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## **Inclusiveness of the Small-Holder Farmer Key Success Factors for Ethiopian Agribusiness Development**

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### **Abstract**

This case uses an example of a progressive women farmer entrepreneur (Hiruth) operating a dairy business in Ethiopia and offer valuable lessons for businesses operating in Africa and elsewhere in the world. While on the market side, the demand for milk based products is on the rise in Ethiopia, the supply side poses several known challenges. Due to supply shortage of the right quality milk, most processing facilities operate at 50% to 60% of their capacity. In such an operating environment, Hiruth has managed to create and grow her business at a rapid pace. This case demonstrates how Hiruth managed to build her supply base loyalty by assuring purchase and quality based price premium and managed to build a fool-proof supply chain. By positioning herself as an orchestrator of the chain rather than just as a buyer has enabled her to build a robust chain and a growing business.

**Keywords:** chain innovation, entrepreneurship, quality based payment, trust building

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## Breaking with Traditions

Hiruth Yohannes is an Ethiopian business woman with a milk production and processing enterprise located in the ChaCha area of Amhara region. She began retailing vegetables at a village level then started a dairy business in 2006. With two cows and some business connections, she managed to collect up to 15 liters of milk per day from a few small-holder women farmers. Back then, she used to dream of expanding. Today, the business supplies the market with 4,500 liters of milk per day. Hiruth bought a dairy processing plant in 2013 and now purchases milk from over 400 small-holder farmers via three collection centers of her own and two dairy cooperatives which are contributing to the livelihood of more than 2,000 people in the ChaCha area.



Hiruth Yohannes showing her stock of provolone cheese

The processing plants manufacture provolone, cheddar, gouda, feta, ricotta, cottage and smoked cheeses. Other dairy products include pasteurized milk, cream, butter and yoghurts. Products are sold directly to restaurants and supermarkets in the Addis Ababa area and she owns *Tsega and Family*, a dairy outlet, in the capital city.

To understand how Hirtuth's, business model is both innovative and unique in Ethiopia, it is imperative to understand the dairy industry in Ethiopia.

## Why Traditional Chain Interventions Fail

In 2011, Ethiopians produced 3.3 billion liters of milk valued at \$1.2 billion USD and imported an additional \$10.6 million in dairy products.<sup>1</sup> The average annual milk consumption of 19 liters (with a population around 93.9 million<sup>2</sup>) in Ethiopia is well below the African average of 40 liters<sup>3</sup>, contrasted with a worldwide consumption of 105 liters. However, Ethiopia has the largest cattle population in Africa: 52 million head, including 10.5 million dairy cattle.<sup>4</sup> The demand for dairy products is very volatile because of the prevalent fasting days, which in some cases can be up to 260 days per year. During a two-month religious fasting season, about 50% of the Ethiopian population refrains from consuming dairy and animal based products. Due to this fasting season, raw milk purchases by processors and consumers fluctuate making it risky for small-holder farmers to invest in dairy production. Consequently, Ethiopia has 10.5 million dairy cows which on average only produce 1.5 liters of milk per day, for 180 days a year, making it among the lowest in the world (Figure 1). Consequently, Ethiopia increasingly imports dairy products into the country.<sup>5</sup>

<sup>1</sup>Production data from FAOSTAT, 2011; Import data from UN COMTRADE, 2011.

<sup>2</sup>www.indexmundi.com (26-1-2014)

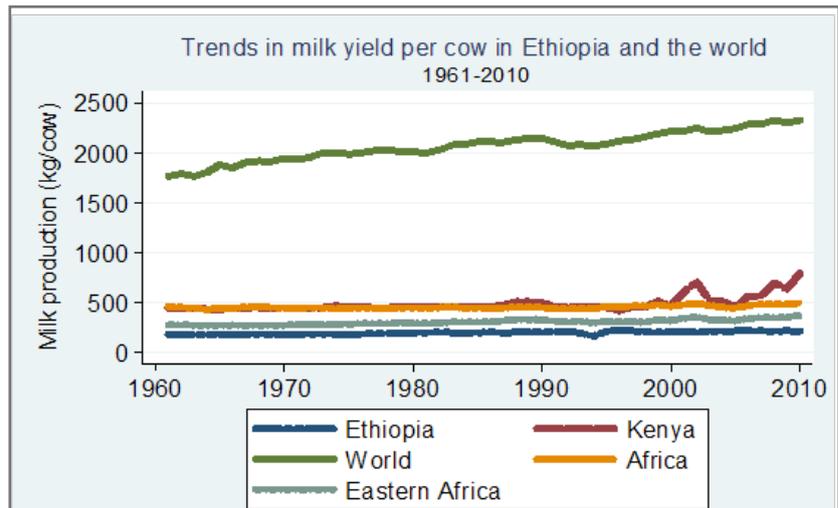
<sup>3</sup>FAOSTAT, 2007

<sup>4</sup>Livestock and Livestock Characteristics, 2012; FAOSTAT, 2011

<sup>5</sup>Value Chain Analysis for Ethiopia, USAID's Agricultural Growth Program – Livestock Market Development Project, 2012

**Table 1.** Productivity per Cow<sup>6</sup>

Country	Yield (KG)
Republic of South Korea	9,616
Israel	9,583
United States of America	9,118
Sweden	8,152
Algeria	1,320
Egypt	997
Sudan	378
<b>Ethiopia</b>	<b>270</b>
Tanzania	174

**Figure 1.** Trends in Milk Yield per Cow <sup>7</sup>

The Ethiopian dairy value chain is characterized by both formal and informal channels. Only 5% of the milk produced in Ethiopia is sold in formal commercial markets.<sup>8</sup> There are 23 formal dairy processors currently active in Ethiopia and their new processing facilities are in various stages of development. These processing facilities operate at 50 to 60% of their total processing capacity<sup>9</sup>. The challenges which lower capacity utilization are the lack of reliable milk supply and the demand fluctuations (peaks and valleys) created by the fasting seasons.

Overall, the market for dairy products is on rise because of population growth, increased urbanization and income levels. The economy has experienced strong and broad growth over the past decade, averaging 10.6% per year in 2004 – 2011 compared to the regional average of 4.9%. The expansion of services for the agricultural sector accounts for most of this economic growth. Private consumption and public investment explain the demand side of the growth. Additionally, the government aspires to help Ethiopians reach middle income status over the next decade.<sup>10</sup>

### Need for a New Approach to Bridge Demand and Supply

The Ethiopian dairy production and market systems face typical constraints that exist throughout the agricultural sector and other developing countries. Productivity at 1.5 liters per cow, per day is relatively low due to poor genetics, insufficient access to proper animal feed and poor management practices. Furthermore, as the critical distribution elements such as milk collection, chilling and transport are not well organized; it leads to lower economies of scale. Consequently, transaction costs are high, and up to 20-35% of milk is spoiled or otherwise lost. On the value addition side, lower utilization of processing facilities is leading to relatively high production costs. All the above indicate status-quo conditions where expanded services result in pasteurized milk produced at about the same price as in the US (where the average GDP per capita is about 40 times that of Ethiopia).<sup>11</sup>

<sup>6</sup>Ethiopia data is IBID, all data is for production year 2006 – 2008, from Statinfo.biz <<http://statinfo.biz/Geomap.aspx?act=6243&lang=2>>

<sup>7</sup>FAOSTAT, 2011

<sup>8</sup>Livestock and Livestock Characteristics, 201

<sup>9</sup> Value Chain Analysis for Ethiopia, USAID's Agricultural Growth Program – Livestock Market Development project, 2012

<sup>10</sup>The World Bank, Ethiopia Overview; <http://www.worldbank.org/en/country/Ethiopia/overview>

### *Opportunism Leads to a Stand Still*

Central to these problems is the lack of a solid supply chain for small-holder producers to get their milk to the market. Business-to-business relationships are not well developed and in most cases non-existent, making it very risky for small-holder producers to invest in production and productivity. Although investments at a small-holder level could enhance milk productivity it does not make sense in a less established value chain or in a market where the demand volatility is also high.

### *Investments in Soft Skills and Trust Represent a Good Base for a ROI*

In order to overcome the chain-wide problems, a new value chain development model was introduced and developed in Ethiopia that focuses on strengthening the business-to-business (B2B) relationships to enable win-win opportunities for all chain players (producers, processors and consumers). The new development model builds upon the existing production systems and focuses on market driven business relationship development for small-holder farmers and looks for ways to increase productivity, limit transaction costs, while reducing spoilage and increase investments.

### *A New B2B Development Model Based on Trust Building*

Hiruth found a way to overcome both challenges: 1) improve the quantity and quality of milk production and 2) overcome the volatility in the consumption during the year. Hiruth received support from USAID's Livestock Market Development project to develop her business and supply chain. This holistic approach was the key to her success in more precisely establishing business relationships with her suppliers. Among her suppliers, only two are relatively big supplying about 250 liters a day; the rest are small scale dairy producers supplying an average of eight liters per day. Hiruth receives her daily raw milk from two cooperative unions and three personally owned collection centers. In addition to milk collection, the collection centers ensure quality control before purchasing the milk from the producers. In essence, Hiruth's success was derived out of her ability to establish a supply network based on partnership.

The other challenge was to overcome the consumption fluctuation. The USAID project also provided technological support for processing milk into dairy products thus enhancing both the value and shelf life. Additionally, project support enabled the production of pasteurized milk into wide varieties of cheeses and other dairy products.



Milk/cream separation at Hiruth's processing plant.

## **How to Achieve, the Details of Success**

The procurement and processing strategy outlined above does not guarantee Hiruth's raw milk supply is of the required quality and quantity. Hiruth must regularly compete with other buyers and competitive informal markets for her milk supply. In order to overcome these challenges, Hiruth works with her producers in a

<sup>11</sup>GDP per capita, PPP (current international \$), World Development Indicators database, World Bank

<sup>12</sup>Visser, P. M. Steen e.a. 2012. *Pro-poor value chain development. Private sector les innovative practices in Ethiopia. SNV Business Organisations and their access to markets BOAM Program.*

number of different ways to establish long-term, win-win relationships with small-holder dairy producers. These key actions include:

1. Hiruth provides feed to her suppliers—feed availability is a major constraint in the Ethiopian dairy sector.
2. Not only does she provide feed to suppliers, she also provides it to them on credit which is paid back through milk sales. This reduces the risk for producers in having to invest in feed.
3. Hiruth works with feed suppliers to educate producers on the benefits using additional animal feed.
4. A crucial element in Hiruth's outreach program is that she buys the milk from her suppliers every day, independent of fasting seasons during which Ethiopians consume little animal based products when the majority of buyers do not buy from producers.
5. A transparent quality based payment system is implemented. (Two grades include the quality criteria per grade; transparently announcing prices for the grades of milk; and quality control done at the collection center in the presence of the supplier).
6. A higher price is paid to suppliers for premium quality milk.
7. Hiruth has contracts with the two cooperatives she is buying from. Although, in the Ethiopian context this is not a major guarantee as there is no enforcement or in many cases an intention to sell.

Hiruth's business model is built on a foundation of trust. Trust needs a solid base, positive transactions and operational experience. These are the principles by which Hiruth operates the business.

By offering milk producers a guaranteed market for their milk, she motivates them to make necessary investments. Hiruth's strategy is to focus on the quality of the milk as defined by bacterial count and fat. While a lower bacterial count reduces the loss of milk due to contamination and waste, a higher fat content provides a better value extraction.

### **Quality Incentive Alignment**

Hiruth introduced a quality-based payment system, mainly on fat content, for her milk supply. Accepted milk is classified into two grades based on measuring the bacterial and fat content. The better graded producers are compensated with 9,00 birr while the other graded suppliers get 8,60 birr per liter. This progressive incentive mechanism motivates milk producers to focus on quality and carry out investments such as the purchase of better quality feed, lower adulteration and better storage conditions for the milk. Consequently, the quality based payment system and the rejection rate of milk decreased from 7.5% to almost 0% soon after introduction.

Hiruth supplies high quality animal feed to her suppliers on credit in order to increase the volume of milk produced. Due to the better feed availability, producers now get from two to three liters of additional milk per cow, per day. This results in \$5 USD of additional turn over and \$2.50 in additional income per day, more than doubling their income from dairy production. Farmers also make use of the feed supply opportunity and invest in better animal feed, due to the embedded service of knowing that Hiruth will buy their milk.

Hiruth is guaranteed a milk supply of both quality and quantity while producers are assured they will be well compensated with almost no rejections. This leads to higher quality products and better prices for consumers: a win-win situation for farmer, processor and consumer.

## **Applying the B2B Development Framework**

Based on Hiruth's case study, it can be concluded that the key success factor for the B2B development framework is that of a private business person who is able to build relations along the chain. Bridging the huge market potentials and constrains in the supply chain require building trust, creating long-term partnerships, economies of scale and most importantly creating win-win opportunities for all chain players including consumers. A holistic market and business driven approach contain these key elements: innovation to increase production and quality at the level of the farm, input supply and farm services, new logistic concepts to collect farm products from smallholders to create major flow of products, new governance structures based on quality controlled supply, fair share and transparency and embedded services (input supply, veterinarian, training etc.) for small-holders, product diversification to create high added value, extended shelf life, and new contract forms and loan systems.

This whole package of chain actions increased the level of trust between Hiruth and the small-holder farmers. Hiruth signed supply contracts with two cooperative unions which would enable her to procure most of the milk supply from the cooperative unions.

## **Next Steps and Challenges**

Hiruth's main challenge is access to working capital. Due to the fasting seasons, which last up to two months, a significant number of the Ethiopians consume no animal based products. Hiruth only sells limited quantities of pasteurized milk, and dairy products while she continues to buy from her suppliers to keep her business relationships protected while fully using her processing capacity. During this period she produces butter, cheeses and yoghurts, which she stockpiles. At the same time she pays her suppliers every two weeks for the supplied milk. Supermarkets only pay her every 45 days for the milk and dairy products she supplies them. The bank loan payment is also due, so consequently, her liquidity problems are significant. This implies that Hiruth requires three months of working capital to meet her turnover and bank loan obligations. This is Hiruth's primary challenge. Hiruth is seeking support from USAID's Livestock Market Development project in order to overcome this obstacle.

Hiruth sees opportunities to serve other areas of the country (other urban areas foremost). But, this will require additional business plans and access to additional funds and finance. A key component to realizing this goal is by further expanding her territory and setting up additional collection centers. The USAID's Livestock Market Development project is supporting her in this regard as well.

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