially the nutrition programs.

Using the 2023 Uganda Response Innovation Lab Pool-Fund by Save the Children Norway & Save the Children Italy, the following steps will be taken

- Follow up the Gulu University and Welthungerhilfe & CEFORD small enterprises developed during the pilot to provide support to ensure continuity and sustainability of the enterprises.
- Work with the innovators to revise the business models for the humanitarian space following findings from the pilot evaluation.
- Support Gulu University to get Uganda Registration Service Board certification for the porridge.
- Support Gulu University and Welthungerhilfe & CEFORD with branding and packaging for their products.

Background

Addressing food security and malnutrition are priorities within the African Union development agendas in Africa and is specifically in line with the Uganda Nutrition Action Plan that calls for coordinated response from a wide group of actors to address the country's nutrition issues towards attaining the Sustainable Development Goals. The consequences of malnutrition include morbidity and mortality, increased infectious disease burden, and more susceptibility to disease. In addition, children affected by malnutrition during their early life (from conception to 2 years), also face long-term impact on their socio-economic perspective due to poor childhood developmental and cognitive outcomes. Uganda has made some improvements but like the rest of the continent, needs to strengthen efforts to achieve food security and nutrition targets of SDG2 to end hunger, food insecurity and all forms of malnutrition by 2030. In particular, the pace of reduction of chronic malnutrition has been slow.

Although there are effective and proven ways to respond to chronic and acute malnutrition, some of the major limitations include:

- Reliance on distribution of free and imported nutritious foods (corn-soya blend/porridge) to at risk households.
- Reliance on humanitarian funding to enable this type of intervention.
- Reduction of funding flows to Uganda (UNHCR data as of 31 March 2022 shows that interagency partners report receipt of only USD 41 million against the Country Refugee Response Plan, covering 5 percent of the total USD 804 million funding needs for 2022).
- Increasing food prices.

To address these needs, the Uganda Response Innovation Lab (U-RIL) designed the project 'Local Innovation for Nutrition Solutions Project (LINS)', a project U-RIL implemented in partnership with Save the Children with financial support from Innovation Norway. The Response Innovation Lab (RIL) is a global initiative founded by World Vision, Save the Children, Oxfam and Civic to integrate innovation into humanitarian responses. The RIL nurtures partnerships that develop, test, scales, and recognizes locally driven innovations and solutions to context specific challenges or barriers that enable the humanitarian ecosystems to respond to vulnerable populations more effectively and efficiently.

The goal of LINS was to address underlying determinants of malnutrition in refugee children living in Kyaka II and Rhino refugee settlements and surrounding host communities through the analysis and testing of appropriate small-scale solutions and practices developed through a human-centered design process.

The intended results were to:

- Identify and test initiatives for increased availability, affordability, and access to local complementary nutritious foods.
- Identify and test innovative social and behavioural change practices that will improve the utilization of nutritious food and encourage better and more sustainable nutrition practices.
- Identify and support innovative business models that will ensure the sustainable demand and supply of local nutritious food in the target settlements.

The pilot project particularly targeted vulnerable refugee households and Ugandan households in refugee-hosting communities, with children aged 6 to 24 months. The direct beneficiaries were care group members (lead mothers and fathers) from households with children under two years, pregnant or lactating women.

The project was implemented in two settlements of Kyaka II Kyegegwa District, Mukono Zone and Rhino Camp Terego and Madi-Okollo District of West Nile in Mugo, Ofua, Ocea and Siripi Zones. The project duration was two years (January 2021-December 2022) with a no-cost extension of four months up to the end of April 2023.

Project phases

The LINS project had two phases that included:

Phase 1: The innovation-identification phase

Scoping studies: LINS carried out a desk review on the determinants of chronic malnutrition in Kyaka II and Rhino Camp refugee settlements, and a food security Ecosystem mapping. The link to the Nutrition Desk Review, Challenge mapping, Nutrition Ecosystem can be found here: <https://www.responseinnovationlab.com/uganda-local-innovation-for-nutrition-solutions-project>

Challenge mapping: was done through consultations and challenge mapping workshop and validation with the stakeholders (UNHCR, Office of the Prime Minister, Ministry of Health, Refugees, Refugee host community, Save the children nutrition department, INGO and CBOs focussing on nutrition, etc) and 3 challenge statements were developed which were then validated with the stakeholders. These challenge statements were;

- **Nutrition Challenge 1:** How might we enhance positive behavioural change and lead to increased and sustained uptake of good care practices during the first 1,000 days of life?
- **Nutrition Challenge 2:** How might we make it easier and more affordable for families to increase the frequency, diversity and nutritional quality of meals for children under two years?
- **Nutrition Challenge 3:** How might we optimize and stabilize household access to diversified, well preserved and nutrient-rich food for vulnerable households with children below 2 years?

The Nutrition Innovation Challenge Fund (ICF) was launched with an envelope of up to US\$200,000. 59 expressions of interests were received of which 40 full proposals were developed.

During the proposal development phase, the LINS offered a range of resources (readings and interactive activities) to support in the preparation of applications. None of these activities were mandatory to be able to submit an expression of interest but they were strongly recommended. The potential applicants benefited from:

- Information sharing and discussing their ideas with various sector experts.
- Introduction to and linkages with various nutrition ecosystem stakeholders who may be valuable implementing partners.
- Access to sector specific data and information that can guide and facilitate the development of compelling concept notes.

The call was open to:

- All types of legally- registered organisations and companies or individuals
- Single applications or partnerships

Private sector partners and organisations with a strong track record were strongly recommended to apply.

The following selection criteria were used:

- Innovation level of the solution – disruptive innovations favoured.
- Innovative solutions with an existing proof of concept needed (no ideation)
- Nutrition technical excellence and relevance to the challenge statements
- Potential for collaboration with the private sector and use of market forces in long-term strategy
- Judicious use of project resources
- Potential for impact, scaling and sustainability (feasibility and chances of success)

The proposals were reviewed and assessed by experts in fields such as nutrition, food security and innovation. After a competitive selection process, 5 projects were selected for funding under LINS: Vertical & Micro Gardening (VMG), Welthungerhilfe (WHH) & CEFORD, Afema ventures, Gulu University and Health Entrepreneurs.

Phase 2: Testing/ Pilot implementation Phase

This phase included:

- Launch, introduction and presentation of the innovations in Kampala and project locations (Kyaka II and Rhino camp settlements)
- Partner (Innovations) Orientation and capacity building trainings. The partners were oriented on the refugee community, expectations, design of the pilots, etc. They were also trained on safeguarding, MEAL and Intellectual Property which is a training package that RIL provides to the innovators.
- Recruitment and assignment of requisite staff. Due to the unique cases of the partners, Save the children processes were reviewed on case-by-case basis considering extent of the partner fitting the Save the Children contracting requirements CEFORD was contracted as a sub-award, the rest had service contracts that were implemented as performance-based contracts.
- Joint stakeholder monitoring and convener meetings.
- Pilot implementation of the innovations.

An external evaluation of the LINS project was conducted in early 2023. The results and findings from this evaluation is highlighted throughout this report.

The LINS Pilots

Pilot 1 – Vertical & Micro Gardening (Startup)

VMG is a social enterprise that primarily designs, manufactures, and distributes vertical farms and implements associated vertical farming interventions in land-constrained settings, urban, and recently, refugee settlements.

The objective of VMG's pilot was to provide technical trainings on better vertical farming practices in both Rhino camp & Kyaka II Refugee settlement through a vertical farms and micro greens project to increase the availability of vegetables that are high in iron, Vitamin-A and other key micronutrients. During pilot implementation, VMG constructed vertical gardens and provided microgreens seeds.

Vertical gardens are vertically stacked trays of soil which take up only 1m-by-1m of space but can support the growth of 84-200 plants. Vertical farms ensure space utilisation, water efficiency, self-regenerative vermicompost organic fertiliser and are suitable to urban and other population-dense settings including refugee settlements where families live on small plots of land.

VMG simultaneously promoted the production of microgreens which are young vegetables, usually harvested at the seedling stage of growth. These are thought to be more nutritious than fully grown vegetables and can be harvested every 7-21 days, thus supporting consistent, efficient nutrient intake.

The innovation received **US\$87,510** including 6% withholding tax. The initial contract was for US\$45,110 but following the need to redesign a new product and expand the pilot to a second refugee settlement, their contract was amended with an increase in the amount. This was accommodated by the expense funds from the Health Entrepreneurs team as they could not proceed with their pilot.

Results for end-users and project specific lessons learned

Beneficiaries were given vertical gardens and trained on how to grow the microgreens and other vegetables in the vertical gardens, as well as how to cook them so they maintain their nutritional value. VMG developed a new model of the vertical farm made of more locally available materials. During the pilot phase, they reached 150 parents (135 women and 15 men) from 10 Care Groups in both Rhino camp and Kyaka II refugee settlements.

By the end of the pilot:

- 60 vertical gardens were installed; 30 in Kyaka II (75 beneficiary families) and 30 in Rhino Camp (75 beneficiary families)
- 10 show-cased vertical farms were installed (5 in Kyaka II and 5 in Rhino Camp) in open accessible locations (health facilities) for communities to visit and learn.
- At mass production, 50 Vertical Farms (VFs) were provided. 5 VFs were provided to each of the 10 Care Groups i.e., 25 VFs in Kyaka II & 25 VFs in Rhino Camp
- Microgreens farming starter kits were distributed. (450 trays kits were provided; 225 in Kyaka II & 225 in Rhino Camp; 3 trays to each of the 150 families supported. Kits included trays, seeds and hand sprayers.
- VMG also trained 150 beneficiaries (75 in Kyaka II and 75 in Rhino Camp) in vertical and microgreens farming. The firm also distributed microgreens growing starter packs, including trays, seeds, and hand sprayers to the beneficiaries for the initial trial production and consumption of microgreens. All beneficiaries were also given cooking lessons to learn how to prepare the microgreens for consumption, for the optimisation of nutritional value, especially for children of 6-23 months, and pregnant and lactating women.
- Families used revenue from the harvested yield to pay off first vertical farm units and they progressively build potential to acquire additional units

At the introduction of the vertical farms project, the VMG team realized that the cost of the existing vertical farm models was unaffordable and unsustainable for refugees. VMG was therefore requested to design a modified, more affordable vertical farm model, developed through a co-creation process in consultation with and with participation of the beneficiary communities. The vertical farm modification aimed to considerably reduce the cost of the vertical garden and to leverage using materials locally available in the project locations. This would make it not only more affordable to the refugee and host communities but also more convenient to create. Two prototypes were developed, followed by two full-scale versions of the locally adapted vertical garden that were completed in March 2023. The new model VF took up a greater part of the project time, eating into many other activities. Mass production

and installation of 50 vertical gardens (25 in Kyaka II and 25 in Rhino Camp) was completed in the two settlements in April 2023.



The pre-existing VG model 1.0.



The new model VG – developed with the participation of LINS project beneficiaries; using materials locally available in project locations; and is relatively cheaper.

The vertical farms hold a big potential for refugees to increase production in small spaces both for consumption and income. But as reported by the beneficiaries, access to seeds is bound to be one of the key challenges to the vigorous adoption of vertical farming and microgreens. For further scale-up is important that VMG and partners develop appropriate models for enabling beneficiaries to access seeds and other inputs such as organic fertilisers. Promoting research in local seeds for microgreens and partnership with seed suppliers could enhance easier, cost-friendly access to seeds in the case of microgreens and vertical farming, where seeds are nonregenerative.

The microgreens were acceptable to the communities. At the time of the evaluation, no assessment had been done to empirically ascertain the uptake of microgreens and levels of consumption. However, from a general observation, the microgreens were being consumed. Some households had even started drying and blending the microgreens in their porridge. The participants of the focus-group discussions (female) in Kyaka confirmed they were eating the microgreens.



The VMG pilot did not specifically factor tracking the level of production of both vertical farm and microgreens harvests by households and/or groups, which would have provided more reliable indication of the level of access to specific types of vegetables and other foods grown with the technologies. There is need to introduce harvest registers and weighing scales, to enable the farmers, especially at household level, to keep track of harvest volumes. This would help in monitoring the general performance of the farming systems, and consumption levels of related food products.

Pilot 2 – Welthungerhilfe and CEFORD (International & national NGO)

This pilot was a solar dryer of fruits and vegetables project to promote dietary diversity in Rhino Camp Refugee Settlement through increased accessibility of fruits and vegetables throughout the year to improve micronutrient intake. WHH and CEFORD constructed solar dryers so vegetables could be dried, stored, and eaten even during the dry season. These dryers can withstand the harsh sun's rays for up to five years, help to reduce micronutrient loss during drying and are more hygienic than local methods of drying. The team partnered with Jakana Foods, a private business that deals in drying fruits and vegetables for markets in Uganda and out of Uganda. Jakana Foods constructed the solar driers and trained beneficiaries in good practices of drying fruits and vegetables.



Women in Rhino settlement packaging dried vegetables and other foods for sale

Pilot design:

- Procurement and distribution of Seeds and Seedlings. Seven categories of seeds were procured and distributed; sweet potatoes vines, onions, tomatoes, okra, cowpeas, eggplants, and Jute mallow.
- Solar dryer construction and Installation with the expertise of Jakana Foods Limited, 11 solar dryers were installed in Rhino camp.
- Procurement and distribution of assorted packaging and storage material
- Training of Trainers (ToT) training in Solar drying. 15 staff (7 from WHH and 8 from CEFORD) attended a ToT on solar drying that was conducted by Jakana Foods Ltd.
- Beneficiary trainings in good agronomic practices, post-harvest handling, solar drying, maintenance, packaging, and marketing training, business and marketing techniques.

The team received **US\$50,210** including the 6% withholding tax.

Results for end-users and project specific lessons learned

Beneficiaries were taught how to grow different vegetables and explored market linkages so that they were able to sell their surplus dried products. During the pilot phase they reached 75 beneficiary parents (60 women and 15 men) from five Care Groups in Rhino camp and supported them to construct high quality solar dryers. The surplus dried products was sold to other community members. Project participants from each group had accumulated revenue of about UGX 200,000.

By end of the pilot:

- Percentage of households that have improved minimum acceptable diet for children 6-23 months increased from 11% at baseline to 28%
- % of women of reproductive age (or aged 15-49 years) in the target area consuming at least 5 food groups increased from 5% at baseline to 22%,
- # of households/participants who started preserving food items using solar dryers: 88 of 75 target

- # of Village Savings and Loans Associations (VSLA) group members (male/female) who increased their savings: 71 of 75 targeted
- # of participants trained in VSLA: 73 of 75 targeted
- No of months households were able to access vegetables in a year: 8 months of 9 months targeted
- % of households stating that preserved food items were consumed by their household during the dry season: 92.9% increasing from 54% at baseline
- Number of people received trainings on maternal, infant and young child nutrition: 105 of 75 targeted
- # of households/participants that sold preserved products: 74 of 75 targeted

The solar drying technology sparked beneficiaries' business interest, and they reported a ready market for all their products, especially during the dry season when households run out of fresh harvests.

The groups expressed high inspiration and prospects to utilize and protect the solar dryers, and were craving for more dryers, reporting that the two in their respective areas were already very few, and often filled up during green harvests.

The solar drying had motivated group members to grow diverse vegetables individually and collectively, assured that the surplus harvest would not go to waste. The women group members in Siripi zone in Rhino were, for example, growing cassava, doodo, cowpeas, eggplants, okra, jute mallow, potatoes, sukuma wiki, yams, which they dried with the solar dryers.

Neighbours of the direct beneficiaries also dried their vegetables in the solar driers, increasing the competition for drying foods. For a pilot phase, this is a 'positive challenge' that signifies an opportunity for scale.

Compared to the other innovators, WHH/CEFORD had the highest host community reach under the innovation. The innovator deliberately targeted the host community, where 21 of the 75 direct beneficiaries (28%) were nationals.

Pilot 3 – Afema Ventures (private sector)

Afema Ventures is a private Ugandan enterprise established in 2018 engaged in the sustainable production of nutritious foods and improving the nutritional value of existing products for Bottom of the Pyramid markets by developing resilient supply chains.

The project supported creation and scale up of sustainable and inclusive poultry micro-enterprises through provision of facilities for vaccination, improved access to feeds, and trainings on good practices. A total of 148 chicken were distributed to 74 households with each beneficiary receiving one pullet and a cock. The households accessed improved technologies to produce local chicken, including vaccines, feeds, and knowledge on poultry management practices thus enhancing local poultry for better nutritional outcomes for children under two years in Rhino camp. Afema ventures was also an off-taker and aggregator for products from the beneficiaries.

A feed mill and cold chain were installed at the Afema Venture production facility in Arua City. This was supposed to be installed within the settlements to allow for accessibility of the beneficiaries. Bicycles and vaccine carriers were procured for the community facilitators to carry out the chicken vaccination exercises as they got vaccines delivered to them from Arua City.

The team received **US\$50,213** including 6% withholding tax.



Beneficiary identification and chicken distribution in Rhino camp

Results for end-users and project specific lessons learned

Beneficiaries were trained on good chicken rearing practices. Promoted use of improved local poultry production technologies leading to improved household income generation.

By end of the pilot:

- 10 of the 74 households achieved a flock size of at least 30 chickens with a starting stock of a pullet and a cock.
- High chicken mortality: It was reported that most of the chickens died –and that Afema Ventures provided very limited support to the beneficiaries. Of the 37 beneficiary members interviewed during the external evaluation, all had received the chicken, but only four reported having both chicken surviving; seven beneficiaries still had one surviving, while the others (26) reported having lost both chickens. This means that 59 of the 74 chicken (80%) received by 37 beneficiaries died.

This innovation did not inspire scaling given that most of the chickens died. The recommendation is to identify the causes of the death, which may include households eating the chicken, but the beneficiary households reported that the pilot failed due to lack of timely support from Afema Ventures including availing the vaccines. Moreover, Afema Ventures installed the vaccine facility in Arua town rather than in the settlements itself, which led to a long travel distance for the beneficiaries which again may have resulted in chickens not getting vaccinated. This may have caused the death of most of the birds. The chicken multiplication scale in the pilot phase could not allow attestable microenterprise setups, despite the clear potential of chicken rearing to achieve the aspiration. Beneficiaries said the innovation did not work as designed, and they largely blamed the innovator for being absent in the field to regularly follow up and support beneficiaries as necessary.

Pilot 4 – Gulu University (Academia) application of millet-sesame-soya-OFSP composite

This pilot was a product innovation in Rhino Camp Refugee settlement to test the acceptability of a nutrient dense composite flour (millet, sesame, soy, orange-flesh sweet-potato (OFSP)). Project participants were trained on production and processing in addition to market linkages for sustainability. Since low-nutrient maize flour porridge is a common food for many refugees, Gulu University scientifically developed a nutrient dense formula for an alternative flour that is higher in iron and Vitamin A.

- The flour is nutrient dense as it is processed for nutrient retention and bioavailability. It has high energy, proteins, essential fatty acids and micronutrients leading to prolonged consumption for energy-protein balance that improves growth, and the bioavailable nutrients improve intake.
- The flour mimicked already preferred cereal-based composite food using local materials and local processing.

The team received **US\$52,723** inclusive of the 6% withholding tax.



Results for end-users and project specific lessons learned

Beneficiaries were trained on how to make, package, and store the composite flour for consumption. Beneficiaries were also taught business skills so they could start small enterprises selling the flour. During the pilot they managed to reach 86 parents (62 mothers and 24 fathers) from six Care Groups.

By the end of the pilot:

- 86 parents were trained on composite production.
- 94% of the beneficiaries reported to be able to process the flour on their own and could also train others on how to process the flour.
- We registered 20% local businesses dealing in this flour as a result of the business trainings and making an income.
- 50 households (100%) reported satisfaction with the inclusion of the composite in their diet.

The composite standard packaging was 500g and 1kg packs, sold at UGX 2,500-3,000 and UGX 5,000-6,000 respectively. However, these prices were considered too high by some of the buyers. In order to address this issue and stimulate sales, some of the groups started selling the product in small units and not packed, e.g., by the cup or by the spoon. These smaller amounts could be afforded by many refugee households, compared to the larger packs.

An assessment by the innovator showed that all the beneficiary households were feeding their children with the composite porridge. The exact number of children had not been recorded by the time of the evaluation, but caregivers of children who were fed on it reported that their children had very much liked it. While the beneficiary respondents reported that the composite was being fed to children, pregnant women, and breastfeeding mothers, a deeper inquiry into the issue, and responses related to consumption of the composite revealed that the quantities that had been produced by the time of this evaluation, did not support the claim of the beneficiaries that children were regularly eating the composite. Production was still low, with each group reporting having produced about 30-40kgs, yet part of these quantities was sold. Therefore, although the composite had been liked by children and adults alike and was in high demand, its availability was still limited.

The evaluation team found that the MISESO-OFSP composite flour had great potential for nutritional supplementation and business enterprise development at the household and group level. Six beneficiary care groups were already trading in the composite product and making some modest income at the time of the evaluation. Although the number of local businesses dealing in MISESO-OFSP composite in Rhino camp at the time of the evaluation was only 20%, the innovator indicated that this was mainly due to the timeframe of the project, as the time was too short to allow a reasonable rollout beyond the care groups. As such, the businesses had remained at care group level.

Gulu University has followed up with the groups and found that all the groups had sold out the composite flour stocks. Some groups had re-invested the profit in their businesses, while others had put what they earned in the VSLA, for group members to borrow at low-interest rates. However, the businesses were still at formative stage and had not opened up to individual community members beyond the care groups.

The beneficiaries' attestations collectively confirmed the desirability of the composite flour. If widely produced and circulated in adequate quantities and regularity, the composite will be easier and more affordable for families to increase nutritional diversity and quality at the household level.

Pilot 5- Health Entrepreneurs

This project was not successfully piloted following the realisation that the proposed model was not feasible in the refugee settlement. The pilot intended to provide last-mile basic health through micro-entrepreneurs for refugee settlements through empowering Micro Entrepreneurs to deliver effective and affordable health products and services to hard to reach and remote areas to combat malnutrition in Kyaka II settlement. At project inception, the team realised that the service that the micro-entrepreneurs were going to provide was already provided by the government and health partners at no cost and this would create conflict and low uptake of the innovation.

The team received refund for the work they were able to do.

LINS pilot results and Impact

Overall impact

Overall beneficiary reached was 397 direct beneficiaries and 5,955 indirectly reached, following the logic that each of the lead mothers and lead fathers in the care groups is attached to 15 neighbour parents (households) to mobilize and sensitize them about the project, nutrition child caring practices, and related issues. The pilot reached more female beneficiaries in care groups (74%), than male beneficiaries (26%).

Innovator	Target: direct beneficiaries	Reached	Percentage	Reached (by sex)	
				Female	Male
VMG	100	86	86%	62	24
Welthungerhilfe & CEFFORD	60	150	250%	120	30
Afema Ventures	75	88	117%	60	15
Gulu University	90	73	81%	52	22
Total	325	397	122%	294	91

The grand majority of the beneficiaries reached were refugees. The innovators reached a total of 23 host community (nationals) direct beneficiaries (19 females and 4 males) in the care groups. These were covered by two innovators — WHH/CEFOR (21) and Afema Ventures (2).

Throughout the project process, the LINS engaged stakeholders at different levels - from the beneficiaries/users to institutional partners in the humanitarian response to support the various aspects of the project.

Key LINS project achievements

An external evaluation of the LINS project was conducted in March 2023. Below are findings of key achievements found through this evaluation:

- Each of the innovations integrated a business component, whereby the beneficiary groups and individuals would be trained on the business logic of the innovation, including the start-up process, production processes, profit determination, packaging, marketing, record keeping and other aspects. All the innovators integrated business training and supporting groups with start-up kits for trial microenterprise set up. This was intended to enable the group members to increase their incomes from the sale of the produce, to enhance livelihood security and resilience.
- Many groups were steadily building business microenterprises around the innovations. The women groups in Rhino camp were, for example, drying, packaging dry vegetables, greens and other foods and selling them in the local markets, by the roadside displays and household points of sale. Some of the beneficiaries reported having generated some modest incomes, which they had used to afford other foods and family care needs like school fees, clothing etc. From the sale proceeds, some beneficiaries had acquired home assets such as goats and chicken which they hoped to raise for additional income and improved nutrition.
- The LINS project has made a significant contribution to the search for local, creative and feasible solutions to nutrition by enhancing access to, and availability of, diverse nutritious food supplements. Even though all the pilots have been small in scale, three of them (MISESO-OFSP composite, vertical farming and solar drying) demonstrated a great potential for feasibility and scalability.
- The beneficiary communities showed very high interest in the innovations. Three innovations raised the most interest: the solar dryers, the MISESO-OFSP composite flour, and the vertical farms. The solar dryers were valued because of how they improved all-year round access to vegetables and other dry foods; the composite flour was appreciated mostly because it was liked by both children and adults, although its price was considered high by some and remained a deterrent; and the vertical farms raised interest among communities as a good technology for farming on very meagre land plots.
- Improvements in nutrition are not possible without changes in the day-to-day behaviours of people, even if policies may exist. The LINS project considered interventions for social behavioural change as part of the approaches to addressing the immediate and underlying causes of

malnutrition. The project is, for example, bridging the cultural practices and beliefs on nutrition and childcare by promoting the acceptability of hitherto unknown foods such as certain unknown species of microgreens, and food preservation practices such as consuming dry fruits and vegetables.

- Through the solar drying of vegetables, fruits, and other foods, for example, the project has instilled an expanded consciousness among the care group beneficiaries and their neighbours that it is possible to preserve and reserve food for rainy days.
- Through embedded education, awareness creation and training, the beneficiaries have been able to appreciate and embrace proper nutrition for children and pregnant and breastfeeding women at their household level. This, as acknowledged by many respondents, was increasingly contributing to healthy children and mothers.

General challenges

- Delays led to short pilot implementation time minimising process lesson capture and opportunity for monitoring, iterating and piloting. This limited the opportunity for roll-out of business enterprise start-up beyond the care groups for Gulu University and VMG.
- Distant zones, and bad roads made it hard for the innovators to engage the beneficiaries more frequently. The nutrition officers brought on board supported more frequent review of the pilots as they were based in the region.
- Over dependency on free aid by beneficiaries rather than sustainable business models limited the general uptake of the innovation.
- Community time and effort for better nutrition: The innovators reported some difficulty in initiating and sustaining community time and effort in nutrition promotion activities. This was addressed through intensive stakeholder and community mobilization.
- Pests and diseases: Pests and diseases affecting the chicken and crop farming which can be addressed by promoting integrated bio-safety and pest management practices that will be provided during training and sensitization activities.
- Unreliable weather and climate change: Unreliable weather patterns and dependence on rain-fed agriculture which can be addressed by promoting appropriate climate-smart agricultural technologies.
- Activity timing: Delay by innovators to implement planned activities e.g., chicken came after 3 months of constructing chicken houses by care group members.
- The culture of aid and dependency: Most refugees are used to aid and depend on food and other household necessities from donors. This inevitably affects their attitude towards the project, given that they believe that all project inputs have to be provided by the project funders. Any project with a theory of change that underlines cost-sharing is hardly embraced. Over dependency on free aid by beneficiaries rather than sustainable business models limited the general uptake of the innovation.
- Tracking nutrition changes: No baseline was done specifically for LINS to generate statistical evidence and baselines for tracking. Nutritional impact is hard to ascertain on the account of a single intervention. Nutrition is also influenced by behavioural patterns which should be tracked through systematic surveys and data-driven approaches.

Lesson learned during project period

Anchoring the private sector to support nutrition and food security in local markets. The LINS project exemplifies the significance of integration across the NGO, private sector and academia in finding sustainable solutions to nutrition. The pilot has demonstrated that an intentional effort to strengthening cooperation among various sector players realises feasible propositions that can be modelled to

effectively offer solutions to challenges at hand. There are vital pathways for leveraging in the partnership including problem-solution innovation, capacity building, farmer organisation, and creating and strengthening agricultural market linkages for enhanced farmer incomes and improved livelihood.

Harmonization of cooperation principles among cross-sectoral partners is necessary. The LINS experience has so far shown that some partners have at some points felt unfairly overstretched by the accountability policies and expectations under the project, and there were concerns of some partners not living up to the accountability and value expectations. This underlines the pertinence of clarifying and harmonising values, principles, roles and expectations that should guide such an intricate relationship and cooperation. Policies that enhance mutual accountabilities for all parties while driving project goals and the shared good in serving communities ought to be defined and democratically scrutinised and agreed upon beforehand.

The relationship and working principles between NGOs and the private sector are often varied and call for keen scrutiny and intelligible definition of cooperation principles, processes and procedures that compel accountability and a shared good. There must be a logical meeting point between not just the profit motive but an underlying interest of private sector partners to advance business interests, and the NGO charity motive to contribute to community development. Moreover, the dependency of refugee communities on aid and relief handouts (a lifestyle partly created by the NGOs) impairs innovations, and makes business viability remarkably complex, from a business perspective.

Ample timing for innovation, from ideation to testing, is an imperative: Development and testing of innovations can sometimes take a while. Innovation is a multi-stage process, and ought to be human centred for the innovations to suit and serve the needs of the intended users. Much as the LINS project was keen on calling for innovations that had proof of concept, a number of modifications were suggested to some of the innovations to make them suit the project purpose. For VMG, for example, the innovator had to redraw the Vertical Farm conceptualisation, typically going over the entire innovation journey from ideation to implementation. Relatedly, the time for implementing the LINS innovations proved quite short to allow evidence-based impact of the innovations on chronic malnutrition, even if at household scale. In addition, more time and training sessions should be given to beneficiaries to increase knowledge acquisition and transfer.

Stakeholder engagement and collaboration. The actors in the nutrition and food security sector are numerous, operating at local and international level, at various scales, and with distinct yet complementary focus. Most of the nutrition actors may not work in the private sector, but private sector actors, if rightly engaged, offer great opportunities for innovation, technology and financial marshalling. It is therefore vital to explore and engage diverse, multi-level and multi-sectoral stakeholders for collaboration and partnership in the nutrition and food security sector. Stronger coordination is important, but more important is collaboration and partnership that enable leveraging comparative advantages and capacities and cross learning.

Social behavioural and mindset change. It is vital to continuously tune the communities' minds, especially the refugees, away from the culture of relief, handouts, and over expectation, which aren't sustainable, with messages and influencing towards more secure and sustainable livelihood options.

Greater localisation is more sustainable: The LINS project has offered immense insights into the localisation of solutions for nutrition pointing to the fact that with the right partnership mix of NGOs, academia and private sector, it is possible to combine knowledge and practice (experience) to find successful interventions for nutrition within a local context. This holds stronger long-term results and is more sustainable than looking up to solutions overseas.

Presence of, and regular support to beneficiaries by innovators is necessary to sustain the innovations in the project locations. The innovations where innovators kept more connected with beneficiaries demonstrated the possibility of more success and with high beneficiary interest and commitment. The partners need to factor this and the associated cost implications in any planned scaling arrangements.

Mapping of and linking to the existing nutrition interventions and identifying opportunities and pathways for leveraging the supply of seeds and other complementarities remains critical for the success of the project. The desk review conducted to inform the LINS project revealed the existence of several initiatives for nutrition and food security in the project locations and wider refugee settlements. Many of the interventions had been or were being implemented as pilots. A potential LINS project scaling should practically link to such initiatives to identify opportunities and pathways for complementarity, harmonization, resource optimization and wider and deeper impact for improved nutrition outcomes.

Subsidies for bigger uptake of innovation products. Beneficiary contributions are challenging, especially for refugees who have limited disposable incomes to invest in the respective innovation products such as vertical farming, microgreens farming, composite flour production, solar drying and poultry enterprises. Even at microenterprise level, some financial investment is required to kickstart and sustain production and business enterprises. RIL/Save the Children and innovators should work out arrangements for subsidizing products, or other equally creative ways such as hire purchase that would increase beneficiary uptake of the innovations. VMG had taken this up, with a financing model piloted in Kyaka II to enable beneficiaries access seeds on credit, and 29 out of 45 sampled families had already accessed seeds through this arrangement. Such a model could also cover access to and ownership of vertical farms.

Higher and stronger involvement of the host community is key. In terms of leveraging the opportunities that come with the host communities including building peace and social cohesion, strengthening local market linkages, access to bigger land for increased and more sustainable production, it was necessary that the host community is equally covered under the pilot. At possible scale, it will be vital to widen the scope of host community coverage.

Harnessing the micro enterprise potential of the pilots is pertinent. All the pilots embedded a micro enterprise development component, but this had not been solidly ingrained by the close of the pilot. Micro enterprise is so much more than generating income for food and clothing. It restores dignity and self-respect and empowers people. This component requires continuous nurture, through training for knowledge and skills, provision of business start-up kits and other support, while progressively ensuring that the beneficiaries contribute to their own business progression, which would make them more responsible and accountable. Stronger market linkages and improved marketing skills and strategies such as better packaging and product presentation will be necessary, especially if the micro entrepreneurs will look up to markets beyond their localities.

Private sector collaboration experience and lessons learned

LINS had meaningful and sustainable engagement with the private sector: Private sector collaboration is not common with NGOs though efforts are ongoing to change that. It may require an exclusive or limited relationship, binding the NGO to certain loyalties and limiting available support from other agencies and/or corporations. The LINS project promoted a stronger interplay among NGOs and the private sector in the continued search for local solutions to nutrition challenges. The private sector's involvement in nutrition-centered innovations and other interventions are still limited. Most nutrition sector actors do not work in the private sector, but rather in academia, research or programs. Yet, the interaction across the various domains is pertinent to leverage comparative roles and advantages such as funding, research and wider innovation for local solutions to the challenges at hand.

Private sector actors in nutrition were included in the actor and challenge mapping exercise. The call for innovations was open to private sector and they were highly encouraged to apply. At the proposal stage, we had 37% of the applications coming from private sector (startup and larger enterprises). For the final selected innovations 2 out of 5 were private sector (VMG and Afema ventures). But all the 5 innovations were building entrepreneurial skills for the beneficiaries to build small enterprises.

The RIL/Save the Children supported the LINS partners (innovators) to link to a range of partners in the nutrition ecosystem. This positions the partners to leverage diverse relationships, and mutual interdependence to support existing and future initiatives. The private sector partners had hitherto not had any experience operating in humanitarian (refugee) settings, and the LINS partnership helped link them not only to the innovation ecosystem but also to the humanitarian response terrain, on-the-ground presence and the existing nutrition programmes of Save the Children in the project locations.

During the mapping and initial engagement of the private sector innovators, there was a lack of an overall understanding of the humanitarian space for example the government guidelines, the affordability, the humanitarian stakeholders, guidelines doing business etc as they had not piloted within this space before. Afema ventures had been in Arua town and VMG in Kampala and the districts around the capital city. As previously mentioned, VMG had to design a new model that was less costly and put into account a different business model from what they were doing where they would loan the vertical gardens, micro greens trays and seeds to the beneficiaries who would then pay back in instalment after selling the vegetables. Following the pilot VMG has been able to design a vertical garden product that is more cost friendly for the refugee and host community.

There is need to design business models that would ensure sustainability and profitability of the private sector as private sector is designed to make profit.

Other private sector partners collaborated with included Jakana Foods who the solar drier team engaged with to build the solar driers, train beneficiaries on solar drying and provide market for the dried fruits and vegetables. Other partners included academia (Gulu University), Government (Office of the Prime Minister) to ensure ownership and adaptability of scalable interventions within the government system, and UNHCR that leads most of the refugee operations in Uganda.

Dissemination of knowledge and lessons learned to promote adoption of the innovation within the organisation and outside the organisation

A dissemination event (hybrid) was conducted in May 2023 to share the lessons across all stakeholders in the nutrition ecosystem including partners, donors, humanitarian actors, nutrition actors, health actors, and innovators. The report including the findings and lessons learnt will be shared via email to all the ecosystem actors that will be extracted from the RIL ecosystem map and those that have been engaged throughout the project. The Report will also be uploaded to the RIL website for access by anyone interested as all RIL work is public good that can be accessed and used by the public.

Other sources of financing than Innovation Norway

While the LINS project itself did not have other sources of financing, the core team of the Response Innovation Lab is regularly funded by different donors. During the project period 2022, these included DANIDA through Save the Children Denmark (£65,989), the Norwegian Ministry of Foreign Affairs through save the children Norway (£29,333) and Save the Children Italy (£200,000) unrestricted funds. In connection to the LINS project, the core team of the RIL was responsible for providing trainings in safeguarding, Intellectual property and MEAL (Monitoring, Evaluation, Accountability and Learning). The MEAL tools were shared with the innovators and 1:1 support was given to fill the tools and monitor the projects performance. In addition to this, the LINS project benefitted from the support from Save the

Children nutrition officers and community-based facilitators in Kyaka II and Rhino refugee settlements. Lastly, core RIL activities that benefitted the LINS project included trainings, providing technical assistance and conducting clinics with the innovators, monthly conveners that included Community of Practice. The project used the RIL ecosystem map to identify stakeholders to engage throughout the project.

Recommendations for further work

Scaling: There is need to scale the three successful interventions, building on the proven potential and promise of the groundbreaking innovations. This is on the backdrop that chronic malnutrition is a persistent challenge with lifetime consequences if not timely addressed. The demand for, and consumption of nutritious foods, including vegetables, in the settlements and host communities is high, and there is a proven market for communities not only to sell the excess production, but also deliberately target commercial production. This requires sourcing for funding to expand, replicate and advance the LINS initiatives.

Support the business enterprise development component of the LINS project. By end of the pilot, the business microenterprise element had not been well established, yet it is integral in facilitating access to diversified nutritious foods, resulting from increased household income. There is need to deliver support in further business capacity building, including strategic and operational advisory in running the businesses developed through the LINS pilot, setting up new businesses, coaching, and mentoring to enhance household, individual and group business management skills. Such business support needs for beneficiaries could embed provision of start-up seeds, production of raw materials, milling machines and operational seed capital, and incubation services to support self-sustaining operations.

Harness linkages across the innovators to enhance the comparative advantages and complementarities. At scale, consideration could be made to situate all the innovations in same geo-locations to enable the interplay of the synergies.

Technical capacity support and strengthening: Technical support supervision is critical and should be adequately integrated in the project design. There should be continuous capacity building of staff and other partners on the innovations to avert misconceptions and better equip them for the scale up of the project and innovations.

Strengthen the Monitoring, Evaluation, Learning and Accountability (MEAL) and Business Development of the innovators. The innovators were trained on the RIL MEAL toolkit and were able to use the tools to track progress of the results. There is need to strengthen the innovators understanding of data driven results and impact tracking. There is need to develop a database to keep track of all the activities undertaken and results realized by partners for better programming and reporting. The project should generate and use data to inform all interventions.

Strengthening marketing and linkages: For the scaling we will consider integrating marketing and linkages to ensure market availability for the surplus.

Strengthening host community involvement: The Ugandan government' recommendation is that for every intervention in the refugee community, it should have 30% of the host community benefitting. This was not met during the pilot and should be prioritised through the scaling.

NGO-private sector partnership and interplay: Redefine and strengthen cooperation principles, policies, and value systems to enhance mutual accountability and effective partnership. Putting in place clear growth / scale guidelines for the successful growth of the project is vital. This requires harmonization and strengthening of NGO and private sector partnership policies and engagement principles. Clearly and better conceptualize an appropriate business model that supports business viability while promoting public interest services. For VMG for instance, proper business planning that integrates corporate, non-profit clients such as NGOs is crucial.

Support initiatives that enable large scale production, such as block farming, where smallholder households come together to cultivate the land and are supported with assorted technical services such as training, inputs and extension services to enhance inclusive advancement of LINS products, including commercial vertical and microgreens farming. Block farming is a high investment venture but would support fast tracked commercial availability of the products.

Water harvesting and storage should be prioritized through the introduction of water-saving technologies to make water available for irrigation and all-season farming.

Invest in research for continuous product improvement, quality and safety enhancement and taking improving locally available products and materials in innovations for cost-effectiveness, higher buy-in and acceptability.

Project specific plans going forward

Gulu university

- Scale up through increasing the number of beneficiaries in the pilot sites. We have included the innovation in several nutrition proposals that we have submitted to donors with a hope to scale the innovation to more beneficiaries in 2024.
- Invest in research for continuous products improvement, quality and safety enhancement.
- Scale up by empowering Gulu University with approvals, packaging and branding to sell the porridge to communities that need it. Gulu university is already supplying this porridge for consumption in the Save the Children Korea funded Karamoja hunger project. The support to Gulu university is funded by the RIL PoolFund (Save the Children (SC) Norway & SC Italy).

Vertical and Micro-gardening

- Pilot the new design in the current sites. This is going to be supported by U-RIL PoolFund.
- The project has also been included in several applications for scale to more beneficiaries in 2024.

Welthungerhilfe and CEFORD

- Design and test a new model for household solar driers, and pilot following strong feedback on having individual owned solar driers to avoid the competition for space during time of high production, and ensure accountability and maintenance. We will support the team to write proposals for funding.

Afema Venture

- Following unresponsiveness of the innovator and lack of timely collaboration throughout the pilot, we are unable to continue supporting them. The pilot results were also poor following the lack of team commitment to the key activities and iterations done without the LINS team engagement. As mentioned, the team installed the vaccine facility in Arua town instead of at the settlements which would have been in close access of the beneficiaries. This can have caused the lack of vaccines leading to death of most of the birds.

RIL will provide business development support to Gulu University, VMG and Welthungerhilfe & CEFORD together with the innovators to design viable business models for the humanitarian space. We have included the next plans for the innovations in our scale up applications across donors like World Food Program, Kumwe hub, etc.

RIL/Save the Children wanted to submit proposal for the HIP scaling but were unable to get the match private sector funding. We continue to engage the private sector for funding and hope that we will be able to apply for the scaling fund next year.

Review of risk factors

In the proposal the following risk factors were identified:

1. The Covid-19 pandemics, preventative measures & global dynamics, compromise partners' ability to conduct the planned activities.
2. The inherent risk of failure during the design of an innovation project & disinterest of potential stakeholders.
3. Communal clashes in the settlements, new displacement waves.
4. Risk of corruption and fraud in different forms
5. The project requires a social behavioural change from participants
6. Unintended harm to beneficiaries and safeguarding breach

The following mitigation measures were employed during implementation:

1. All the Government and WHO C19 guidance was followed during the challenge mapping period. By the time the pilots launched, the pandemic had stabilized. The needs assessment and market dialogue work were done mostly remotely. For in-person work, adequate social distancing, handwashing, and mask-wearing measures were enforced.

There was an Ebola outbreak that affected one of the regions (Nakivale settlement- Kyaka II) of the pilot. Mainly VMG was affected as it is the only innovation that piloted in this settlement. As a business, some of the raw materials for their products were sourced from Mubende and Kassanda areas that were lockdown due to the massive Ebola cases there. Therefore, the lockdown was a blow for VMG as they were just recovering from coronavirus lockdowns and struggling with rising inflation. The travel restrictions also meant that VMG team could not travel to Kyaka II to implement the project in time. In the same sense, the restrictions on community gatherings hindered VMG from conducting community trainings yet the project was tied to a group [Care Group] Model. This situation delayed key project activities.

2. Through using human-centred design, stakeholder mapping and involvement, and challenge mapping we mitigated the risk of developing an innovation that does not respond to the local circumstances. The Ecosystem mapping and convene function ensured the right participants were engaged from academia, the private sector, beneficiaries (refugees and host communities) etc.
3. The project engaged with leaders at all levels to ensure that a high level of acceptance and peaceful refugee/host community relations were maintained.
4. RIL conducted the SC fraud and corruption training to the key stakeholders at the start of this project. No case was reported.

5. Regular consultations and design-thinking principles were applied to the design and implementation of the project. A specific Social Behavioural Change Communication (SBCC) project took place in the region led by Save the Children, which will mitigate the risk of participants' lack of adoption.
6. The operations were mindful of possible protection risks to beneficiaries, including safeguarding risks, possible threats to physical security, exposure to gender-based violence, and risk of inter-community tensions. Training and contractual agreements ensured Do No Harm principles were considered. There were open channels where the participants and partners would get in touch with the LINS team and the team would follow up. For example, when Afema ventures was not paying his agents, they sent LINS and email. LINS collaborated with the field teams so they would let the field office know what was going on and if there were any issues.
7. In addition, the VMG project was using herbicide instead of insecticides thus making the project environmentally friendly.

Good governance

There was a risk of corruption and fraud in different forms, from the various actors. All partners followed a clear anticorruption policy with zero tolerance to corruption. Save the Children has rigorous mechanisms and policies to prevent, mitigate, and respond to any suspected issues of corruption or fraud or other financial mismanagement. All partners selected for the procurement of a service or seed funding went through a standard partnership assessment and a legal vetting process to ensure they have sound procedures and the adequate capacity in place for delivery.

After the selection process, training was provided on humanitarian innovation ethics, on Core Humanitarian Standards and Safeguarding, Code of Conduct, PSEA to ensure Do No Harm for the communities that will participate in the pilots. SC/RIL cascaded its fraud and safeguarding policy through contractual engagement to partners and conducted verifications. Staff at Afema venture did not receive salaries and reached out to RIL and reported the case which was cascaded using the policy guidelines. There were open reporting channels which made it easy and safe for all stakeholders to report.

Sustainable development

Sustainability is the central focus of the LINS project as its objective is to create localized, economically viable enterprises that can support nutritional outcomes, thus breaking with the practice of aid-funded nutritional supplements distributed to children that are already at risk of malnutrition. It proposes instead to tackle the issue at its root, focusing on the prevention of malnutrition by improving diets and practices in the refugee and host communities. Good nutrition in the early years of life is pivotal in breaking the intergenerational trap of hunger-poverty and supporting the next generation in reaching their full potential, thus contributing broadly to development objectives for the target population.

The participants in the local production initiatives received both business management and technical training to operate social enterprises. This is still work in progress and needs further support to anchor the businesses developed from the project.

The project mainly contributed to SDG 3 (good health and well-being), SDG2 (zero hunger), and SDG 1 (no poverty) and has an angle supporting SDG 5 (equal rights) and SDG 17 (partnership). The initiative also tackled several Human rights, primarily article 25 on equal rights to a standard of living adequate for health and well-being and a contribution to the right to work (article 21) through the creation of market-based livelihood opportunities.

Gender equality

Save the Children works extensively in refugee-hosting communities. These strong relationships were leveraged to identify participants based on their vulnerability and desire to become entrepreneurs for nutritious foods and agents of change in their community. The main entry point in the community was SC-supported nutrition care groups targeting caregivers a majority of whom are women as child-care, and food-preparation remain largely a female responsibility amongst Ugandans and refugees.

A gender sensitive approach was applied to ensure men were also engaged and supportive of the innovations as better outcomes are achieved when several household members endorse it. Nonetheless, it should be noted that a large proportion of refugees are women and often cut-off from business opportunities, so the project targeted mainly women and supported their empowerment as caregivers and entrepreneurs. Save the Children's expertise in gender equality ensured that gender was properly mainstreamed, and the entire project was designed in a gender-sensitive approach. Key bottlenecks and barriers that the project addressed include the negative cultural beliefs and practices that deny female opportunities. Regarding the innovators that were selected all were male led enterprises but comprising of at least one female member but, encouragement to female-led enterprises was done to join the ideation and application process.