

Lessons from Business



TETRA PAK IN BANGLADESH: PARTNERING TO IMPROVE NUTRITION AND DEVELOP THE DAIRY INDUSTRY

BSNP AT A GLANCE

Starting in 2002, Sharif Uddin Ahmed, Country Manager for **Land O'Lakes Bangladesh**, a leading US-based agricultural company, and his team began the distribution of milk and fortified biscuits to primary school students in four upazilas, or sub-districts, of the Jamalpur District, one of 64 districts chosen for its high rate of malnutrition and low rates of primary school enrollment and attendance. At its peak, the **Bangladesh School Nutrition Program (BSNP)**, Bangladesh's first school feeding program of its kind, reached **262,869 primary school children in 967 schools**.

The program delivers 200 ml of ultra high temperature (UHT) treated milk in a Tetra Pak Fino Aseptic package with printed educational messages, and 40 grams of wheat biscuits fortified with iron and other vitamins to each child six days per week.

The program is complemented with semiannual de-worming tablets, further reducing illnesses which affect learning capacities and impair physical growth. The children benefit from improved awareness of hygiene and sanitation through the ongoing monitoring and evaluation team. **BRAC, Bangladesh Rural Advancement Committee**, one of the world's largest NGOs, is responsible for monitoring and evaluating the BSNP. A staff member visits every participating school at least once a week to monitor the distribution of snacks, verify attendance and educate children on best hygiene practices. BRAC maintains

records of daily school attendance and children's weight, ensuring transparency and measuring results.

"The Bangladesh School Nutrition Program is a pioneer program. We have done so much to establish it and if it comes to an end, all lessons will be lost to be rediscovered at a later time. Given another two to three years, we could establish a sustainable system comprising nutrition, health and education."

- Sharif Uddin Ahmed, Bangladesh Country Manager, Land O'Lakes NGO

ADDRESSING NUTRITION

Ensuring food security and proper nutrition remains a major challenge in Bangladesh, a country that is labeled as 'alarming' on the International Food Policy Research Institute's (IFPRI) global hunger index.¹ Forty-eight percent of Bangladeshi children under age five are chronically malnourished (stunted)² and 30% of the general population is below the minimum level of dietary energy consumption.³ Rising food prices, which have resulted from increased rates of inflation and the country's susceptibility to natural disasters, have complicated the alleviation of malnutrition, which depends upon access to safe and nutritious food.⁴

While there is a tremendous need to address malnutrition throughout the general population, the BSNP has concentrated on the nutritional challenges faced by primary school children between the ages of five and eleven by providing highly nutritious foods on a regular basis.

The distribution of UHT milk and fortified biscuits addresses the critical problem of short-term hunger and contributes to the prevention of micronutrient deficiency-related illnesses, including night blindness (vitamin A deficiency), mouth and gum lesions, and anemia (iron deficiency). UHT milk contains no preservatives, retains nutritional value and can remain fresh for several months without refrigeration. Milk is highly nutritious and contains 14 of 18 vital minerals and vitamins. A portion of milk and biscuits contains 325 Calories (1360 kJ) and fulfills 20 to 25% of a child's needs depending on age, height and weight. IFPRI conducted an impact assessment of the United Nations World Food Programme's (WFP) school feeding program in Bangladesh, which distributes packets of biscuits providing 300 Calories every school day. The study concluded that school feeding programs in highly food-insecure rural areas improve the diet and nutritional status of children.⁵



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The children's calorie intake from biscuits had a statistically significant positive impact on their daily calorie intake and body mass index (BMI).⁶ A nutritional analysis of the BSNP has yet to be conducted but the impact is expected to be comparable due to its similar nutritional value.



"Before the BSNP began, my students were frequently ill. Because of the nutritious milk and biscuits, this is now less of a problem. Students are also more motivated than ever before and enthusiastic about coming to school."

— A Jamalpur primary school teacher

A CONTINUED PARTNERSHIP

Björn Wille, Director of Project Development and Nutrition for **Tetra Pak's Food for Development Office**, and the driving force behind the BSNP, realized the business opportunity in Bangladesh after witnessing the successful implementation of a school feeding program in Indonesia. In 2000, Tetra Pak, the world's leading supplier of food processing, packaging and distribution systems, had partnered with Land O'Lakes and the **United States Department of Agriculture (USDA)** to deliver school milk to 500,000 Indonesian primary school students. The program not only improved nutrition, health and education of benefitting children, but also delivered business benefits to Tetra Pak. Wille, recognizing the potential long-term business and development impact, partnered again with Land O'Lakes to replicate the program in Bangladesh.

Together, **Land O'Lakes NGO** and Tetra Pak successfully applied to **USDA's Global Food for Education Initiative**, a pilot project which donated surplus agricultural commodities (Figure 1) from

the United States for school feeding programs in developing countries. In 2002, USDA donated nearly 35,000 metric tons of commodities, including wheat, non-fat powdered milk and soybean oil to Land O'Lakes. Responsible for the execution of the program, Land O'Lakes used a portion of the donated powdered milk for the school milk program while the majority, along with the other commodities, was monetized to cover the program's operating expenses. The **Government of Bangladesh (GoB)** supported the school feeding program by waiving all taxes on non-monetized commodities that would directly benefit the population of the country. Tetra Pak linked Land O'Lakes with local milk processors, and provided technical know-how and discounted, high quality hygienic packaging.

While Tetra Pak was establishing its first office in Bangladesh, its growing team was formulating a proposal for the creation of a knowledge sharing platform to provide access to best practices in school milk programs. Björn Wille and Ulla Holm, then Tetra Pak's International Director of Financial Services, led the initiative. Tetra Pak had been involved in school milk programs since the 1960s when its founder, Ruben Rausing, recognized the necessity of addressing children's malnutrition during his frequent travels to India and Pakistan.

The Food for Development Office (FfDO) was formalized as part of Tetra Pak's business strategy in 2002. The purpose of the FfDO was to bring together the company's expertise in dairy and agricultural development and more than 45 years of experience in school milk programs to support sustainable economic development. Members of the new team focused on reducing malnutrition and improving the health of school children while simultaneously stimulating the demand for local dairy products and consequently contributing to the livelihoods of all beneficiaries in the dairy value chain. The creation of the FfDO facilitated the implementation of additional school milk programs and the identification of critical success factors necessary for a program's replication. Through the FfDO, Tetra Pak built critical partnerships, uniting governments, international organizations, development agencies, NGOs, the private sector and farmers.



Figure 1:
The Commodity Cycle in the BSNP

Tetra Pak partnered with its sister company, **DeLaval**, a market leader in equipment and systems for dairy farming with over 120 years of dairy development experience to incorporate the company's deep understanding of milk production and collection to complement Tetra Pak's expertise. Together, the partnership covers the entire dairy value chain from cow to consumer.

The FfDO and a network of colleagues in Tetra Pak and partner companies have extensively developed Tetra Pak's school milk programs and in 2008, its interventions reached **29 million children in nearly 30 developing countries**. The FfDO's aim is to ensure a sustainable mechanism in which host governments adopt school milk programs and the dairy industry is capable of responding to the local demand of dairy products.

THE BSNP: A MODEL SCHOOL FEEDING PROGRAM

The partnership has been highly successful in delivering its intended educational impact and Tetra Pak, Land O'Lakes and USDA are very satisfied with the results. The incentive of receiving milk and biscuits has **increased enrollment** and **reduced absenteeism**. Despite economic hardships such as rising food prices, parents are more inclined to send their children to school instead of work when they can benefit from a school feeding program. Since the program's inception in 2002, attendance rates in the Jamalpur District have nearly doubled, from 43 to 82%. According to parents and teachers, academic performance has radically improved now that the children no longer struggle to concentrate on an empty stomach.

"Jamalpur District has reached the second highest rate of attendance in the country as a result of the school nutrition program. Land O'Lakes is doing an excellent job. We need them to continue their support."

—Nur Muhammed, Jamalpur Sub-District Education Officer, Government of Bangladesh



It is 9:00 A.M. at Melandah Primary School. Eight-year-old Shepali is excited because yesterday she was appointed class captain and is now responsible for distributing milk and biscuits to her classmates. Eating biscuits and drinking milk is a major highlight of her day and she is looking forward to distributing snacks to her classmates for the first time.

Through the creation of parent committees, which are involved in monitoring students' enrollment, attendance and the distribution of food, the program has achieved a sense of **community ownership**. The BSNP's impact does not end at the borders of the Jamalpur District; parents in neighboring schools are demanding similar services and standards for their children's schools.

BEYOND NUTRITION

Besides addressing nutrition, the BSNP contributes significantly to the economic development of the region and has created over 500 jobs which have provided food security for 2,500 family members. Milk processors, five of which are now technically equipped and have the know-how to produce aseptically packed UHT milk, hired personnel specifically for school milk processing. BRAC employs over 175 staff who monitor the school nutrition program and hundreds of Bangladeshis have been contracted

to deliver milk and biscuits to schools through various transportation means including boats, bullock carts, rickshaws and manual labor.

The BSNP has increased the demand for processed milk, thus promoting local production and accelerating the development of the dairy sector. The program has created a demand for **25,000 liters of local fresh milk** every school day since 2002 which continues to have a significant impact on small-scale farmers and dairy processors. Initially the milk was processed and packed in Thailand and exported to Bangladesh. Today the overwhelming majority of school milk consists of locally produced fresh milk.

The creation of an instant market for UHT milk translated into direct benefits for Tetra Pak. The increased demand accelerated the decision of three private sector companies to invest in Tetra Pak UHT processing and packaging equipment. These companies also entered into the commercial market with their UHT milk and initially sold 6 million liters. As such, packaging material was required from Tetra Pak, bolstering their sales in the region.

The regular intake of milk among primary school children has increased per capita milk consumption and is likely contributing to the increasing demand for milk and dairy products in Bangladesh. Although there is no data available, the BSNP's impact on milk demand in the Jamalpur District is expected to be substantial. While many children consume small quantities of milk at home, very few had drunk UHT milk prior to the BSNP. The demand for more and better quality milk will inevitably rise as families realize the value of drinking UHT milk and a milk drinking culture is established.

THE CHALLENGE

Despite the successful partnership, Björn Wille and Sayef Nasir, Country Director of Tetra Pak in Bangladesh, face challenges to sustain their efforts after seven years of the BSNP's operation. USDA's funding will not last forever and the dependence upon imported milk does not offer a sustainable solution for the continuation of the BSNP. Data reveals where the core of the problem lies. More than seven million families are involved in small-scale cattle rearing with an average of 3.5 cows per farm.⁷ Out of the 24.5 million cattle in the country, only 3.5 million are producing milk and they are unable to produce the quantity and quality of milk necessary for the formal market. As a result, **the milk market has a huge unmet demand** with over 90% being served by powdered milk imports, totaling \$140 million.⁸ Bangladesh milk production is not competitive on an international scale. Domestic milk production is 50% more expensive than milk imported from India and Oceania, which prevents the local dairy sector from developing.



"There are so many benefits from this program. My children now enjoy going to school. They are healthy, energetic and bring home good grades."

Parvin, a dairy farmer and mother of three, believes this program is vital to the community and the health and future of her children.

In April 2009, farmers protested against dairy processors who used imported powdered milk instead of locally produced milk by spilling their milk on the streets. Less expensive powdered milk from India had flooded the market and caused the price of local milk to plummet. Consequently, developing the local dairy industry – specifically, increasing and improving local milk production and making the industry competitive – remains the greatest hurdle.

"We have to take a different approach. We need to look at the grassroots level and build the capacity of farmers," Wille said to Nasir on a conference call. Although he remained certain that school milk programs could stimulate local production and serve as a catalyst to develop the dairy value chain, he knew that scaling up the BSNP was essential in reaching its sustainability. Without the program's replication throughout the rest of the country, the BSNP's establishment in only one district of Bangladesh would be insufficient in developing the dairy value chain. It was widely agreed that scaling up the BSNP depended largely upon the government's support.

"No matter how this year's election turns out, there will most likely be no imminent change in the government's policy on school milk programs," remarked Nasir. Over the past two decades, the two major political parties had taken turns ruling the country, which made long-term policy changes a challenge. Although the GoB was planning to implement a pilot school feeding program, the BSNP model was not a preferred choice because of the cost. Food items other than dairy products, such as eggs, bananas and biscuits, had been considered for school nutrition programs. Although these alternatives were less expensive than milk and presented nutritional benefits, they were not contributing to the development of an industry that could have an impact beyond school children. By developing the dairy industry, Bangladesh could relieve its dependence upon imported milk and contribute to local economic development.

Wille knew that Tetra Pak could play an active role in the development of the dairy sector through partnership. Nasir, remembering the article he had read earlier that week in *The Dairy Star*



"I have worked at this shop for over 20 years. We began supplying and selling UHT milk two years ago and I currently sell an average of 13 to 14 half liter packets daily for a price of 28 taka (\$1.00 equals 68.87 Bangladeshi taka). Our profit from milk sales continues to climb."

- A Jamalpur shopkeeper

newspaper, phoned **CARE Bangladesh**, a leading NGO and one of the world's largest private international humanitarian organizations, immediately after his conversation with Wille to discuss how Tetra Pak could get involved in its dairy development project.

AN INTEGRATED APPROACH TO SUSTAINABILITY

CARE had just been awarded a \$5.2 million grant from the **Bill and Melinda Gates Foundation** to help dairy farmers double their income by increasing the quantity and quality of cow milk production. The NGO would also be establishing chilling plants and collection systems, and improving the transportation system linking chilling plants with processors. Nasir, believing Tetra Pak and DeLaval could offer their expertise and add value to CARE's dairy development program, was the driving force in formalizing Tetra Pak's partnership with CARE.

Wille, who was based in Tetra Pak's Indonesia office, and others from the FfDO global team, traveled to Dhaka to join Nasir in a meeting with CARE and

PRAN, Tetra Pak's customer in Bangladesh. Bogdan Krol, DeLaval's Dairy Development Director, Kelly Boucher, Director of Project Development and Training and Jaideep Gokhale, Program Head of FfDO and Environment in India also attended, demonstrating the FfDO's collaborative and concerted approach. This initial meeting led to the signing of a Memorandum of Understanding (MoU) four months later in November 2008 by all three parties who shared the common interest of developing the dairy industry.

PRAN, Bangladesh's largest food processing company, produces and exports fruit juices, snacks and dairy drinks to over 70 countries and is now the sole producer of milk for the BSNP as a result of its efficient supply chain. The company had been processing milk for five years using Tetra Pak processing equipment and packaging. Milk is currently PRAN's least profitable business but the company's owner believes it is good for Bangladesh and has great potential for future business. It currently processes around 50,000 liters of milk per day but envisions producing 250,000 liters in the future.

Other milk processors like Milk Vita and BRAC produce 200,000 and 80,000-100,000 liters of milk per day, respectively. "If we can reach 150,000 liters per day, collecting five liters of milk per household, that means we are dealing with 30,000 farmers on a daily basis. PRAN not only grows its business but also improves the lives of 30,000 farmers and their families," explained Ahsan Khan Chowdhury, Deputy Managing Director of PRAN.

PRAN's goal is to contribute significantly to the growing domestic demand, and it was recently approved for financing by the International Finance Corporation (IFC) to increase its dairy collection and

production capacity. It has established small milk chilling and collection centers in rural areas, enabling small-scale farmers to sell their milk in the formal market. Chowdhury believes "the dairy industry will only be sustainable when we have high levels of milk coming into our system and we are capable of producing our own milk here in Bangladesh. If we develop the dairy industry with inputs subsidized by people like us, then in the long-run the system will work on its own."



"Every morning I go to the local market and sell four liters of fresh milk, conserving three liters for my family. I also have the opportunity to sell my milk at a collection center operated by Milk Vita (the largest milk processor in Bangladesh), but choose to sell it at the local market because it is nearby and I can sell everything within one hour."

- Mosamat Alia Bagum, a Jamalpur small-scale milk producer

In October 2009, CARE Bangladesh, in cooperation with Tetra Pak Bangladesh, Tetra Pak's Food for Development Office and PRAN, will initiate a pilot dairy development project. Its objective is to prove to dairy farmers that by changing their feed composition and providing proper vaccinations and parasite control for their cattle, the daily milk production will increase. The project includes 1,650 dairy farmers, whose yield is projected to increase from **2.5 to 4.5 liters per day** and income per annum per cow is expected to increase from \$131 to \$269, a **112% improvement of the dairy farmers' earnings**. If the economic objectives of the pilot can be met, the intention is to expand the pilot project to cover a total of **10,000 dairy farmers** by the middle of 2011.

LOOKING FORWARD

Upon Tetra Pak's signature of the MoU, Björn Wille felt confident that the company was on the right track towards addressing the challenges faced in Bangladesh. Continuing to support the BSNP would be the first and obvious step to develop the dairy sector, although the program would have to be scaled up. Wille had witnessed other Tetra Pak-supported school milk programs become sustainable through policy changes aimed at improving nutrition. In order for the GoB to change the policy on school feeding programs, elected officials need to be convinced on the long-term health and economic benefits.



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Tetra Pak, Land O'Lakes and future donors need to engage in further dialogue with the government to advocate for dairy-based school feeding programs. Conducting impact assessments and sharing the results with the health, agriculture and education ministries would be critical to substantiate the importance of the BSNP. More importantly, the population of Bangladesh must be made aware of the benefits of the BSNP so that citizens could take an active role in promoting the success of the program and encourage the government to replicate it.

But Wille believes the future of the BSNP depends on more factors in addition to the support of the government. Scale-up and sustainability of the program relies fundamentally on the development of Bangladesh's dairy industry. The dairy value chain will prosper only when farmers are educated and have access to adequate feed and fodder, knowledge of artificial insemination technology and animal health care practices, and a linkage to the formal market. An expanded distribution network that reaches every dairy farmer in every village of the country would build capacity and trigger a radical change in the industry. A public awareness campaign could educate both rural and urban populations about the nutritional benefits of milk. Agricultural policies based on improving nutritional status and health would be necessary to develop the milk market and reduce the dependence on imported milk.

Wille had been involved in school feeding programs in Vietnam, Nigeria and Indonesia and although no country was the same, he recognizes that each program requires a similar approach. According to Wille,

"It needs to be a focused approach in a public-private partnership where the government and the private sector are taking their roles. This can then be combined with resources from NGOs sponsored by local and international donors."

The first steps towards developing the dairy sector had been taken by local and multinational companies which saw the potential long-term return on investment in **150 million prospective milk consumers**. Annual commercial sales of UHT milk had already reached 18 million

liters. Academic researchers have been working diligently to improve the local cattle breed and numerous NGOs have embarked on dairy projects. Although the government has not taken an active role in the dairy sector in the past, it has recently established a **National Dairy Development Board** and passed its dairy development policy framework which included replicating existing pro-poor models that benefited small-hold farmers and promoted milk and the dairy supply chain.

Wille knows that in order to develop a sustainable dairy industry in Bangladesh, diverse stakeholders must take an active role and together develop an integrated strategy. As a member of the **GAIN Business Alliance**, Tetra Pak is already working with GAIN and other stakeholders to assess their business model to create sustainable school feeding programs. Tetra Pak and GAIN are also working together to determine how Tetra Pak technology can be used to ensure that high quality, nutritious and affordable products can be consumed by the consumers at the Base of the Pyramid (BoP).

Building partnerships across sectors - bringing together multinational and local companies like Tetra Pak and PRAN, as well as NGOs, donor agencies, academia and the government - will achieve the greatest impact. The teams of Land O'Lakes, Tetra Pak and BRAC remain optimistic that such a partnership can be established to continue the BSNP. The implementing partners are convinced that by scaling up the BSNP, the program will have a significant impact on the health and nutritional status of the most vulnerable populations and the economic development of the country.

A HOLISTIC APPROACH TO ACHIEVE SUSTAINABILITY

PARTNER: Partner with the government, private sector, NGOs and the academic community to strengthen the dairy development chain.

INCREASE LOCAL DEMAND: Support the BSNP to increase local demand and encourage local production.

RAISE AWARENESS: Develop a public awareness campaign that promotes the BSNP's success throughout the country.

GATHER AND SHARE KNOWLEDGE: Conduct impact assessments of the BSNP and share the results with the government.

ADVOCATE: Create an enabling environment by engaging in dialogue with the government to advocate for school 'milk and biscuit' programs and the development of the dairy sector.

EDUCATE: Initiate and develop a milk marketing campaign to educate consumers on the nutritional benefits of milk consumption.

BUILD CAPACITY: Improve farmers' knowledge of animal health care practices, feed and fodder, and artificial insemination technologies to improve milk quality and quantity and make the dairy industry competitive.

IMPROVE AGRICULTURAL INPUTS: Support research that improves cattle breeds.

FACILITATE LINKAGES: Support the development of a milk marketing channel that links farmers to commercial processors that pay farmers competitive wages.



This paper was prepared by **Katherine Barker** and **Michael Hinsch** (University of Geneva HEC, IOMBA) and made possible by financial and logistical support from Tetra Pak Bangladesh, Tetra Pak Food for Development Office and GAIN, and logistical support from Land O'Lakes.

We would like to thank the following leaders in business, government, academia and civil society for their time and invaluable contributions:

Asif U. Ahmed, Program Director - Economic Empowerment, CARE Bangladesh • **Sharif Uddin Ahmed, Bangladesh Country Manager, Land O'Lakes NGO** • **Dr. Zakir Hossain Akanda, Deputy Chief, Bangladesh Ministry of Primary and Mass Education** • **Dr. Shaheb Ali, Project Director, Breed Upgradation Through Progeny Test Project, Government of Bangladesh** • **Abdullah-Al-Baqi, Operation Manager, Land O'Lakes NGO** • **Dr. Sadhana Bhagwat, Program Associate, Infant & Child Nutrition, GAIN** • **A.K. Fazlul Haque Bhuiyan, Professor, Bangladesh Agricultural University** • **Dr. Ehsanul Bari, Managing Director, Grameen Fisheries & Livestock Foundation** • **Ahsan Khan Chowdhury, Deputy Managing Director, PRAN-RFL Group** • **Mahbub Elahi Chowdhury, Scientist & Unit Head, International Centre for Diarrhoeal Disease Research** • **Amitav Debnath, Upazila Education Officer, Government of Bangladesh** • **Dorothy Feustel, Head of School Feeding and Humanitarian Assistance Branch, USDA** • **Jaideep Gokhale, Program Head of FfDO and Environment (India), Tetra Pak** • **Yusuf Haroon, BSNP Program Manager, Land O'Lakes** • **Ulla Holm, Global Director FfDO, Tetra Pak** • **Farhad Mohsin, Business Development Manager, Tetra Pak** • **Sayef Nasif, Country Director Bangladesh, Tetra Pak** • **Dr. Anisur Rahman, Deputy Secretary, Ministry of Fisheries & Livestock** • **Dr. Rajan Sankar, Senior Manager, South Asia, GAIN** • **Dr. Nazrul Islam Sarker, Deputy Chief, Ministry of Health and Family Welfare** • **Abu Masud Tarafder, Accounting Manager, Land O'Lakes NGO** • **Muhammad Nural Amin Siddiquee, Project Coordinator, CARE Bangladesh** • **Dennis Voboril, Agricultural Counselor, USDA** • **Björn Wille, Director of Product Development and Nutrition, FfDO, Tetra Pak** • **Julian Wolfson, Knowledge Center Manager, Tetra Pak** • **Melandah Primary School** • **Nangla Government Primary School** • **Krishnapur Primary School** • **Pakhadubi Primary School**

ENDNOTES

- ¹ *The Challenge of Hunger 2008*. International Food Policy and Research Institute, Bonn, Washington D.C., Dublin: October 2008.
- ² *Health Action in Crises: Bangladesh*. World Health Organization, Geneva: 2009.
- ³ *Regional Health Situation: Bangladesh*. World Health Organization, Geneva, 2005.
- ⁴ *National Food Policy*. Ministry of Food and Disaster Management, Government of Bangladesh, Dhaka: 2006.
- ⁵ Akter, Ahmed. *Impact of Feeding Children in School: Evidence from Bangladesh*. International Food Policy Research Institute, Washington: 2004.
- ⁶ Ibid.
- ⁷ Hemme, T., O. Garcia and A.R. Khan. *A Review of Milk Production in Bangladesh with Particular Emphasis on Small-Scale Producers*. Pro-Poor Livestock Policy Initiative Working Paper No. 7, Food and Agriculture Organization, Rome: 2004.
- ⁸ *Pro-Poor Analysis of the Dairy Value Chain of Bangladesh*. CARE, Dhaka: 2008.



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