

Affordable milk.
FOR ALL.



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 **gain**
Global Alliance for
Improved Nutrition

Why milk?

Milk is rich in micronutrients, energy, and protein. It is particularly good for teeth and bone health, immunity, and blood-clotting.

Animal milk is never recommended for children below six months of age, while most paediatric associations suggest nine or twelve months as a suitable age for its introduction. For growing children, milk can be an appealing source of vitamins B1, B2, and B12, and minerals calcium, magnesium, and potassium¹. In populations consuming low levels of animal-source foods, children are often deficient in B12, and milk can improve their nutritional status¹.

In Kenya, milk is a longstanding part of the food culture. About 70% of Kenya's milk production comes from cows – the rest comes from goats and camels. Smallholders dominate the industry².

Dairy is an important food group for both rural and urban Kenyans, right across the income distribution³. In Nairobi, for example, households spend an average of 15% of the food budget on dairy (13% in the poorest fifth of households, rising to 17% for the richest fifth)⁴. Average milk supply in Kenya is around 250 ml per capita per day, providing around 160 kcal of energy, 8 grams of protein, and 9 grams of fat⁵.

Raw milk: from wonder food to health threat



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A large fraction of Kenya's milk – around 85% – is sold raw and unpasteurised², raising concerns about public health. US research found unpasteurised milk to be 150 times more likely to cause illnesses than pasteurised dairy products, resulting in 13 times more hospitalisations⁶.

The Kenya Dairy Farmers Federation sees milk hawking – selling or trading milk from home to home or on the streets from vendors with no official licenses – as a major threat to food safety⁷. Milk sold in this way might be procured from an animal suffering from anthrax or other diseases transmissible to consumers, and may be improperly refrigerated.

One of the reasons behind the practice of selling milk raw is that it allows people to buy in variable and smaller quantities, catering to customers with less spending money. Moreover, it tends to be 20 to 50% cheaper than processed milk.

Milk ATMs – safe and affordable

At Tarakwo Dairies, based in the Rift Valley near to Eldoret, they are scaling up an innovative solution to tackle milk hawking and improve food safety.

Tarakwo Dairies established a network of automated dispensing units, called milk ATMs. This is inspired by automated teller machines – bank machines that, for example, dispense cash after an account holder inserts a bank card.



UNSAFE



UNAFFORDABLE



**SAFE &
AFFORDABLE**

Figure 1: Safe, affordable milk from ATMs

Consumers can choose the amount of milk they want to buy using the keypad of the machine, payment is made with cash and the milk is dispensed from the nozzle into a receptacle placed underneath.

The local consumers refer to the milk ATMs as Any Time Milk. They began in Eldoret town and suburbs (Kenya's fifth largest town with around 300,000 residents), providing consumers with safe, pasteurised, nutritious milk in any quantity, at any time and at an affordable price. Ready-to-drink milk is available for as little as 5 Kenyan Shillings (around 5 US cents) for an 80 ml cup, making this safe milk accessible and more competitive, compared to raw milk sold informally.

tarakwo dairies

DRIVING DOWN PRICES

A case study analysis⁸ revealed that in areas where Tarakwo ATMs operate, pasteurised milk prices are driven down – to close or equal to the prices of raw milk. In the absence of milk ATMs however, prices of pasteurised milk can vary greatly.

What role did the Global Alliance for Improved Nutrition play?

Tarakwo Dairies began as a milk cooling plant under the Bill and Melinda Gates Foundation's East Africa Dairy Development project but has since grown into a farmer-owned limited liability company. In 2014, Tarakwo applied to GAIN's Marketplace for Nutritious Foods (MNF) programme (Box A), for support in managing this transition. Leveraging investments already made by the company, the MNF supported Tarakwo by a) helping to develop a business plan; b) helping to develop a marketing strategy; and c) providing a grant to:

- Overcome challenges in the cold chain, including installing a chilling unit to lower cost and time needed to cool milk;
- Increase production capacity;
- Expand reach of milk ATMs, including through purchase of more milk dispensers;
- Purchase a milk delivery truck with 10,000 litre capacity; and
- Improve milk safety through use of lab equipment to analyse and ensure consistency of quality supplied by farmers.

Tarakwo started pasteurising their own milk in August 2015 and selling it through a milk ATM in Eldoret town. Sales reached 950 litres that month.

Despite drought conditions persisting across Kenya in 2016 and 2017, Tarakwo has been able to increase sales of pasteurised milk. By mid-2017, the business was pasteurising and selling more than 2,000 litres of milk each day, or around 60,000 litres a month. Moreover, they have expanded their product lines to include yoghurt and mala (fermented milk) and are even supplying pasteurised milk to the ATMs of other companies. Their profit margins are higher, allowing them to offer farmers a better price, which has helped to strengthen the supply chain.

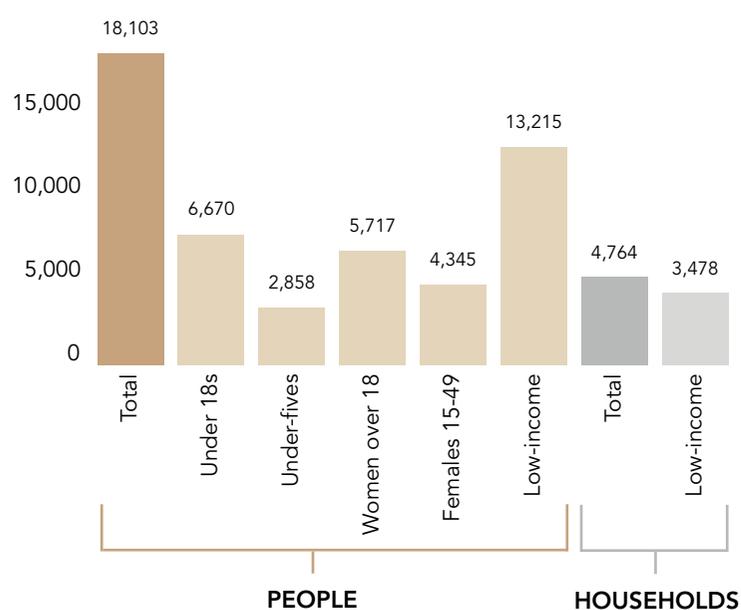
In 2018, GAIN provided further technical support to Tarakwo for developing an expansion strategy. This has enabled them to expand distribution into four further counties to the west of Eldoret's county of Uasin Gishu. To implement this expansion strategy, Tarakwo has hired new sales staff to cover the new areas and leveraged private investment from a bank in order to develop their distribution capacity as well as the capacity of the farmers that they buy milk from.

Box A - The Marketplace for Nutritious Foods

The Marketplace for Nutritious Foods (MNF) is a flagship GAIN programme designed to accelerate accessibility, desirability and quality of nutritious foods in low-income countries through supporting local small and medium enterprises (SMEs). The first phase (2013-2017) was funded by the US Agency for International Development. The Netherlands Ministry of Foreign Affairs is funding the second phase of project implementation, which began in 2018.

Through the MNF, GAIN provides technical assistance, grants and training to improve businesses' capacity to produce nutritious and safe foods at scale, leading to improved production and consumption of these foods – which in turn improve people's diets and health. Direct support to SMEs began in 2013, with businesses receiving their first tranche of assistance between 2013 and 2015, continuing in each case to 2017.

Figure 2: Reaching vulnerable groups over a 23-month window



Any Time Milk

An estimated 4,764 households were reached between August 2015 and June 2017. Almost three quarters of these – 3,478 – had per capita income below USD 1.90 per day⁸. A large share were also women and children under-five: key target groups for GAIN (Figure 2).

Another key benefit of pasteurised milk is that it keeps for longer than raw milk and improves milk availability in the off-season⁹.



GOOD QUALITY, GOOD SUPPLY, GOOD HYGIENE

Customers praised milk ATMs in Eldoret ⁸

“ I choose Tarakwo milk because of its **quality** and the **service** by the attendants. I switched completely to purchasing from Tarakwo. The milk is nice and it is not milk in which water has been added. ”

Benedicta, 42, mother of four living with husband, children and grandchild

“ Tarakwo is always available, no matter the season. [...] I choose Tarakwo because the attendant maintains a **good hygiene**. [...] The milk is **good quality**; the apparatus is clean. ”

Seth, 30, father of one living with his wife and child

“ My consumption and buying habits are affected by the climate. I buy from hawkers because it is easily **available** and it is always offered at a **cheap price**. But in dry season I buy pasteurised milk from ATMs because at such times fresh quality milk can only be found in ATMs. ”

Mary, 24, single mother of one

“ I started buying Tarakwo’s milk in April last year. I don’t buy raw milk. I only purchase milk at Tarakwo. I started buying there after finding of out the **good quality milk**. ”

Miriam, 29, mother of three, living with husband and children

Safe, quality milk on tap needs investment and maintenance

Investing in high-quality equipment, maintaining it, and developing a secure, dependable, and high-quality supply chain are crucial for food safety and quality.

Some underqualified and under-equipped milk ATM businesses have sprung up recently in Eldoret, leading to food safety concerns and generating reputational issues for milk ATMs as a whole. The emergence of these businesses is attributed to two main factors – the relative ease of setting up milk dispensers and the shortage of standards on ATMs set to date – that have resulted in substandard, cheaper machines coming onto the market; for instance, without built-in cleaning systems.

In 2018 The Kenya Dairy Board briefly halted awarding new licences, to review and update the requirements for businesses managing ATMs. Hopefully this will result in only companies with appropriate expertise, such as Tarakwo, being able to operate ATMs going forward.

Affordable milk. For all.

Quality milk ATMs, appropriately operated, have great potential to expand consumption of safe, nutritious dairy in Kenya, east Africa, and beyond.

Through the Marketplace for Nutritious Foods, as well as our other programmes around the world, GAIN is confident more opportunities to support companies like Tarakwo will arise, to replicate the achievement seen in Western Kenya.



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