



# DIGITAL FAT TESTING: Promoting Fairness and Transparency Within the Dairy Market

## Learning Themes:

Digital Fat Testing | Strengthening the Dairy Market | Creating Transparency

Funded by The Bill and Melinda Gates Foundation, the SDVC II is a 3 year, USD 3.8 million initiative. The project aims to leverage the successes, innovations and momentum generated through SDVC I. By combining those factors with a limited set of new activities, SDVC II is testing what is required to reach a tipping point in the sector that could lead to industry-wide replication. The project directly targets 30,000 smallholder producers in three major dairy clusters in the North West of Bangladesh to engage in a transparent milk collection system and integrated service provision model anchored through a network of input supply shops and dairy collection points applying game-changing digital fat testing technologies. This Innovation Brief highlights the digital fat testing initiative.

## Context

Dairy farming represents a major source of employment and income for the poor in rural Bangladesh. According to a report by the Department of Livestock in Bangladesh, the sector generates approximately 20 percent of full-time employment. Furthermore, Bangladesh has the third largest cattle population of any nation in Asia and the twelfth largest in the world. In light of growing demand for dairy products nationally, the development of Bangladesh's dairy sector holds tremendous potential for economic empowerment of the rural poor.



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The domestic milk market is crippled by various problems. However, that inhibit its potential to alleviate poverty for smallscale farmers. In a nation with numerous dairy farmers, 40% of the nation's milk supply is imported. While 90% of the milk produced domestically comes from smallholders, they face a complete lack of transparency within the marketplace. The power is placed in the hands of the milk collectors who aggregate the milk received from individual farmers. The collectors then sell the milk to chilling plants, which pay them based on the fat content of the milk. The plants use the traditional Gerber method for testing the fat content, which is less accurate than other methods and easily manipulated. Because of this and the fact that collectors are paid based on the average fat content of the milk they sell to the plant (not accounting for the milk quality of the individual producers), the collectors are incentivized to water down the milk. Farmers receive a correspondingly low price for their milk and find little profit by selling milk to the formal markets. The end result is that the supply is erratic and milk chilling plants often operate below capacity.

## CARE's Response

CARE has implemented digital fat testing machines to accurately measure the fat levels of milk at several points throughout the sale process.

CARE's Strengthening the Dairy Value Chain (SDVC) project has been looking at ways to solve inefficiency within the market and has worked to implement digital fat testing (DFT) devices that will alleviate these problems.

CARE has partnered with BRAC to facilitate the installation of several DFT machines in locations throughout the Northwest Bangladesh. The machines are located at various collection points, near chilling centers, to ensure milk delivery to the formal market. When farmers meet the collectors to deliver milk, their individual milk is tested and they are given a receipt stating the volume of milk and fat content. The milk is then added to one communal barrel and delivered to the chilling plants, where the milk is tested with a DFT machine a second time. The project is currently underway in seven districts of Northern Bangladesh (Bogra, Sirajganj), Rangpur, Kurigram, Natore, Joypurhat and Pabna); targeted a total of 89 collection points that work in cooperation with 22 different chilling plants.

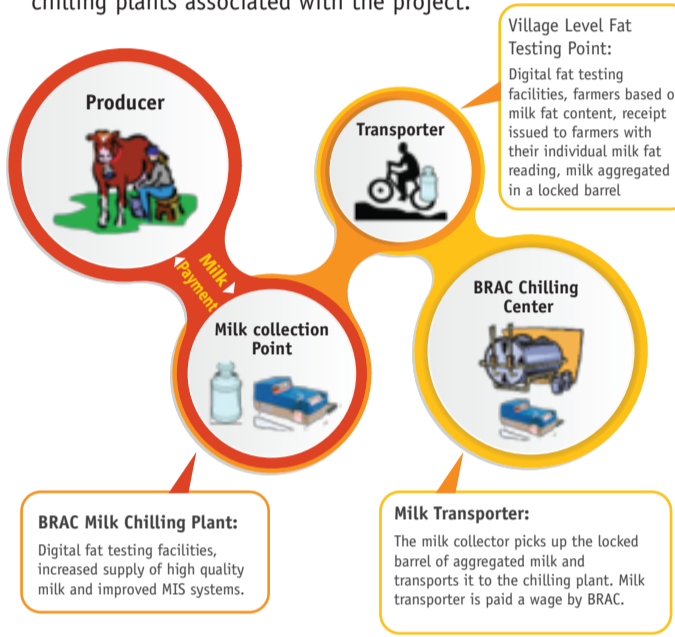
operation of the project. 96% of farmers involved received a higher price for milk during morning collections and 98% of farmers received a higher price for the evening collection. Many producers have seen these positive results and expressed support for a pricing system based on milk quality. Even producers who doctored their milk have seen the benefits and began to change their dairy operation to favor proper cattle management and higher yields of quality milk. CARE has identified the producers with the lowest quality milk and designed an intensive training program on animal feed and disease management so they can improve milk quality.

**Collectors:** 50 collectors along with 29 collection point assistants are now connected with the project. There has been some resistance from the collectors upon switching over to a more transparent system, but with the project underway, opposition is falling. This is due in part to the fact that milk collection and sales income for DFT collectors has been extraordinary, averaging about 275 liters and USD \$188 per day, respectively. CARE has also been working with these collectors to improve their collection and hygiene strategies. In the past, some collectors went out of business because of milk spoilage and improper hygiene practices.

**Chilling Plants:** The chilling plants have also benefited from the digital fat testing initiative. As the new methods became more established, farmers are selling their milk to the collectors with greater regularity. In the past, many farmers would sell their milk on their own to the informal market to avoid the low prices of the formal market. However, as the prices continue to rise, the formal sector has become more lucrative. 22 targeted chilling plants are now connected with 50 collection points. The supply of milk has increased and the plants have begun to operate closer to capacity. The quality of milk that the plants receive has also improved, which leads to a higher quality product and ultimately increased profits. The plants have also been working to form personal relationships with the individual collectors, which helps to secure the supply. The plants offer a higher price for consistently meeting quotas and help connect the collector to another milk buyer if the plant is not purchasing milk on a given day.

## Impact

The initiative has benefited the producers, collectors and chilling plants associated with the project.



**Farmers:** Till date the project has been able to reach nearly 26138 farmers connected with 848 different SDVC groups. The initial results validate the assumption that DFT would facilitate greater transparency and price incentives for farmers along with quality incentives for the processors. Participating farmers have reported a 32% price increase during the initial



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**Processors:** The higher quality milk coupled with a more consistent supply is poised to benefit the milk processors as well. The higher fat content and increased supply will enable the processors to sell more milk and ultimately increase profits.

**Milk consumers:** Milk consumers all over Bangladesh will benefit from a higher quality and consistent supply of milk in the market. Furthermore, the availability of quality milk can change the buying behavior of consumers (who mostly buy imported milk at present), thus contributing to sector development through increased demand.

**Dairy Sector:** As the DFT program spreads throughout Bangladesh, the dairy value chain will continue to be strengthened. More and more producers will be able to expect fair pricing and will be incentivized to both produce and sell more milk. The desire for an improved product will push the farmers to seek inputs via the Microfranchise shops that CARE has established through the SDVC project. As the market continues to gain stability, Bangladesh will be able to rely more and more on domestic milk production, reducing the need to import milk from India and China.

resistance toward digital fat testing. Many collectors have been resistant to this change but the economic incentives are hard to turn down as income improves and milk supply increases.

As CARE moves forward with the digital fat testing initiative, a key consideration is how to scale up the program. In order to maximize project effectiveness, CARE is conducting analysis of production yields and fat content of producer groups throughout northern Bangladesh. The aim is to identify locations with the lowest production levels and fat content. These areas will be targeted for installation of the DFT machines. Another important part of strengthening the dairy market is to strengthen linkages between the players in the market to make the supply of milk as consistent as possible. CARE must work to link collectors with multiple suppliers in both the formal and informal sectors. This will ensure that collectors can always sell their milk even if a chilling plant is not accepting milk on a given day. CARE is also trying to link the DFT machines with the SDVC input shops.

The DFT initiative is a program with an innovative design, poised for rapid growth. As the project expands, it is expected to bring transparency and stability to the milk market. Finally, it holds promise of decreasing the nation's reliance on imported milk.

## The Road Ahead

As the LIFT initiative scales up, CARE must work to overcome some of the challenges that have arisen.

As the project progresses, there are a few challenges that CARE must deal with. The first is the mindset among producers that favors receiving a lower price for their milk in exchange for immediate cash. The digital fat testing system is credit based and farmers are paid for their milk later in the afternoon or the next day. CARE must try to encourage farmers to accept a larger, but delayed, payment. Another challenge is collectors'



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### Project Fact Sheet

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