Market Systems Development in Crop Food Systems

Food & nutrition security

Systems Approach

Partnership / locally led

Adaptive management

Nutritionally Improved & Climate Adapted Seeds, Low-cost Storage Technology & Access to Markets for Smallholder Farmers in Zinder, Niger.

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UNCDF unitlife SAVING THE NEXT GENERATION

مبادرات محمد بن راشد آل مكتوم العالمية
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Irish Aid
An Roinn Gnóthaí Eachtracha agus Trádála
Department of Foreign Affairs and Trade

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Brief background

The purpose of the project is to increase food & nutrition security for rural and food insecure communities in Zinder Region of Niger, by reducing the prevalence of chronic malnutrition through agricultural innovations that are gender and nutrition-sensitive and climate smart in 30 rural villages (2025 target) in Mirriah and Gouré Areas.

The project is supported by Mohammed Bin Rashid Al Maktoum Global Initiatives through UNITLIFE and Irish Aid using GOAL's Systems for Resilient Food & Nutrition Security (S4Nut) approach. This project brief focuses on the Market Systems Development Component of the S4Nut framework and the work to strengthen crop food systems where GOAL partners with local private sector companies to create sustainable and scalable change.

Target area

The work within crop systems targets the whole of the Zinder Region. Mirriah and Gouré Areas are a particular focus for the other elements of the S4Nut.

Context

Small-scale producers are the backbone of local food security, providing about 80% of all food consumed in low–middle income countries. These farmers also represent the majority of chronically hungry families. About two-thirds of people who experience food insecurity live in rural areas and are smallholders, often unable to produce enough to feed their own household[1]. In Niger, millet, cowpea and ground nut yields are <25% of ideal yields[2] and post-harvest losses range from 15 – 35%. We know that if women farmers had the same access to productive resources as men, they could increase yields by 20–30%[3].

In Niger, approximately 80% of the population relies on agriculture for their food security, and about 11.5% are acutely food insecure, 47% of children <5 years are chronically malnourished and almost half of all women of reproductive age are anaemic (WFP 2024).

In 2021 in Zinder, GOAL conducted a rapid market assessment to identify the constraints and opportunities to increase food and nutrition security. The following is a very high-level summary of how poorly the system is functioning, further undermined by the context specific risks, which include drought, floods and outbreak of human disease.

Inputs: Poor functionality of the input systems, particularly to the last mile for quality agricultural inputs. Free & intermittent Gov't & NGO inputs create dis-incentives for the private sector to invest in a sustainable retail system. No inclusive business models were observed between different market actors, nor access to input financing or quality assurance. Communities create little demand for improved inputs.
Production: Production is bi-modal, rain-fed, low use of technology and where only donor-funded government extension exists for small-scale farmers.
Storage: Poor-quality low-cost storage is available but only along key transport routes.
Value addition: only very basic value addition and little or no use of basic mechanization.
Aggregation and off-taking: Buyers are opportunistic; they do not invest in production nor aggregation of commodities and therefore access to markets is difficult for hard-to-reach small-scale farmers.

[1] Lowder et al, 2016 The Number, Size, and Distribution of Farms, Smallholder Farms, and Family Farms Worldwide,
[2] Niger - Global yield gap atlas
[3] WFP, March 2021 Empowering women and girls is crucial to ensure sustainable food security in the aftermath of COVID-19

Approach

S4Nut is GOAL's key approach to Resilient Food & Nutrition Security. It is a framework to increase access to, availability and consumption of nutritious food using three evidence-based approaches.

1. A **Market Systems Development** (MSD) approach for increased food production and availability, and the protection and regeneration of natural resources critical to the identified food system.
2. A number of **Social Behaviour Change** (SBC) methodologies to improve consumption of nutritious food, identify and prevent malnutrition and influence social and gender norms, and
3. **Financial inclusion** to increase people's access to food, their investment in their livelihoods, and resilience to shocks.

S4Nut is a **risk informed** systems approach to increase food & nutrition security, **protect natural resources** critical to food systems and contribute to **women's socio-economic empowerment**.

Local Partnerships

GOAL partners with three local private sector companies to create sustainable and scalable change in the crop food system. They are **FESA** and **AINOMA** who are multipliers and wholesalers of nutritionally improved and climate adapted millet, groundnuts and cowpea seeds, they work with a network of retailers to extend access to improved inputs for hard-to-reach small scale farmers in the Zinder Region. **Abdul Azizou** is also a wholesaler and retailer of improved staple crops and additionally vegetable seed, organic fertilizer and low-cost storage bags. Adbul Azizou also works with a network of retailers to sell inputs and aggregate commodities for off-taking, providing small-scale farmers with access to markets.

GOAL and our partners collaborate with **INRAN** (Niger Agronomic Research Institute) who supply the improved parent seed for multiplication and with local government through the **Ministry of Agriculture** in Zinder for skill training and quality assurance.

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Results

In the Zinder Region, between 2021 and 2025:

123.6 Tons Large quantity of **nutritionally improved and climate adapted seeds purchased by farmers.** Millet (improved with Iron and Zinc), Groundnut & Cowpea, vitamin A maize as well as 321,440 Orange Flesh Sweat Potato cuttings purchased by small scale farmers

134% A substantial increase in production of **Millet** when compared to local varieties

194% A very substantial increase in production of **Groundnuts** when compared to local varieties

172% A substantial increase in production of **Cowpeas** when compared to local varieties

2.5 Tons A large quantity of **vegetable seeds** (cabbage, carrot, okra and moringa), purchased by small scale farmers

1,749 Liters Of **organic fertilizer** purchased by small scale farmers (introduced in 2024), demonstrating demand for commercial organic fertilizer

95% Of small-scale food producers keep 75% and more of their production for household food security.

227,721 Low-cost (PICS) **storage bags** bought by small holder farmers to reduce food loss, estimated to be approx. 30% for staple crops.

68 Tons of **food was prevented from being lost** to damage from pests. PICS bags reduce fungal growth and aflatoxin contamination, preventing food loss and improving food safety.

516.5 Tons Small amounts of staple crops aggregated and bought (2022 - 2025) from small holder producers by a buyer, providing a road to market for smallholder farmers.

Madame Haoua Mahamana, Small Scale Farmer, Guidimouni Village, Zinder, May 2025, Photographer: Abdourahmane Maazou, RTN Zinder

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Results (2021 - 2025)

Year	2021	2022	2023	2024	2025	2026	2027	Total
Number of private sector partners	1	2	3	3	2***			**3**
Nutritionally improved & climate adapted millet, groundnut & cowpea seed sold to farmers and % off/ smart subsidy	22.5 Tons 50%	15 Tons 40%	31.4 Tons 30%	25.7 Tons 0%	21.3 Tons 10%	0%	0%	**115.9 Tons**
Donor resources used to finance the smart subsidy for improved millet, g-nut & cowpea seed	$23,004 (UNITLIFE)	$19,189 (UNITLIFE)	$15,219 (UNITLIFE)	Zero (break in funding)	$9,728			**$67,140**
Cost comparison if directly delivered (only procurement cost considered for illustrative purposes only)	~$46, 008	~$47,972	~$50,730	~$51,000	~$53,800			**~$249,510**
Increase in production, when compared to local varieties: Improved **Millet**	183%	216%	No data	223%	134%			**134%**
Improved **Groundnut**	187%	137%	No data	247%	194%			**194%**
Improved **Cowpeas**	242%	257%	No data	174%	172%			**172%**
% of farmers who kept 75% or more of **production for HH consumption**	87%	73%	76%	72%	95%			**95%**
Vegetable seed sold to farmers and % off smart subsidy	57Kg 50% (F&M)	389Kgs 40% (only F)	659Kgs 30% (only F)	685Kgs 20% (F&M)	765Kgs 10% (F&M)			**2,555 Kgs**
% vegetable seeds bought by women	30%	89%	78%	24%	23%			
Donor resources used to finance the smart subsidy for veg. seed	$7,037 (UNITLIFE)	$6,910 (UNITLIFE)	$11,654 (Irish Aid)	$12 121 (UNITLIFE)	$7,338			**$45,060**
Organic liquid fertilizer sold to farmers and % off / smart subsidy	Introduced in 2024			744 Liters 20%	1,005 Liters 10%			**1,749 Liters**
Nutritionally improved (vit A) maize sold to small scale farmers and % smart subsidy	Introduced in 2025				7,715 Kgs (50%)			**7.7 Tons**
Nutritionally improved OFSP sold to small scale farmers and % off/smart subsidy	Introduced in 2025				321,440 cuttings (50%)			**321,440**
Donor resources used to finance the smart subsidy for improved maize and OFSP	Introduced in 2025				€12,005			**€12,005**
Low-cost storage bags PICS sold to farmers & % / off smart subsidy	27,000 (20% F only)	50,150 (0%)	31,271 (0%)	49,203 (0%)	70,300 (0%)			**227,721**
Donor resources used to finance the smart subsidy	$7,800	$0	$0	$0	$0			**$7,800**
Staple crops off taking	Commenced in 2022	306 Tons	46 Tons*	61 Tons**	115 Tons			**528 tons**
Donor resources used to catalyze off-taking	As above	$13,537	$0	$0	$0			**$13,537**

* Production less than in 2022 a direct result of rainfall timing & variability, so less available for the market.

** Government of Niger purchasing directly from farmers at higher than the market price, for national stock

*** Less one private sector partner who is struggling to remain in business due to a large unpaid gov. bill for seed

Key Findings

In Niger, climate events are impacting negatively on already poor crop yields. Low yields and food loss not only contribute to food and nutrition insecurity but also to Green House Gas (GHG) emissions. **If yields were increased and food loss reduced, there would be more food but not more GHG emissions**.

1. **Nutritionally improved and climate adapted seeds increase the nutritional value of what people eat as well as the amount of food produced** between 134% and 194% when compared to local varieties.

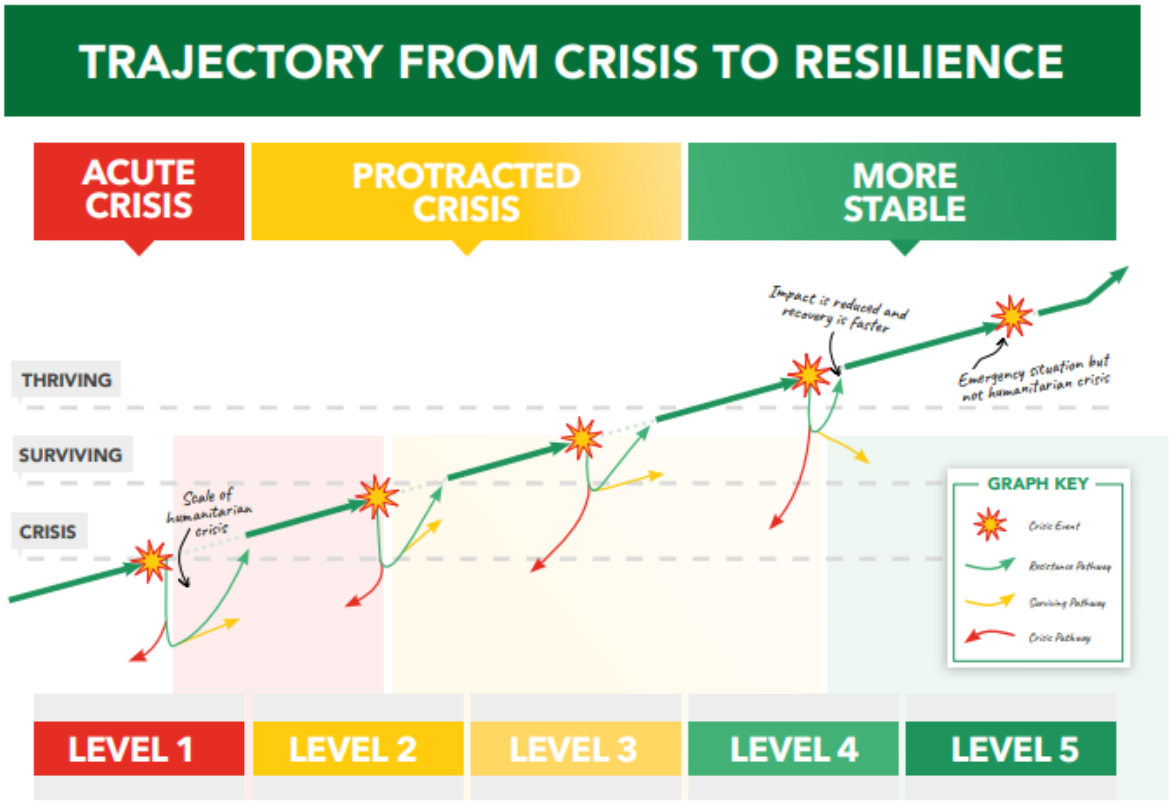
2. **Smart subsidies are an effective marketing tool to increase demand for improved inputs while strengthening the sustainable supply chain and utilizing donor resources to reach greater scale** and benefit many more people.

3. **A small investment ($7,800) made to catalyze the supply of low-cost food storage bags that reduce food loss, has created substantial demand and represents an extremely good return on investment of donor resources**. The sale of more than 227thousand hermetic food storage bags has required $0.03 of donor resources per bag with an increasing return on investment as more bags are sold. Peer reviewed studies show that grain stored in PICS bags experience near zero losses at 6 – 12 months, maintaining grain quality and seed viability. It is estimated that 227 tons of food was prevented from being lost to damage from pests. PICS bags reduce fungal growth and aflatoxin contamination, preventing food loss and improving food safety.

4. **Increasing the reach of the formal seed system in Zinder will have an increasingly positive knock-on effect in the informal seed system**. As more improved seeds are purchased, planted, saved and shared, nutritionally improved and climate adapted seeds will begin to circulate in the informal seed system, improving the nutritional value of food grown by more small-scale producers.

Biofortified millet under production, Guidiguir Village, Goure, Zinder, 2023, GOAL

GOAL delivers a wide range of humanitarian and development programmes, with a focus on systems, partnerships and building resilience.



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