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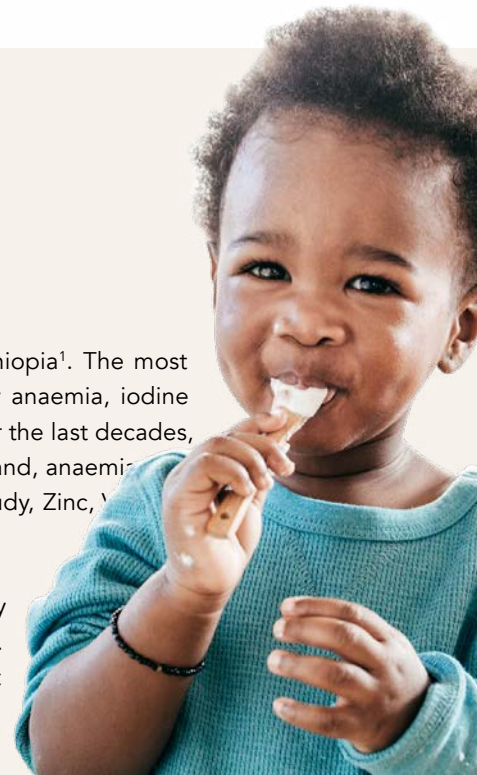
Fortification Standard for yoghurt in Ethiopia

THE OPPORTUNITY

Malnutrition contributes to more than 50% of all infant and child mortalities in Ethiopia¹. The most prevalent forms of malnutrition are acute and chronic malnutrition, iron deficiency anaemia, iodine deficiency disorder, and vitamin A deficiency². Although stunting has decreased over the last decades, 37% of Ethiopian children are still stunted (Mini-DHS Ethiopia 2019); on the other hand, anaemia prevalence has risen as high as 57% (DHS Ethiopia 2016). According to an EPHI study, Zinc, Vitamin A, and Iodine deficiencies are problems of public health concern³. Folic acid, vitamins B, and vitamin D are also the other common micronutrient deficiencies⁴. The diets of Ethiopian households is heavily reliant on cereals and is characterised by limited diversity and adequacy among children under 2 years (DHS Ethiopia 2016). Nutrient-rich foods such as dairy that are rich in micronutrients are unaffordable for most of the households in Ethiopia⁵.

Despite having more than 10 million dairy cows in Ethiopia, milk productivity and consumption is very low, on average below 2 litres per cow. Most countries recommend at least one serving of milk or yoghurt every day (200 ml)⁶, but in Ethiopia the average consumption per year is only 20-25 litres. Only a fraction, 5-10% of the milk is pasteurized, and often milk is consumed without boiling before consumption⁷. This poses a significant food safety risk. Traditionally produced yoghurt is common, called "ergo", and mainly consumed by adults. Recently, flavoured, and high sugar yoghurt has entered the market, and is becoming increasingly popular.

The seasonal disparity between dairy availability and demand is an important issue for dairy scarcity and price instability. The Ethiopian Orthodox fasting season totals more than 200 days, during which no animal source foods are consumed, and supply exceeds demand for dairy. Children under 7 years are exempted from fasting and they are free to consume dairy products during this period, however, consumption remains low for this segment due to social norms and households' preference to avoid having any dairy product in the home during fasting.



THE SOLUTION

In 2017, the GAIN Access to Better Dairy partnership was established and supported by Danida. Partners committed to help improve diets of children and mothers, as well as the livelihoods of smallholder farmers, by developing affordable, safe, and nutritious dairy solutions that appeal to children, and are produced and marketed by local dairy processors. The partnership consists of private companies, government agencies, civil society organizations, and universities. Partners bring together their specific expertise to co-develop solutions that are locally produced and affordable for lower income consumer segments. Focusing on consumer segments that are exempt from fasting, such as children and pregnant and lactating women, has the potential to create a more stable demand for milk and help producers find market opportunities year-round. Affordability and convenience for out of home consumption are addressed by making efficient use of the milk and make possible small packing sizes for "on the go" consumption. To ensure a significant contribution of essential nutrients in a smaller volume product, the partnership worked to improve the nutritional value of the dairy based solution by adding essential micronutrients missing in the diet of children and pregnant and lactating women.

1 <https://www.usaid.gov/ethiopia/nutrition>

2 <https://www.open.edu/openlearncreate/mod/oucontent/view.php?id=314§ion=8.3.2>

3 EPHI, (2014). Micronutrient survey report

4 Technical Requirements for the Fortification of Wheat Flour in Ethiopia, 2014

5 Affordability of nutritious foods for complementary feeding in Ethiopia: GAIN, 2021)

6 https://www.fao.org/fileadmin/user_upload/newsroom/docs/Milk%20and%20Dairy%20Q&A.pdf

7 <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-022-12665-4>



Safe and healthy

The milk is pasturised and then fermented. Fermentation makes the product safer, since the proliferation of 'good bacteria' make it difficult for 'bad bacteria' to survive.

Image 1: Packaging design of Ergo-go, strawberry flavour

THE IMPACT

As result of an intensive co-creation approach with contributions from a very diverse set of partners with complementary expertise, a fortified yogurt has been produced. The partnership's successful collaboration with the Ethiopian public sector (Ethiopian Standard Agency) has resulted in that the first approved standard for a 80 ml and 100 ml size fortified yoghurt has been developed. The fortified yoghurt contains the vitamins A, D3, B12, Folic Acid, and minerals zinc, iodine, and selenium.



Acceptability studies have revealed positive responses by consumers, and processors are able to produce a safe and nutritious 100 ml yoghurt with fortification levels that adhere to the new yoghurt fortification standard.

A key central point to the approach has been the focus on "quality" – along the value chain. Thus, focusing on good milk quality by working with smallholder farmers, to minimize milk loss due to spoilage and adulteration, and an enhanced quality control at the processing side driven by the production

standards needed for fortification which requires high precision during processing. Choosing a yogurt product instead of fortifying milk, has also improved the quality as yoghurt has a longer shelf life than milk. In addition this approach also has the potential to reduce food loss and waste. The partnership is sharing its experience and is leveraging the Scaling Up Nutrition Business Network (SBN) to get inspired by the SHARP approach for co-creation of solutions, namely: Sustainable, Healthy, Affordable, Reliable and Preferable.

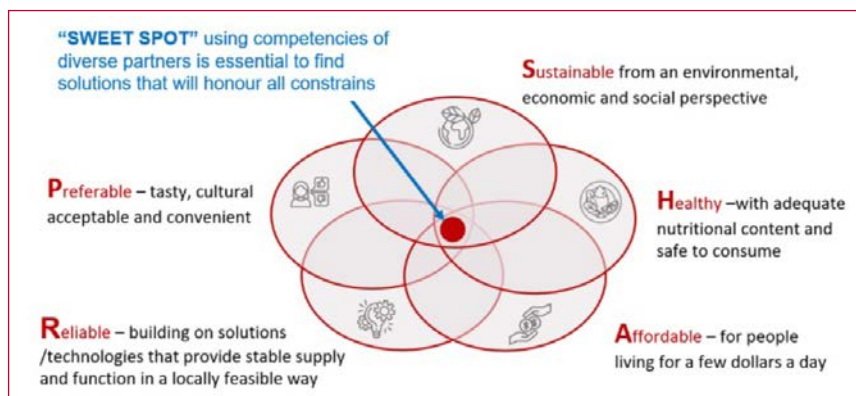


Image 1: Explanation of SHARP model

The success of the multi-sector SHARP approach, where partners address multiple constraints at the same time, has inspired other business to join the partnership and has now expanded into Tanzania and Pakistan. Danida is supporting the GAIN Access to Better Dairy partnership into the next phase called "scaling and greening" and the SUN Business Network, is used as the key vehicle for learning and scaling.

The key focus in Tanzania is to make a version of the yoghurt that is fortified to address the specific nutrient gaps in the country, while addressing the food loss and waste case via improved fermentation expertise. In Pakistan, the SHAP approach is applied to a fortification of a dairy based drink that is repurposing a nutritious bi-steam from cheese production, whey. The whey is normally wasted, but now used as a key ingredient and will provide the opportunity to improve affordability.

Global Alliance for Improved Nutrition (GAIN)

Rue de Varembé, 1202 Geneva, Switzerland
T: +41 22 749 18 50 E: info@gainhealth.org

www.gainhealth.org

