

Workshop on Pakistan Dairy Sector Supply Chain Investment Options

Convened and facilitated by the US-Pakistan Leaders Forum

Washington, D.C., 9 January 2013

CONFIDENTIAL DRAFT Executive Summary

The US-Pakistan Leaders Forum convened a workshop on dairy sector supply chain investment options in Pakistan on 9 January, 2013. The workshop was supported by the Company. The purpose of the workshop was to explore opportunities for public private partnership between the Company, the World Bank, and the International Finance Corporation to catalyze new investment in the dairy sector in Pakistan. The participants have shared and complementary goals: realizing investment returns and fostering economic and social development.

The following key points emerged from the discussion:

Pakistan's dairy sector presents major risks and opportunities for investment. There is a very large informal market for unprocessed milk. Less than 5% of milk consumed is processed. The supply chain is highly fragmented; production, collection and processing costs are high. Margins for incumbent processors are low. Key infrastructure (roads, energy) and institutions (milk quality control, market regulation) are weak. Yet Pakistan is a major milk producer, with significant growth potential for domestic consumption of processed milk, as well as regional exports. With professionalization of management, access to capital, and a clear signal of long-term commitment from processors to the supply chain, there could be highly profitable investment opportunities, with significant additional benefits in terms of nutrition, employment and economic development.

The Company has made a major global investment in the dairy sector as part of its global portfolio. the Company's primary focus is value-added dairy products. It has entered several key markets in the US, Europe, Latin America and Middle East, and is assessing other potential markets. While recognizing the potential for market development and growth in Pakistan, **the Company's primary concerns about Pakistan are the complexity and potential financial risk and uncertain returns.** While the Company has unparalleled "go to market" distribution and sales capacity, and it succeeded in creating an integrated supply chain in potatoes in Pakistan, it does not see a straightforward path to managing the supply chain in dairy.

The World Bank Group has interest in and capacity to foster development of Pakistan's dairy sector. IFC has designed Dairy Farm Commercialization and Farm Financing Facilities, and is exploring investment partnerships with current and potential processors, banks and other investors. It also hosts the Global Agriculture and Food Security Program, which may be able to

provide support for private sector development. The World Bank is supporting the Global Food Safety Partnership, which may offer additional technical assistance for improving quality in the dairy supply chain, with a focus on public sector capacity and regulatory development, and partnerships with private sector processors.

While recognizing the risks and challenges, the **facilitators and participants identified key points of opportunity in the dairy value chain** where the Company, World Bank, and other investors could innovate in order to create value:

- **Input costs** could be reduced by improving access to higher quality fodder, breed improvement, care of cattle, and herd culling.
- **Production efficiency** could be achieved by creating more farms at larger scale.
- **Milk collection** could be made more efficient through long-term off-take contracts, scaling of processor collection, and licensing to ensure milk quality.
- **Processing costs** could be cut by developing on-site energy sources and designing highly efficient production facilities, e.g. using experience from solar powered plants. This option may be particularly attractive given the serious problems for manufacturers dependent on Pakistan's electric grid.
- **Product design** could generate premium, ambient liquid milk products with lower production costs than for UHT products.
- **Distribution and sales** could benefit from innovations in shipping ambient dairy products and deriving cost efficiencies in chilling mechanisms at the point of sale, as well as more effective public sector regulation and quality control for milk products.

Participants considered the specific possibility of developing and testing a premium ambient milk product in another market that poses fewer infrastructure and financial hurdles. Piloting a product elsewhere, then introducing to Pakistan once it has been tested, could substantially mitigate that the market risks in Pakistan.

Participants agreed to continue the exploration of possible dairy sector partnerships, and to look more broadly at Company-World Bank Group opportunities, including manufacturing and stockpiling of Ready-to-Use Therapeutic Foods (RUTF) in regions with high famine risk.

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I. The Company's Global Business and Focus on Dairy

Senior management from the Company provided an introduction to the Company's global business and also provided background information on the Company's involvement in the dairy sector. They explained that the Company is one of the world's largest food and beverage producers, giving it the scale to have a significant impact on consumption practices around the world. They stated that the Company has entered the dairy sector in a strategic way, focusing on value-added dairy products. Currently, the Company's global dairy footprint is significant, with key operations in the several emerging markets and the United States.

In response to questions asked by workshop participants after the Company's presentation, the Company's representatives explained that it is open to considering business development and expansion through both greenfield development and through mergers and acquisitions. Based on the market context and needs and on the product in question, the Company could follow different strategies in different places. In addition, the Company's representatives also explained that the Company's dairy brands have different milk sources in different countries.

II. Smallholder Dairying in Asia

Nancy Morgan, UN Food and Agriculture Organization liaison to the World Bank, provided an overview of diverse smallholder business models that are prevalent in Asia. She noted that both dairy consumption and production are growing rapidly in Asia. After reviewing a variety of smallholder dairy models, Ms. Morgan noted that successful smallholder dairy models are

complex in execution. Successful models provide good economic returns, enjoy policy/institutional support from governments, and are supported by active involvement from the private sector. Key factors influencing the success of smallholder dairying model include economic, institutional, governmental, socio-cultural-environmental, and technical factors. Please see the attached presentation titled “FAO-WB Smallholder Dairy Investment Models” for more information about smallholder business models in Asia.

In response to Ms. Morgan’s presentation, participants noted that the Halla cooperative model in Pakistan has not worked well. Processors have provided technical assistance to commercial farms but have not provided financing. A growing number of farmers can access the formal banking system, however.

III. IFC and Pakistan Dairy Sector Development

Selcuk Tanatar, International Finance Corporation (IFC), provided an analysis of the current state and challenges of Pakistan’s dairy sector and provided an overview of an IFC proposal to provide business advisory support to develop commercial-scale dairy farms and to provide financing in partnership with other investors. Mr. Tanatar explained that 97% of Pakistani dairy farms are subsistence-level farms with less than ten cows. Furthermore, milk passes through a complex supply chain in which only 2-3% of milk, of variable quality, reaches commercial processors, while 15-16% of milk is lost. The dairy sector faces major sustainability challenges relating to improper waste disposal, water and energy scarcity, and heavy reliance on forage and grazing. Mr. Tanatar explained that the smallholder dairy farms will need to upgrade in order to meet growing demand for both quality and quantity of milk and that the IFC has a two-part proposal to help these farms upgrade while also helping new investors enter the sector and establish viable, larger-scale farms more quickly. The IFC’s proposal is to:

- Establish a “*Dairy Farm Commercialization Facility*” (DFCF) in cooperation with the major dairy processors to promote and support upgrading of existing smallholder dairy farms in the supply base of the major processors and to promote and support new investors to invest in commercial scale dairy farms (100+ animals);

- Establish a “*Dairy Farm Financing Facility*” (D3F) in cooperation with major Financial Institutions to extend financing to commercial size dairy farm investors.

Please see the attached presentation titled “IFC Pakistan Dairy” for more information about both the challenges facing Pakistan’s dairy sector and IFC proposals.

In the group discussion following the IFC Pakistan Dairy presentation, IFC representatives explained that their proposals would require a team approach on the farm, involving a bank representative, technical specialists, and others to assist smallholder farms upgrade and larger farms become profitable. A participant noted that most farmers are uneducated and therefore lack modern knowhow in raising livestock; assisting agricultural programs at Pakistani universities and providing microfinance to farmers were suggested remedies. Participants noted that, while productivity per cow is high relative to neighboring countries, Pakistani beef prices are quite low, thereby providing little incentive to cull herds. Participants also noted that government policies do not effectively regulate feed content or hormone use and that aflatoxin levels are quite high.

IV. Global Food Safety Capacity Building Partnership

Brian Bedard, Senior Livestock Specialist, World Bank, provided an overview of the Global Food Safety Partnership (GFSP). The GFSP is a five-year plan for improving food safety throughout the supply chain. GFSP will work with private sector food suppliers to design and implement training programs, facilitate global scaling up, and support ongoing food safety programs. In the dairy sector, the World Bank, IFC, and private sector companies can work together in a variety of ways: HACCP and in-plant programs, government inspectors and auditors, on-farm milk hygiene, DHI programs linked to processors, and farmer organizations. Please see the attached presentation titled “WB GFSP Overview” for more information about the Partnership.

V. The current state of the dairy market in Pakistan

Following the initial set of presentations, the participants discussed in more detail the state of Pakistan’s dairy market. There is an approximately 30% gap between supply and demand, with the shortfall growing significantly in summer months. Some of the winter milk is turned into powder to even out fluctuations, but participants speculated that unofficial import controls must limit imports of powdered milk. Summer prices are estimated at 30% higher than winter prices, with less price fluctuation from larger farms with annual contracts. The price of milk in Pakistan is among the highest in the world, with milk from subsistence farms selling at 40 cents per liter and milk from commercial farms selling at 55 cents per liter at the farm gate.

Subsistence farms produce at lower cost, have lower yields and generally sell in local markets, while commercial farms have higher prices and higher yields, and are more likely to sell to processors (though processors still source a substantial proportion of their supply from small farmers). On subsistence farms the cost of production of a liter of milk is 23 cents, the farm gate price 40 cents, local market collection costs are 7-8 cents, and loose milk sells for 70 cents per liter in local markets. The retail price for Nestle-branded milk is closer to 80 cents per liter. Premium milk sells for 95 cents per liter.

Prices from commercial farms are higher than from subsistence farms due to poor management (operators often lack experience in the dairy sector), the cost of importing cows, hiring of foreign consultants, high land prices which translate to high feed costs, and rents due to a supply shortfall. As a result, the cost of production on commercial farms is 45 cents per liter and the farm gate price is 55 cents per liter compared to 40 cents per liter for subsistence farms. Participants noted that, along with milk prices being some of the highest in the world, quality is highly variable and per capita milk consumption is some of the highest in the world.

Participants noted that some smallholder farmers are already upgrading their farms and that operators are setting up commercial-scale farms with imported cows. Participants noted that costs could not be significantly rationalized on subsistence farms to bring down prices but that creating more large farms, particularly those with at least 200 cows that could be efficiently mechanized, presented an opportunity for growth in the dairy sector. Nevertheless, due to input costs, minimum production costs on large, well-run industrial farms would still likely be about 40 cents per liter.

Along with these challenges, participants also noted an opportunity: less than 5% of consumed milk comes from processors and, with rising urbanization and wealth, the demand for high quality processed milk is increasing.

VI. Company Investment Considerations in Pakistan's Dairy Sector

The Company's representatives highlighted their overarching concerns with the dairy sector in Pakistan. The fundamental challenge of operating in Pakistan is the same as that of operating in any developing economy, save for China: multinational corporations have not yet been able to derive an adequate return on invested capital. Furthermore, infrastructure costs and political uncertainty combine to create a market with high financial risk and uncertain returns.

While the Company has unparalleled “go to market” distribution and sales capacity, and it succeeded in creating an integrated supply chain in potatoes in Pakistan, it does not yet know how to do this in dairy. The Company needs to ensure a sufficient profit margin on products sold, as the desired product portfolio of value-added dairy products would require additional input costs beyond milk.

On the other hand, the Company might be able to mitigate some of the supply chain challenges in Pakistan if it could use the company’s existing ambient distribution system, which is well established and highly efficient. This could be done either through use of UHT milk or by developing a technology that would enable the use of lower quality milk and permit ambient storage, without the full UHT treatment.

In response to the Company’s comments, participants discussed the innovations that the Company has made in areas such as packaging and distributing chilled products and developing a low-cost refrigerator, and recognized the very high commercial potential if a new ambient technology could facilitate liquid milk processing and distribution in Pakistan. Representatives from IFC noted that they have the ability to provide financing for ventures in low-income countries and thereby share risk with a firm like the Company.

VII. Exploration of investment and partnership options

The facilitators and participants identified key points of opportunity along the dairy value chain where the Company, IFC, and other investors could innovate in order to create value.

- **Input costs** could be reduced by improving access to higher quality fodder, breed improvement, care of cattle, and herd culling
- **Production efficiency** could be achieved by creating more farms at larger scale.
- **Milk collection** could be made more efficient through long-term off-take contracts, scaling of processor collection, and licensing to ensure milk quality.
- **Processing costs** could be cut by developing on-site energy sources and designing highly efficient production facilities, as the Company has done with a solar powered plant. This option may be particularly attractive given the serious problems for manufacturers dependent on Pakistan’s electric grid.
- **Product design** could generate premium, ambient liquid milk products with lower production costs than for UHT products.

- **Distribution and sales** could benefit from innovations in shipping ambient dairy products and deriving cost efficiencies in chilling mechanisms at the point of sale.

Please see the attached presentation titled “Pakistan Dairy Value Chain” for more information about key opportunities to create value.

The Company’s representatives said that they could invest in developing a product that is appropriate for the Pakistan market and innovating in the supply chain and distribution of the product. However, there are improvements that would need to be made in terms of the sourcing and supply of milk and milk processing in which the Company would not get directly involved. Representatives from IFC said that they could invest in improvements around sourcing and on-farm services, but would need one or more investment partners to share risk. The Company indicated that the company could in principle act as a co-investor with IFC and share risk, but that another option might be to develop and test a product in another market that is more developed and poses fewer infrastructural hurdles, and introduce the product to Pakistan once it has been tested, thereby substantially mitigating that the market risks in Pakistan.

VIII. Next Steps

Representatives from IFC offered to put Company representatives in touch with IFC officials in other countries where the Company might explore ambient dairy products for low-income countries, and also offered to continue exploration of opportunities in Pakistan.

The parties also discussed opportunities to explore a partnership around the manufacture and distribution of ready-to-use therapeutic foods (RUTFs). The Company’s representatives suggested that RUTFs have the potential to both save lives of malnourished children around the world and prime them for future growth and development. However RUTFs are currently produced in quantities that are too small to meet the need, primarily by NGOs that do not have access to high quality, large-scale production facilities. IFC and World Bank officials responded that they would be very interested in partnering on an initiative of this sort and it could be explored under the IFC’s Global Agriculture & Food Security Program (GAFSP) or under the World Bank’s Secure Nutrition Platform.

The World Bank Global Food Safety Partnership is holding a workshop in March 2013 to convene global food stakeholders. The IFC will explore further opportunities to implement its DFCF and D3F initiatives to support dairy sector development in MENA countries.

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In Attendance:

International Finance Corporation

- Thomas Bauer, Global Dairy Specialist
- Laura Mecagni, Head, GAFSP Unit for IFC
- Gene Moses, Strategy & Knowledge Officer, Agribusiness & Forestry unit
- Mehmet Mumcuoglu, Senior Investment Officer, IFC MENA
- Selcuk Tanatar, Senior Operations Officer, Sustainable Business Advisory

The Company

- Names not listed at this time

World Bank

- Brian Bedard, Senior Livestock Specialist
- Nancy Morgan, Senior Economist

Pakistan Dairy Sector Counterparts

- Syed Babar Ali, Chairman, Nestle Pakistan Ltd. (via conference call)
- Faisal Farid, CEO, Maxim International (Pvt.) Limited (via conference call)

US-Pakistan Leaders Forum

- David Fairman, Managing Director, Consensus Building Institute (facilitating)
- Aakif Ahmad, Co-Founder and Vice President, Convergence (facilitating)
- Rob Fersh, Founder and President, Convergence
- Kiran Pervez, Mellon Fellow, Convergence
- Tushar Kansal, Associate, Consensus Building Institute