

Fortifying Food Markets

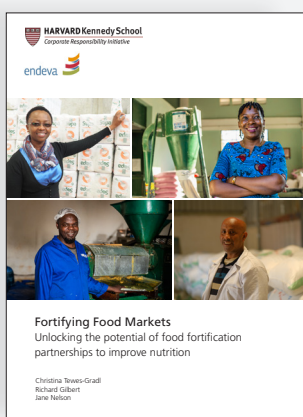
Unlocking the potential of food fortification partnerships to improve nutrition



PARTNERSHIP PROFILE

Affordable Nutritious Foods for Women (ANF4W)

Small-scale maize fortification in East Africa



Fortifying commonly consumed staple foods and condiments with essential micronutrients, such as minerals and vitamins, offers untapped potential to help scale up access to nourishing diets for millions of people affected by malnutrition.

There is growing recognition among governments, donors and large corporations that the local millers and food processors who are responsible for fortifying staple foods in most countries play a crucial role in reducing malnutrition, and that more needs to be done to support and unlock their vital contribution.

A new report: "Fortifying Food Markets", developed by the Corporate Responsibility Initiative, Harvard Kennedy School and Endeava, identifies six opportunities to remove barriers that prevent millers from achieving the scale, quality and reliability that are needed for successful food fortification.

The report is informed by a series of profiles that identify learnings and good practices from existing food fortification partnerships engaged in building the capacity of millers. We thank the Bill and Melinda Gates Foundation for supporting this research.

Introduction to the initiative

The Affordable Nutritious Foods for Women (ANF4W) initiative was established in 2013 under the auspices of the German develoPPP.de program, with the goal of increasing and improving the local production of affordable, micronutrient-rich foods. The initiative was jointly funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) and the Bill & Melinda Gates Foundation, and it was supported by the German Agency for International Cooperation (GIZ).

As a part of the program, the different private sector partners provided support to local food processors through training, technical advice and business development. The program focused on several areas: business-to-business solutions with local food processors, biofortification of rice, maize flour fortification by small and medium size mills, demand creation for nutritious foods, quality assurance & control of fortified foods, and monitoring costs and effectiveness. Its principal aim was to address women's insufficient intake of vitamins and minerals due to poor diets, and, as a result, ensure an adequate supply of nutrients during the critical window of the first 1,000 days of children's lives.

In East Africa, maize flour is the principal staple food. It is an ideal vehicle for fortification with essential micronutrients as it has the potential to reach a large part of the local population at low cost. In Tanzania, 93% of the population of 57 million people consume maize flour.¹ In 2018, an average of 130 children died each day in the country due to malnutrition.²

About 95% of the maize flour consumed in Tanzania is produced in remote small-scale mills.³ Such facilities generally lack the technical equipment, capabilities and incentives to fortify their foods to the desired standards. Furthermore, small mill owners cannot afford the additional cost of micronutrient premix, and they cannot pass these costs on to the consumer due to the price-sensitive nature of the maize flour market.

In 2016, as part of the ANF4W initiative, Sanku, a social enterprise that provides affordable flour-fortification technology and business solutions to small mills, teamed up with Mühlenchemie, an international market leader in the fortification of flour, with the goal of unlocking small mill food-fortification opportunities in East Africa.

1. Rosenthal, J., Teachout, E., Smith, E., Gwao, G., Kawiche, P., Assey, V., Williams, J. (2022). Coverage and Seasonality Use of Fortifiable Maize Flour in Morogoro, Tanzania. *Current Developments in Nutrition*, 6(Supplement_1), 167–167. doi.org/10.1093/cdn/nzac051.083

2. FANTA and the Office of the Prime Minister of Tanzania. 2014. Reducing Malnutrition in Tanzania: Summary of Tanzania PROFILES 2014 Estimates. Dar es Salaam: FHI

360/Food and Nutrition Technical Assistance III Project (FANTA) and the Office of the Prime Minister. www.fantaproject.org/sites/default/files/resources/Tanzania-Malnutrition-Factsheet-Oct2016.pdf

3. Bymolt, R. B., & D'Anjou, J. A. (2018). Lessons on small and medium-scale maize flour fortification in Tanzania. World Vision International. www.wvi.org/sites/default/files/Millers%20Pride%20DMSM%20Tanzania

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ANF4W and the small mill opportunity

The initial target for the ANF4W initiative was to support fortification processes in 60 SME mills in Kenya and Tanzania. Sanku, an ANF4W partner, has been operating since 2014, with the goal of guaranteeing that every meal, for every mother and child, contains lifesaving nutrients. It uses its innovative technology and business model to put critical nutrients into the foods most often consumed by hundreds of millions of malnourished people. With the target of reaching 11 million beneficiaries with fortified flour by 2024, Sanku supports small and medium-sized millers who need help in order to improve their general milling practices, to carry out quality-assurance functions, and to access food fortification equipment and high-quality premix.

Small-scale food fortification can be harnessed as a solution to combat malnutrition thanks to Sanku's innovative business model and use of technology. Sanku installs its patented "smart" dosifier in mills. The dosifier, which was specifically designed for small mills, adds a precise amount of critical nutrients to maize flour during processing as per the national standard.

Critically, Sanku's business model neutralizes the additional cost of the premix that is being added to the miller's flour. Millers buy empty flour bags from local retail dealers and middlemen in order to package their flour. They typically buy bags in small quantities at a high cost. By contrast, Sanku bulk-buys empty flour bags direct from the bag manufacturer, thereby achieving economies of scale. The bags are then sold to millers at the market rate, with the margins from each flour bag covering the entire cost of the miller's nutrients, thereby offsetting the cost of fortification.

Sanku then monitors the miller's use of the dosifier remotely through a cellular link provided by Vodafone. The Sanku team visits the mill if the dosifier is seen to be not in use or if it needs repair, as well as to restock the micronutrient premix as needed.⁴

In terms of monitoring and evaluation, the Sanku dosifiers installed in every mill also offer precise insights via a virtual dashboard. This includes information about:

- The mill's geographical location and coverage;
- The quantity of premix dispensed and total amount of fortified flour produced, which are used to monitor accuracy and reach; and
- The populations reached and number of beneficiaries.⁵

To enable product tracing, Sanku uses a bar code to track the location of premixes and provide sourcing information.⁶

Eight years later, Sanku now⁷ supports 705 small mills in Tanzania and seven in Kenya. Mühlenchemie continues to supply Sanku with high-quality flour premix for this growing market.

Key facts

Small-scale maize fortification partners in East Africa

Funders: The Bill and Melinda Gates Foundation, Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (BMZ)

Technical partners: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Mühlenchemie / Stern-Wywiol Group, Project Healthy Children – SANKU

Other partners of the ANF4W initiative: AGLUKON Spezialduenger GmbH & Co. KG, Ajinomoto Co., Inc., BASF, Bayer Crop Science, DSM / Sight and Life, EXP Social Marketing Foundation, Ghana National Development and Planning Commission, Helen Keller International, Kenyan Ministry of Health, Meru County Public Health Department, Tanzania Food and Drug Authority

Timeline: July 2013 to August 2017

Countries: Tanzania and Kenya

Budget: €10.5 million

Vehicle: Flour

4. Overview deck, slide 3, 4

5. Slide 10

6. Sanku meeting notes 1

7. As of 6 August 2022

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Building local capacity with the private sector

Sanku faced a number of challenges in meeting the needs of small mills in Tanzania. Mühlenchemie helped the organization address many of these, including the following:

- Importing high-quality premix can be challenging due to the lack of quality-assurance processes and the type of certifications required on entry.
- Small rural mills are hard to reach, often geographically distant from one another and require only small, irregular order sizes due to their inability to buy and store inventory.
- A special premix formula is required for small mills due to their often harsh and humid operating environments.

Since the launch of the initiative, Mühlenchemie has provided Sanku with high-quality premix and expert support along the fortification value chain, from the point of premix manufacture to its ultimate delivery to the miller.

More specifically, Mühlenchemie has provided:

- Funding to Sanku to support the organization's early growth. Mühlenchemie matched BMZ's grant to Sanku through the ANF4W, thus helping to equip 29 additional mills with Sanku dosifiers.
- High-quality, competitively priced premix and ongoing technical support to ensure the premix is formulated to meet local standards and conditions.
- Support with premix quality testing and in securing the required import certifications.
- Support with optimal packaging and distribution to meet small mills' quantity needs.

Technical support: Drawing on its extensive lab and technical capabilities, Mühlenchemie ensures that premix formulations precisely meet local requirements. For example, climatic factors affect premix shelf life; thus, formulations need to be recalibrated to reflect local conditions. For instance, mills located in coastal areas faced difficulties with premixes due to high levels of humidity.

Consequently, there was a need to adapt and calibrate premixes by changing the carriers that help to hold the micronutrients in the correct ratios.⁸ Sanku's technical personnel were provided with technical training in Mühlenchemie's offices in Germany, with a focus on premix handling, calibration and supply chain management.⁹

Premix quality control: Mühlenchemie plays an important role in helping Sanku secure the necessary product quality tests, as well as the certification and documentation for imported premix required by the Tanzania Bureau of Standards (TBS). Where necessary, if local lab testing issues and bottlenecks arise, Mühlenchemie arranges for premix samples to be tested using its in-house facilities in Germany.

Premix packaging and distribution: Most premix is typically sold in 25-kilogram bags. Mühlenchemie changed its production processes to provide Sanku with premix in 5-kilogram bags so as to meet the smaller quantity requirements of small mills. Due to the quality of data received by Sanku from the mills, it can accurately forecast premix order requirements and trends, ensuring that stockouts are avoided and inventory is efficiently managed.

Recently, due to global shocks including the effects of COVID-19 and conflicts, premix shipments were delayed in reaching Sanku's facilities. The partners are now working together to anticipate future trends and improve forecasting to minimize supply chain disruptions, thus ensuring that Sanku always has enough premix inventory available.¹⁰

8. Interview MHCM

9. Interview MHCM

10. Meeting notes 2, 2

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Results

As of August 2022, Sanku had installed 728 dosifiers in over 700 partner mills, reaching 3 million people with fortified maize flour. The total yearly cost of fortification per person has been reduced to \$0.86, leading to an increase in population coverage and facilitating access to fortified flour in Tanzania.

Mühlenchemie annually supplies Sanku with about 63 metric tons of premix. As a long-standing partner in the initiative, Mühlenchemie plans to continue supporting Sanku during the organization's expansion throughout East Africa. Sanku is currently in the process of entering Kenya, where the national fortification standards require the inclusion of additional micronutrients in premix (including vitamin A). This requires a reformulation of the premix formula used by Sanku in Tanzania.

Insights

- **A platform for collaboration:** The collaborative framework of the ANF4W partnership enabled the partners to develop their mode of collaboration for this challenging task in a safe environment.
- **Business viability:** The commercial nature of the partnership ensures it is sustainable.
- **Digital solutions:** The smart dosifiers provide real-time information on fortification in small mills in a centralized database. This information offers insights into current challenges and enables forecasting of future production and consumption trends. In the future, the data can be cross-referenced with health indicators to better understand the changing nutritional needs of local populations.
- **Flexible innovation:** Responding to millers' needs in the often-rural context of East Africa requires adaptability, creativity and a culture of co-creation among partners.
- **User-friendliness:** The approach outlined above simplifies the process of fortification, making it easier for millers to fortify flours to the correct levels. Importantly, the millers themselves do not bear the cost of fortification.

Sanku is addressing a critical but difficult market – that of small flour mills. These mills have previously been largely left out of food-fortification initiatives and regulation. Cracking this market will help make significant progress toward expanding fortification coverage, since small mills often cater to rural and low-income households that tend to be at risk of nutrition deficiencies.

Sources

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Rosenthal, J., Teachout, E., Smith, E., Gwao, G., Kawiche, P., Assey, V., Brooks-Church, F., Wanlund, A., Moore, M., August, M., Razzaghi, H., Cannon, M., Kishimba, R., & Williams, J. (2022, June). Coverage and Seasonality Use of Fortifiable Maize Flour in Morogoro, Tanzania. *Current Developments in Nutrition*, 6 (Supplement_1), 167–167. doi.org/10.1093/cdn/nzac051.083

Sanku internal documents

Sanku internal dashboards
Sanku overview deck (2021)
Sanku Strategic Plan

Interviews

Leah Tronel, Sanku, Director of Development
Timothy Laku, Sanku, Director of Information Systems
Wilson Chonjo, Sanku, Head of Supply Chain
Maximiliane Schneider, Sales Manager, East Africa, Mühlenchemie/SternVitamin
Leo Schulte-Vennbur, Mühlenchemie/SternVitamin, Manager, Food Fortification & Partnerships
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