



## Nutrition-sensitive Farmer Field Schools in Kenya's Kalobeyei settlement

Developing the capacity of refugees and host communities to produce, process and consume nutritious food in Turkana County

### Context

Agriculture is the main livelihood for the majority of Kenyans, contributing 26 percent of the Gross Domestic Product (GDP). In rural areas, more than 70 percent of informal employment comes from agriculture. However, in the Arid and Semi-Arid Lands (ASALs), recurring droughts and erratic weather patterns have resulted in low productivity, food shortages and price increases, presenting significant roadblocks to nutrition.

Despite progress in recent years, one in every four children under five years old (26 percent of children) in Kenya is impacted by chronic malnutrition, while acute child malnutrition rates remain high in the ASALs. A 2019 nutrition survey in Turkana County, located along the Ugandan border in northwest Kenya, found wasting rates that reached 25.6 percent of children under five. Decades of food assistance have helped prevent famine in these areas, but without sufficiently strengthening local food systems.

Displacement and conflict have further exacerbated malnutrition and food insecurity. Kenya is host to 494 585 refugees and asylum seekers, mainly from South Sudan and Somalia. Among those, 186 000 live in Turkana County, for the most part divided between Kakuma refugee camp and Kalobeyei settlement, which is also home to refugees from Burundi, the Democratic Republic of the Congo and Rwanda.

Interventions focusing solely on increasing agricultural production have not necessarily translated to improved nutrition or diet. Against that backdrop, the Food and Agriculture Organization of the United Nations (FAO) has promoted nutrition-sensitive Farmer Field Schools (FFS) providing community-facilitated training sessions on crop production and livestock, with additional one-month nutrition modules on producing, processing, preserving and culinary preparation of foods with a high-nutrient content.

### Key facts



#### Geographic coverage

Turkana County, Kenya



Conforms to UN Kenya map, December 2011



#### Target group

Refugees and host communities



#### Food system components

Food supply chains, including production, handling and storage, trade and marketing; consumer behaviour and diets



#### Gender

Uses a gender-sensitive value chain approach, ensuring women can access credit; use of Minimum Dietary Diversity for Women (MDD-W) as the key indicator.

## What are the Farmer Field Schools (FFS) and how can they be modified to include nutrition-sensitive trainings?

Farmer Field Schools (FFS) build on farmers' existing knowledge of agricultural production using hands-on, participatory and experiential farming activities led by community facilitators in a field-based setting.

In Turkana County, FFS were made nutrition-sensitive using:

- Nutrition outcome indicators looking at the quality of diets;
- A focus on production of food with a high nutrition value, such as pulses, eggs and vegetables, and;
- Nutrition training to help households understand how they could use increased food production and income to improve diets and prevent malnutrition.

### Methodological approach

Kalobeyei settlement was inaugurated in 2016 as an alternative to traditional refugee encampment, predicated on self-reliance and access to livelihoods, homegrown entrepreneurship, and household vegetable cultivation. Whereas Kakuma refugee camp provided free meals and services based on a model of temporary humanitarian aid, nearby Kalobeyei emphasized longer-term livelihood opportunities and integrated support for both refugees and host communities.

#### The “Trainers of Farmers (ToFs)” system

FAO promoted FFS facilitated by Trainers of Farmers (ToFs) who, where possible, were government extension workers from the Ministry of Agriculture (MoA) or community health workers from the Ministry of Health. Different community-based facilitators were trained primarily in crop production, in some areas also in livestock production. In cases where community-based facilitators were used they were given basic training and supported by the extension officers from the County Government. Fifteen community facilitators were trained specifically in nutrition.



A trainer of farmers guides the refugee community on the preparation of an enriched snack.

Practical training sessions included groups of 15-30 farmers, who underwent intensive month-long sessions involving practical, hands-on demonstrations on household vegetable cultivation (i.e. kitchen gardening), preservation of fruits and vegetables to build resilience during seasonal spikes in scarcity, and preparation of nutrient-rich meals based on locally available resources.

#### Adapting a specialized nutrition module

The context-specific FFS training module was tailored to Turkana County, designed in consultation with local farmers to build upon existing knowledge of agricultural methods. Each farmer-trainer was then assigned two groups to train per month, with each group being taken through four topics total.



A trainer of farmers demonstrates simple techniques for drying vegetables.

The four target topics identified were:

- **Introduction**

The first module focused on the nutritional benefits of the foods being produced as a complement to more conventional trainings in increased agricultural production and commercialization.

- **Food preservation, storage, sanitation and hygiene**

The second training module emphasized safe methods to produce and preserve foods with important nutritional value, without exposing stored goods to contaminants. It incorporated post-harvest handling, storage, reduction and management of food loss and waste as well as food quality, safety and hygiene.

- **Meal planning and developing value-added recipes using locally available foods**

Practical, experiential culinary demonstrations promoted the consumption of traditional, drought-resistant crops such as sorghum or cowpeas, with the intention of making them more palatable to local communities (e.g. demonstrating how to make a cake from sorghum flour).

- **Complementary feeding**

Through participatory demonstrations, nutrition education regarding young children and nursing mothers was provided to households, with a particular focus on infants aged six to 23 months, with the aim to prevent stunting.

### **Food supply chains: production, handling and storage, trade and marketing**

Participants were trained on how to establish vegetable gardens and provided with seeds to grow a variety of fruits, vegetables and pulses. Where water access was limited, participants were advised to use wastewater. Diversification and sustainable intensification of agricultural production was encouraged through training on conservation agriculture, with beneficiaries educated on the benefits of crop rotation and diversifying crops. This aimed to increase household consumption of nutritious foods and support income generation through the sale of any surplus, as well as increase biodiversity for food and nutrition.

Provision of and training on the use of communal solar driers supported increased availability of fruits and vegetables in the lean season. To further enhance beneficiaries' ability to improve the nutrient content of foods available and to earn income from their produce, the training also included recipes and methods for value addition (where products were improved both in terms of the price, and also its nutrition content) as well as marketing and business skills. Some of the nutritious food items that produced value added included eggs, pulses, tomato jam, sorghum mandazi mango juice, green gram doughnuts and dried cowpea leaves.



## Impacts

- **Reduced acute malnutrition rates**

In Kalobeyei settlement, which practices encampment policies, rates of acute malnutrition were found to be six percent, versus 11 percent in nearby camps that practice settlement policies, such as Kakuma refugee camp. Nutrition indicators in Kalobeyei were better overall than in Kakuma.

- **Heightened awareness of safe food handling**

The nutrition module's focus on food handling has led to an observable difference in behaviour in regard to food hygiene and sanitation between residents in Kalobeyei and Kakuma. In Kalobeyei, the rate of infections has declined since the introduction of nutrition-sensitive programming.

- **Improved access to nutritious, locally produced food**

Trainings helped to ensure access to nutrient-rich foods, especially in lean seasons. Production of cowpeas increased, as did the herd sizes of households who kept animals. Kitchen gardens expanded in scope and variety, encouraging dietary diversification. People began consuming more local crops such as sorghum.

- **Improved diets for women**

Recognising that women of reproductive age often eat last and have the poorest diets within area households, FAO Kenya used the Minimum Dietary Diversity for Women (MDD-W) score to measure the impact of the programme on diets. Women surveyed who were receiving the minimum dietary diversity of five food groups per day increased from 39 to 45 percent in refugee households and 40 to 48 percent in the host community.

- **Proliferation of food preservation techniques**

Solar drying techniques taught by the FFS to preserve fruit were adopted by 16 027 people (8 601 female and 7 426 male). The proportion of households preserving food increased from four to 38 percent at the end line survey among refugee households, and from 23 to 40 percent among host community households.

- **Increased income generation**

The programme found a 43 percent increase in monthly expenditure from the baseline to the end line amongst refugee households, indicative of increased earnings. The proportion of households living below USD 1.25 per day also fell. Some beneficiaries have derived income from cottage industries using homegrown produce, for example samosa or sorghum cake sales.

- **Enhanced gender equality and female leadership in trainings**

Nutrition-sensitive FFS trainings aimed to reach a minimum of 30 percent female attendance. Gender equality and female leadership were promoted by the provision of training on marketing, contract and negotiation skills to support women in agribusiness initiatives. The scheduling and duration of training sessions also took household responsibilities into account.

## Sustainability

- **Institutional sustainability and country-level ownership**

The FFS approach promotes institutional sustainability through its partnership with the MoA in Kenya, with training curricula developed in partnership between FAO and the government. This has led to strong ownership and increased capacity of the government to design, implement and deliver nutrition-sensitive programming. Trainings were also delivered jointly between FAO and government staff.

- **Increased resilience against drought and spikes in scarcity**

The FFS initiative trains farmers on conservation agriculture and good agronomic practices. They aim to maintain or improve the natural resource base and enhance community-level resilience to natural hazards by demonstrating drought-resistant techniques and storage and preservation for lean periods. Sensitisation activities emphasized the nutritional value of locally produced foods.

- **Integrated, joint refugee-host support and sustainable infrastructure**

Unlike conventional encampments, Kalobeyei settlement provided access to sustainable livelihood opportunities and related infrastructure: two water pumps, each with a capacity of 30 000 cubic meters (three hectares of intensive agricultural production), greenhouses and an overhead tank. Kalobeyei's integrated support for both refugee and host communities promoted sustainable livelihood structures, since host communities can use settlement infrastructure even in the event of refugee repatriation.

## Testimony



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Twenty-five-year-old Josephine Abuba, a refugee from South Sudan, attended trainings as part of the nutrition-sensitive FFS. After learning how to prepare nutrient-rich meals using locally available resources, Abuba decided to set up a small samosa business within her refugee community.

Abuba now makes around 600 KES per day. Her hot, flaky vegetable samosas sell out quickly at the market. She has also begun to grow produce in her kitchen garden. Whenever there is a surplus, Abuba uses FFS preserving techniques to ensure access to stored food during lean periods.

“Since I learned how to sun dry vegetables, I have a good stock of cowpea leaves and tomatoes,” Abuba explained. “I have a child and feeding him a balanced diet has made him very healthy, with little – if any – visits to the doctor.”



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## Replicability and upscaling

- **Increased demand, and new areas of partnership**

As a result of the positive impacts demonstrated at household level, increased demand led to an expansion of the programme's reach. The project initially targeted 2 500 beneficiary households to undergo intensive nutrition education trainings. By the end of the first phase of the project, 4 519 beneficiary households had attended the FFS.

- **Income generation**

The next phase of programming looks ahead to derive income opportunities from the knowledge base and technical training gained during the pilot phase. The nutrition module will be strengthened, emphasizing the need for a balanced diet. Opportunities for cottage-level side ventures will also be explored, for example poultry or baking businesses.

- **Upscale in areas with little access to nutritious, locally grown foods**

There is significant potential to extending this practice more widely, as its success in different settings has been indicated. Nutrition-sensitive FFS are particularly relevant in locations where there is little availability, access and consumption of diversified and nutritious foods locally.

- **Further data and evidence**

Nutrition-sensitive FFS are currently identified as a "promising practice." While the FFS model is classified as a "good practice," with significant evidence in multiple settings supporting its success in improving food and positive impact on beneficiary communities, the nutrition-sensitive component is still relatively new and its added impact less well-established. Initial surveys have indicated a positive impact on women's dietary diversity, but more evidence is needed in different settings.

## Key learning

- There is significant evidence that the **FFS approach supports improved food security** and correlative evidence suggesting that the **nutrition-sensitive component has contributed to dietary diversification and better eating habits**. However, impact against a control group should still be assessed. FAO has begun collecting data on women's dietary diversity and will continue to do so.
- This model currently uses self-registration for the FFS. To ensure that the most vulnerable are reached, **it is recommended that implementing partners proactively target at-risk households** and ensure that the timings of the training sessions, as well as the materials provided, are adapted to the needs of this specific group.
- This practice is particularly relevant to locations with little availability, access to, and consumption of diversified and nutritious foods locally. However, these locations also often suffer from **water shortage**, making it important to ensure that plans take this into account and that the **design incorporates interventions to ensure sufficient water provision to irrigate the gardens**.
- In Kenya there are gender-based inequalities in access to, and control of, productive resources, including finance products and that these inhibit agricultural productivity. A key rationale for this initiative in Kenya is the recognition of the important role of women in agriculture. **Gender equality and female leadership should be promoted by the provision of training on marketing, contract and negotiation skills to ensure that women are empowered to succeed in agribusiness initiatives**.
- The **trainer of farmers system focuses on building resilient knowledge networks, ensuring that nutrition-related skills and information are continually passed on to the community**. Trained community-based local facilitators remain in place- and in demand- even after FAO's involvement ends. For example, in June 2019, after the end of the project's initial phase, community facilitators still fulfilled requests for additional capacity development trainings.



### The implications of COVID-19 on nutrition-sensitive Farmer Field Schools (FFS) in Kenya's Kalobeyi settlement

The brief covers the first phase of the project, which was implemented before COVID-19 reached Kenya i.e. July 2016 to October 2019. However, given that the project used a sustainable farmer training approach, involving community-based trainers of farmers, it can be said to have contributed to healthy eating for improved immunity during COVID-19. The community based ToFs have continued sensitizing household's on nutrition-sensitive vegetable preservation, healthy diets and simple technologies for producing healthy foods, even after closure of the first phase. FAO supported the ToFs by sharing with them the recently launched national guidelines for sustaining healthy eating during COVID-19.

## Partners

### Resource partners

FAO worked in partnership with the Turkana County Government, the United Nations Refugee Agency (UNHCR), the World Food Programme (WFP) and the United Nations Children's Fund (UNICEF), and national and international non-governmental organization (NGO) partners. The project was funded by the European Union United Nations Trust Fund as part of the "Kalobeyei Integrated Social Economic Development Programme" (KISED P).

### Technical partners

Vétérinaires Sans Frontières (VSF) was the main implementing and supervising NGO.

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This publication has been produced with the assistance of the European Union through the partnership agreement contributing to strengthen the Global Network Against Food Crises. The contents of this publication are the sole responsibility of FAO and can in no way be taken to reflect the views of the European Union.

This product was developed with the support of FAO's Knowledge Sharing Platform on Resilience (KORE) and is available on its online portal. FAO's knowledge management and normative work, through KORE, aims at generating learning and disseminating evidence-based knowledge to support decision-making, resource allocation and programming processes. This work falls under the Global Network Against Food Crises, an alliance taking concerted steps and promoting sustainable solutions to food crises.

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