AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
http://ageconsearch.umn.edu
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Journal of Food Distribution Research
Volume 45 Issue 3

Local Food Systems and Interactions with Entrepreneurship

'Better Butter' Opportunities for Local Food and Entrepreneurship[1]

Becca B.R. Jablonski

Postdoctoral Fellow, Department of Agriculture and Resource Economics, Colorado State University
Clark B-338, Fort Collins, Colorado, 80523-1172 USA
Phone: 970-491-6133 Email: Becca.Jablonski@colostate.edu

Abstract

Kriemhild Dairy Farms, started in New York by Bruce and Nancy Rivington in 2010, has expanded rapidly in response to changing market conditions spurred by growing demand for 'local' and 'pasture-raised' products. Kriemhild's entrepreneurial strategy for producing and marketing its pasture-raised butter takes advantage of the company's ability to leverage alternative (local food system) and conventional resources and infrastructure. The Kriemhild example highlights the importance of: 1) the farm's scale of operation; 2) the existence of local processing, warehousing, and distribution infrastructure; and 3) the ability to navigate between and capitalize on conventional and 'alternative' supply chains.

Keywords: local food; entrepreneurship; pasture-raised dairy; butter; supply chain

[1]This paper was prepared for the National Agricultural & Rural Development Policy Center themed collection on *Local Food Systems and Interactions with Entrepreneurship* and was supported by competitive grant no. 2012-70002-19385 through the U.S. Department of Agriculture, National Institute of Food and Agriculture.

"You can go back to eating butter, if you haven't already"
Mark Bittman, *NY Times,* March 26, 2014

Mark Bittman's March 26, 2014 op-ed column in the NY Times entitled "Butter is Back", references what the owners and founders of Kriemhild Dairy Farms, LLC (pronounced cream-hild) are banking on: consumers' perception that "if you raise fewer animals, you can treat them more humanely and reduce their environmental impact. And [you can] enjoy the better butter, too."

This case study profiles Kriemhild Dairy Farms, LLC (Kriemhild), owned by Bruce and Nancy Rivington, and the entrepreneurial strategy this operation took in response to the local food system's changing market conditions. The Kriemhild example highlights the importance of: 1) the farm's scale of operation; 2) the existence of local processing, warehousing, and distribution infrastructure; and 3) the ability to navigate between and capitalize on conventional and 'alternative' supply chain infrastructure.

Farm Profile

Though Bruce and Nancy Rivington both started farming on conventional dairies in Canada, where the majority of the cows' nutrient requirements were met through grain, they made the decision to start to graze their herd in 1994. Their transition to rotational grazing was not brought on by an environmental rationale, or the potential for a premium from pasture-raised milk sales, but rather a perceived opportunity to make the dairy more profitable by reducing input costs. After a few years of grazing, and attending several workshops, Bruce saw that for the operation to be fully seasonal and profitable enough to support his family, he would need to expand the herd size. Given that the farm was in Canada (30 miles west of Ottawa), and thus subject to Canada's milk supply management system (Canadian policy restricts the supply of milk by limiting and controlling domestic production through a quota system and instilling high tariffs on imports), the Rivingtons determined that expansion in Canada was not realistic. In 2000, they sold their farm and moved with their four children to rural Hamilton, New York (population 4,197, U.S. Census 2012), where they purchased 519 acres, and found another 280 to lease. They named the farm Red Gate.

At the end of their first year in New York, the Rivington family milked 200 cows. They expanded in 2008, milking 500 cows at their peak with five full time employees; they now own 736 acres and rent another 845. Relative to other dairy farms in New York (NY), Red Gate is a large operation. According to the 2012 Census of Agriculture, over 90% of dairy farms in NY milked less than 200 cows (USDA NASS 2012).

Wary of potential restrictions resulting from membership in a dairy cooperative when they moved to the U.S., Bruce and Nancy decided to sell their raw milk to one of the few independent milk purchasers in the region, Queensboro Farm Products, LLC (Queensboro).[2] Queensboro was

[2] The share of all milk delivered to plants and dealers in the U.S. by cooperatives was 86% in 2002 (USDA RD 2005). By virtue of being an independent, either Red Gate or Queensboro can terminate their relationship with 30 days' notice.

established in 1909. At its peak Queensboro owned and operated 13 milk plants throughout NY and Pennsylvania. Today they have one remaining plant, in Canastota, NY (purchased in 1931), which processes a small percentage of the milk from the 250 farms from which it purchases product. The remainder of the unprocessed milk is shipped throughout the Northeast as Queensboro mainly functions as a supply-balancer and broker. In 2013, Queensboro reported sales of almost $20 million and had 80 employees (U.S. Business Catalogue 2013).

Company Profile

The Rivington family has always been entrepreneurial. In 2003, they built a small cheese-room adjacent to the milking parlor. One of their sons, Brian, took a cheese-making class at the local University and started making the cheeses that they sold at the Hamilton farmers' markets. However, the small-scale value-added operation ceased in 2006 when Brian decided to return to school.

Through Brian's interactions with customers at the Hamilton farmers' markets, and Red Gate's active participation in a discussion group with 'grass farmers' from across the U.S. (the 'Prograssinators'), Bruce and Nancy recognized that there was growing (and unmet) demand for differentiated, value-added dairy products that could be labeled with certain key attributes like pasture-raised or grass-fed. Additionally, they were frustrated by the constant fluctuations in commodity milk pricing, and saw a value-added product as a way to generate more consistent and higher income.

In 2007, a group of Madison County dairy farmers interested in exploring opportunities for value-added product development started to meet with support from the newly-established Agricultural Economic Development Program in Madison County (under the umbrella of Cornell Cooperative Extension), and with funding from the Northeast Sustainable Agriculture Research and Education (NESARE) program.[3] In 2010, four of these dairy farm families formed Kriemhild Dairy Farms, LLC.[4] Though all four families played an important role in establishing the company, there were irreconcilable differences in determining the standards for 'pasture-raised' (Red Gate was the only operation practicing intensive rotational grazing and that was fully seasonal – i.e., dried off their herd in the winter months when grazing is not an option in Upstate NY). In 2012, Bruce and Nancy bought the ownership shares of the other three families.

Kriemhild's original business plan established the need to maintain low overhead by working with existing processors. Given the complex structure of dairy commodity supply chains, and the highly-perishable nature of raw milk, the most expedient way to develop a new differentiated product was to work with Queensboro directly – Queensboro already picked up the milk from Red Gate Farm, and had a market for the by-products. Additionally, Queensboro had additional capacity at its facility, and previously entered into a space leasing arrangement with another

[3] For more information of the NESARE grant (Project Number CNE08-040), please see: http://mysare.sare.org/MySare/ProjectReport.aspx?do=viewProj&pn=CNE08-040

[4] The name Kriemhild emanates from the name of the original Holstein herd of Holstein-Friesian cattle that were born, raised and registered in the United States. This particular herd holds a unique value to Madison County, as the herd resided in Peterboro, NY (located in Madison County) in 1929, raised by Gerrit Smith Miller, grandson of the famous abolitionist, Gerrit Miller.

dairy manufacturer, Leblon Foods, Inc.[5] Given the relatively-large size of the Rivington's operation (in 2012 the farm was producing approximately 25,000 pounds of milk per day), Kriemhild was unable to utilize all of the farm's milk at the onset and, thus, Red Gate needed to maintain access to the commodity milk market. In 2013, Kriemhild made 53,190 pounds of butter. Manufacturing one pound of butter requires 21.2 pounds of whole milk; Kriemhild used 1,127,638 pounds of milk in 2013, representing approximately 37% of Red Gate's production.

Though Queensboro had reduced its internal processing capabilities, it was well-known locally for the butter it made at its Canastota plant. Kriemhild decided to work with Queensboro to co-pack butter, using milk from Red Gate that Queensboro would keep segregated (in this respect, it was lucky that Red Gate was large enough to fill up an entire milk truck, otherwise this would have added an additional untenable expense). To further differentiate the butter, Kriemhild decided to produce it with a higher fat content (85% versus 80% for conventional butter) as well as with a barrel churn characteristic of a European-style product demanded by many chefs for its unique cooking properties.

Kriemhild's premium butter utilized some of the cream produced by Red Gate's cows, however it required none of the skim milk. Serendipitously, during the 2000s several large-scale Greek yogurt-manufacturing plants opened in Central New York (e.g., Fage, Chobani), which increased the demand for skim milk. Queensboro agreed to act as a balancer for the milk components that Kriemhild would not need. Queensboro and Kriemhild established an arrangement whereby Kriemhild purchases the cream from Queensboro, and pays a Queensboro employee (in conjunction with their own employees) to make and package the butter. From May to November, 2013, Kriemhild manufactured 36 batches of butter with four paid employees and one unpaid employee, each of whom worked approximately seven hours per batch.

In 2012, Kriemhild's first year of full-season production (May-November), the company had gross sales of $74,000. In 2013, revenue grew by over 300% to $223,000, and the business turned a profit for the first time.[6]

Business Situation: Opportunities for Entrepreneurship due to Interface with Local Food System

Kriemhild operates at the nexus of alternative (local food) and conventional food systems. To some extent this is a result of Red Gate's scale. For example, the fact that Red Gate's production was of adequate volume to fill an entire milk truck allowed Kriemhild to maintain relatively low transportation costs associated with keeping its milk segregated from farm to processor, and thus to sell butter at a price point that worked for many larger volume/mainstream purchasers. This section provides examples of the ways in which Kriemhild has been able to leverage alternative and conventional resources and infrastructure.

[5] It is worth noting that Leblon Food Inc's owner relocated his family from New York City to Canastota because of the opportunity to manufacture product at Queensboro—suggesting the uniqueness of a plant of Queensboro's scale willing to enter into this type of arrangement.
[6] Note that Kriemhild and Red Gate function as entirely separate companies. The values provided only reflect Kriemhild's revenue.

Financing

When Kriemhild first opened, it financed its operations through the traditional banking relationships Red Gate Farms had developed, particularly with Farm Credit East. However, given that Red Gate was already heavily leveraged, Bruce and Nancy needed to explore other options. Through discussions with potential customers, the Rivingtons learned about 'alternative' financing initiatives that were just being developed by entrepreneurs interested in increasing the availability of local foods, and who recognized that local food enterprises were not always 'bankable' in the traditional sense. One of these opportunities was facilitated by a company called Credibles. According to the *NYTimes*, Credibles is a new investment model, the idea for which arose from the Slow Money movement (focused on finding new sources of capital for small farms and other food enterprises) (Hirsch 2012). The Credibles concept is that 'good' food takes time to produce before it gets to the table. Historically it has been the responsibility of farmers to pre-finance food; Credibles shifts the responsibility and provides the working capital to cash flow farm operations – similar to a Community Supported Agriculture (CSA) model.

Kriemhild's webpage on the Credibles' website offers customers the opportunity to pre-purchase butter, the commitment from which will enable Kriemhild to make business investments such as purchasing the necessary equipment to expand their product line, install renewable energy systems such as solar thermal, and retrofit a drainage system which will allow them to turn waste water into irrigation water for the pasture. Customers can choose how much they want to pre-pay, different amounts yield various benefits from Kriemhild. For example, the larger the amount pre-paid, the more discounted the per-unit price of butter. Although Kriemhild has raised a very small amount of money to-date through Credibles ($641.25), the relationship has connected the business with a network of other potential investors in the Slow Food Community, and their affiliated investor group, Foodshed Investors, in NY. Kriemhild is hopeful that this group of angel investors can help them to finance their next phase of expansion. Additionally, Kriemhild intends to launch a crowdfunding campaign in the near-term to better take advantage of their growing network of alternative funders.

Kriemhild has also leveraged government resources to support their operation. In 2011 Madison County was awarded a $56,000 Rural Business Enterprise Grant from the U.S. Department of Agriculture Rural Development Agency to purchase a butter-filler housed at Queensboro (the butter filler enabled Kriemhild to automatically fill the tubs of butter, rather than hire an employee to do this by hand). The total cost of the filler was $78,000. According to the terms of the grant, Kriemhild 'rents' the equipment from Madison County at approximately one-third of its value for ten years, after which Kriemhild will own the equipment. Kriemhild was also awarded a grant for $4,500 from the Partnership for Community Development's Micro-Enterprise grant program (a not-for-profit organization started by members of the Village of Hamilton) to facilitate business expansion.

Warehousing and Distribution

The ability to affordably store product is important to Kriemhild's success as the company only manufactures butter when the cows can get the majority of their nutrients from pasture (roughly May to November). As most customers (particularly retailers) require product on the shelf year-

round, Kriemhild must manufacture and store enough product to satisfy its customers throughout the winter months. In 2012, Kriemhild stored product at two locations: 1) Queensboro; and 2) Regional Access, LLC., a local foods aggregation and distribution business (food hub) that has a 25,000 square foot warehouse in Trumansburg, NY. Due to Kriemhild's growth in 2013, they had to add on a third storage facility, and chose Americold, a 583,000 square foot cold-storage warehouse located in Syracuse, NY. Note that all of these pieces of key supply chain infrastructure are relatively proximate: from Red Gate to Queensboro is 26 miles one way, Queensboro to Americold is 32 miles, and Queensboro to Regional Access is 87 miles (see Figure 1).

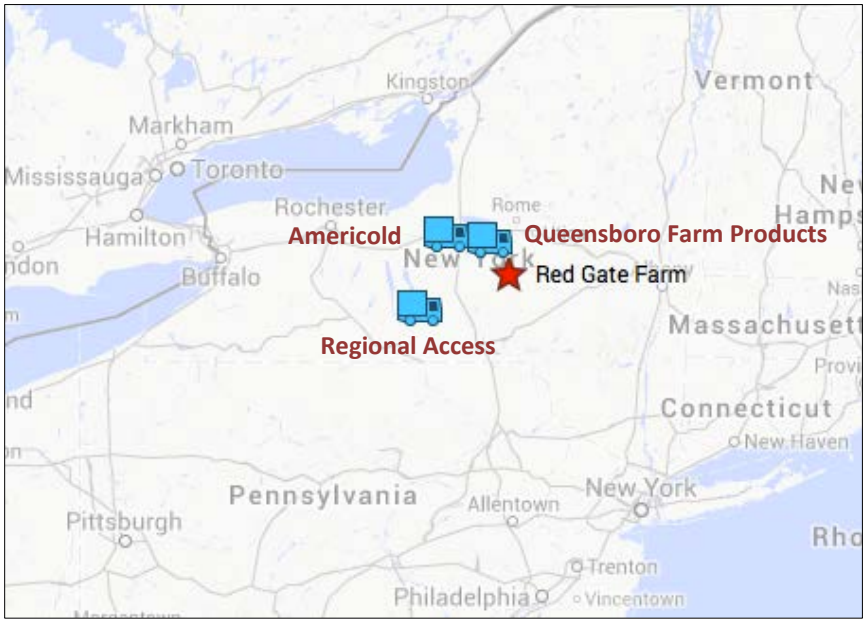

Figure 1. Map of Red Gate Farms, Warehousing, Processing, and Distribution Infrastructure Utilized by Kriemhild Dairy Farms

Source. Google Maps 2014

The advantage to Kriemhild of storing product at Regional Access is that the food hub also functions as a distributor and marketer. In this sense, the food hub is a more vertically integrated system that helps to reduce the transaction costs associated with storing, distributing, and marketing products to smaller-scale stores. Accordingly, the product that Kriemhild has opted to store at Americold is generally intended for larger-scale purchasers that have their own distribution vehicles.

Marketing

When Kriemhild first launched its butter, it did so through local-food oriented markets: the Hamilton farmers' market and a small-scale food hub (CNY Bounty, LLC). They have found continued success in these types of markets, and have capitalized on the number of start-ups catering to consumers eager for the convenience of home delivery, and the sustainability attributes of local. Sales through Quinciple (http://www.quinciple.com/), Good Eggs

(http://www.goodeggs.com), Wholeshare (http://www.wholeshare.com/), Fresh Direct (https://www.freshdirect.com) and others represented 13% of Kriemhild total sales in 2013 (note that many of these sales are made through other distributors or food hubs). Kriemhild anticipates total revenue from these local food markets to increase by 50% in 2014.

There are also several 'specialty' distributors, restaurants, and retail shops whose emergence emanates from growing interest in local food. Distributors like 'Food Matters Again', restaurants such as 'The Tailor and the Cook', and specialty local food butcher shops like 'Side Hill Farmers' need companies like Kriemhild (that can provide high-quality products dependably, and at affordable prices) as much as Kriemhild needs them.

Another important and growing local food sales outlet for Kriemhild is other farms' Community Supported Agriculture (CSA) operations and farm stores. These CSA operations want to provide their 'shareholders' with a more diversified product offering than each farm can produce itself. In 2013, sales to other CSAs or other farms' stores represented over 6% of Kriemhild's revenue (see Figure 2). Though actual revenue per CSA was small (an average of $1,000/farm), 14 farms offered the butter to their shareholders, and Kriemhild has already received additional requests for the 2014 season.

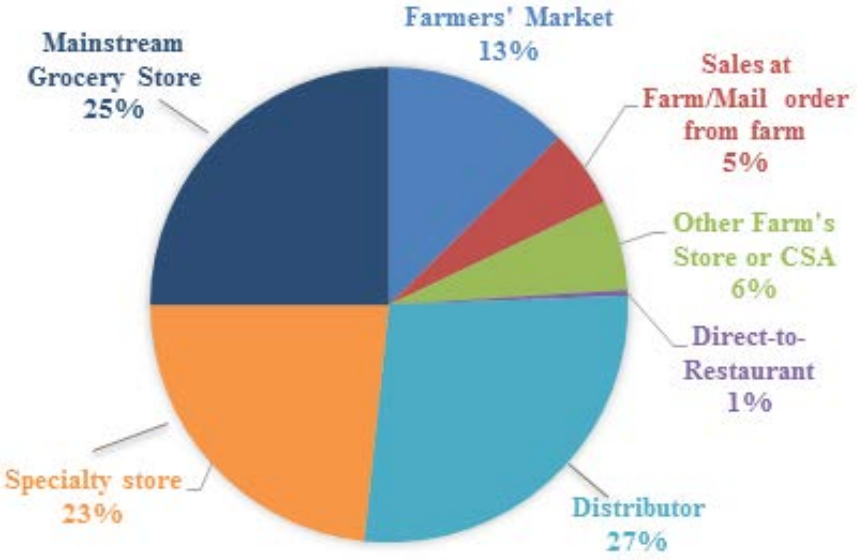

Figure 2. Kriemhild Farms LLC 2013 Sales by Market Channel

Even as Kriemhild grows, it continues to sell at farmers' markets. Though direct sales from the farmers' markets are small (particularly when looking at the net impact, subtracting labor costs and vendor fees), Kriemhild appreciates the opportunity these markets provide for direct consumer interaction. Kriemhild Manager, Lindsey Jakubowski, referred to farmers' markets as a "grassroots mobilization opportunity" citing as evidence that "most of Kriemhild's customers are downstate [approximately 200 miles from the farm], but almost all of [their] Facebook likes are local" (Figure 3 provides a heat map of customers by location). In 2013, Kriemhild participated in 10 farmers' markets, the sales from which comprised 13% of revenue (see Figure 2).

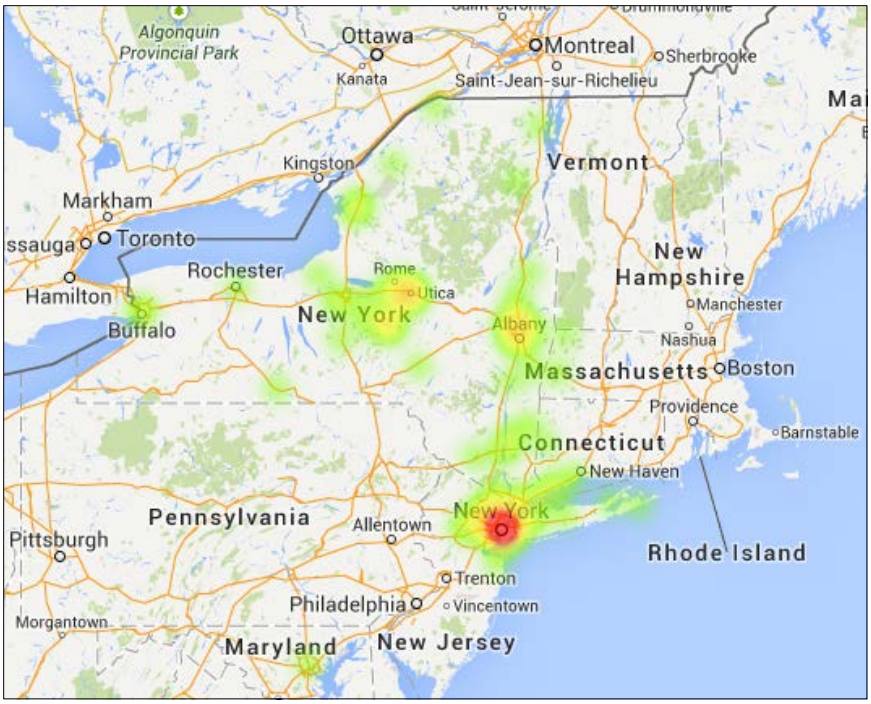

Figure 3. Heat Map, Kriemhild Customers by Location (20 mile radius)

Source. Google Maps 2014

Though these local food outlets have been critical to Kriemhild's 2013 growth, the importance of the company's ability to penetrate mainstream markets and conventional supply chains should not be underestimated. Through its weekly booth at the Hamilton farmers' market, Kriemhild made the acquaintance of an individual with close ties to a nationally recognized mainstream grocery retailer (due to confidentiality the retailer cannot be named). This relationship precipitated the retailer to make an exception to its policy of purchasing products only from purveyors that could supply adequate volume for all of its stores throughout the U.S., and try out a 'regional' product. A full 25% of Kriemhild's revenue in 2013 came from this mainstream grocery retail outlet (see Figure 4). According to Lindsey, sales to this mainstream grocery store require substantially less labor per unit of butter sold (Kriemhild delivers the product for storage at Americold, and the retailer's vehicles do the remainder of the distribution), and thus the net impact of growth in this particular channel has been important.

One of the most interesting aspects for Kriemhild of navigating these alternative and conventional markets is the very different ways in which they do business. To participate in more conventional-type markets, Kriemhild is expected to deal with the just-in-time delivery model where the store calls and needs product the next day. Kriemhild must provide the product right away, or risks losing that customer. Planning for this type of business model is difficult, and requires substantial risk for Kriemhild (they pay to produce and store product without a guaranteed market). Alternative businesses have been much more flexible. For example, Regional Access will store product at its warehouse until a particular customer needs more, allowing a longer lag between an order being placed and fulfilled. Credibles' customers pay up-front for product and pick it up from the farm or farmers' market on an as-needed basis (product

is stored at Red Gate farms, which is possible as long as Credibles remains a relatively small-scale market). The additional flexibility of these alternative markets is important, particularly for a company that can only produce product seasonally, and thus needs more support in its planning and supply chain management.

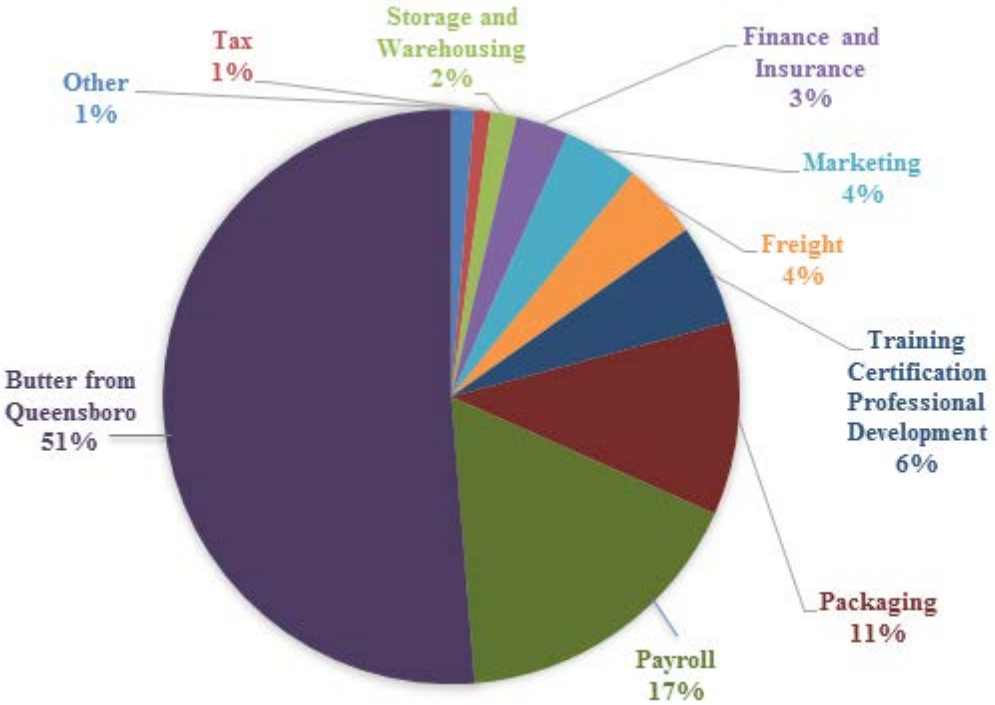

Figure 4. 2013 Expenditures as Percentage of Total, Kriemhild Dairy Farms LLC

Community Impact: Opportunities and Challenges for Future Growth

Kriemhild's original business plan established the need to maintain low overhead by working with existing processors, distributors, warehouses, and marketing firms–in other words, minimizing its financial capital investment, by investing in developing social capital – i.e., relationships with businesses and individuals throughout the community. As a result, on a small-scale Kriemhild helps to support local businesses, many of which are located in rural areas with limited opportunity for growth (for example, Kriemhild's printer has consistently higher prices than its online competitors, but it is a long-established third-generation company with a downtown storefront that sponsors local little league teams and community events).

The decision to work with these local businesses is not solely altruistic, but it has potentially important firm-level and community economic impacts. Figure 4 presents Kriemhild's 2013 expenditures as a percentage of total, and Figure 5 shows total expenditure as percent local (New York). Over 50% of Kriemhild's total expenditure is with Queensboro to purchase the cream and support the manufacturing of the butter (recall that Red Gate sells its raw milk to Queensboro, and Kriemhild purchases the cream and manufacturing support from Queensboro). The second largest expenditure item is employee compensation (for three full-time equivalents). In total, 90% of Kriemhild's 2013 expenditure was local, defined here to mean within the State (Figure

5). Compared to similar sectors in NYS, Kriemhild spends a much higher than average proportion of its expenditure locally (77% for dairy cattle and milk production, 72% for fluid milk and butter manufacturing) (IMPLAN Group LLC 2012).

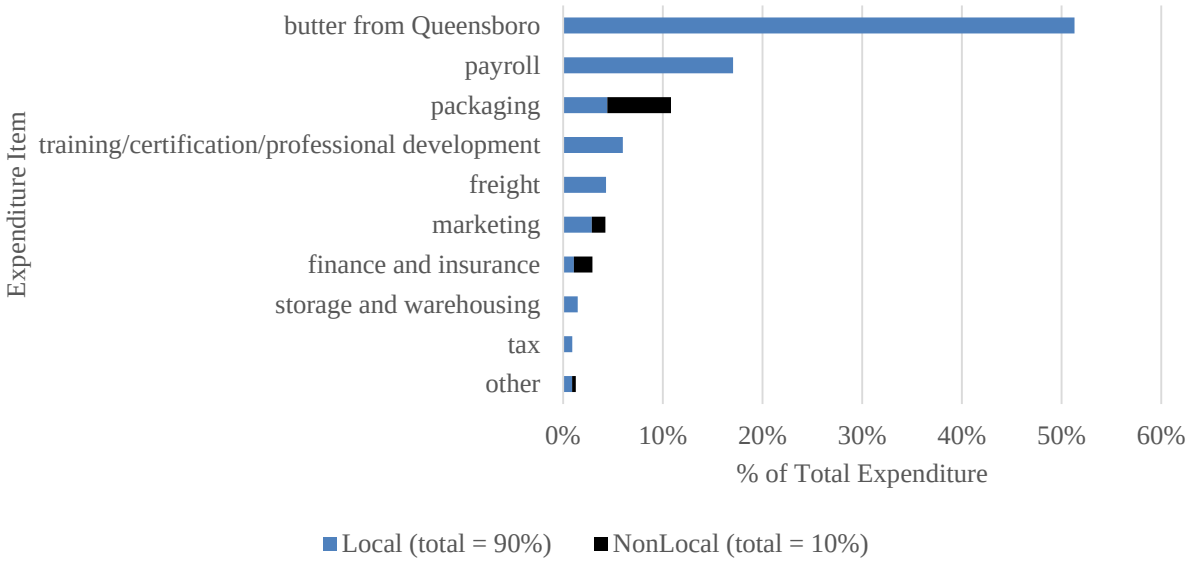

Figure 5. 2013 Local Expenditures, as Percentage of Total (local is defined as New York State)

Kriemhild and its employees also work hard to build excitement around agriculture; they understand that the more interest in and support for locally-grown products, the better their business and local economy will perform. For both the CSA and farmers' market sales channels, the social networks and relationships developed are perhaps of greater importance than the direct short-term financial gains. Through the farmer-farmer interactions, and farmer-consumer interactions, Kriemhild and the Rivingtons have become mentors and spokespeople for local farms. Bruce works to help new and established farmers, particularly with his involvement on the Cornell Cooperative Extension Agricultural Economic Development Program Committee. Red Gate and Kriemhild also partner with the local U.S. Department of Agriculture, Natural Resources Conservation Service District Office to host grazing events (pasture walks) on the farm, and participate in the annual Open Farm Day celebration sponsored by Cornell Cooperative Extension. Additionally, in 2013 Red Gate and Kriemhild hosted students from John Bowne, a high school in New York City that has an agriculture program, to educate students about farming, processing, and marketing value-added products. The Rivington family also supports students from Morrisville State College (part of the State University of New York) through internships, and facilitates class tours from nearby Colgate University. Cumulatively, these relationships and events have heightened awareness of and excitement for farming, and the region is experiencing growth in farm numbers compared to neighboring counties (Madison County had the largest growth in farm numbers in New York between 2007 and 2012 at 13%, US Census 2012).

Looking Ahead

Kriemhild's main challenges for generating future growth are related to co-packing and include: space constraints; lack of quality control (Queensboro limits Kriemhild's involvement in the processing process); inability to develop other products; and, lack of bargaining power (particularly with regard to pricing for services). As mentioned above, the types of services that Queensboro provides for Kriemhild are unique, putting Queensboro in a more powerful negotiating position; finding another co-packing arrangement would be difficult for Kriemhild, and would necessitate Red Gate finding another purchaser of its raw milk. Further, given that most of Queensboro's revenue comes from its role as a supply-balancer and broker, it lacks a financial incentive to make the requisite changes to support Kriemhild's continued growth.

Of the above-mentioned concerns, the biggest impediment to Kriemhild's growth is the inability to diversify its product offerings. With only one product, it is very difficult for Kriemhild to penetrate key markets. It is also more expensive on a per unit basis to distribute one product than a full suite of products (which can provide economies of scale).

Given these challenges, Kriemhild is working to build its own creamery in Hamilton, NY. The Rivingtons have purchased the land for the creamery, and are currently working to finance the construction of the building and purchase of the equipment. Kriemhild's business plan shows the need for 12 full-time equivalent employees by 2016, with input expenditure requirements of $2,537,256. Given that Kriemhild purchases a particularly large percentage of its input requirements in the local economy, this could serve to strengthen other local inter-industry linkages.

Additionally, Kriemhild's milk requirements with the new creamery will be greater than what Red Gate will be able to provide. The Rivingtons hope to find other local, like-minded, pasture-based dairies interested in joining the business—thus providing an opportunity for other farms to add value to their raw product and possibly to join in the profit sharing. The Rivingtons also intend to provide a certain percentage of profits to support local land trusts and preserve farmland.

However, investing in a creamery is a much riskier operation than co-packing, requiring a substantial capital investment. NY already has significant milk production and dairy processing capacity. What is Kriemhild's comparative advantage relative to larger companies interested in satisfying the demand for local and pasture-raised dairy products? For example, Organic Valley is now working with Byrne Dairy (outside of Syracuse, NY) to process the raw milk from their cooperative's members. Organic Valley now has a 'Grassmilk' where 100% of participating cows' nutrients come from pasture and dried forages, a 'regional milk' line, and a 'pasture butter'. As Kriemhild grows, will it be able to continue to operate across mainstream and alternative food systems?

Conclusion

Kriemhild Dairy Farms, LLC presents a case study of entrepreneurism jumpstarted by increased interest in local foods. The burgeoning business has substantial opportunity for continued growth given that it still uses a small percentage of Red Gate's raw milk. Further, it appears to have

found a niche in both alternative and conventional supply chains. The desire to pursue its own creamery presents risk, but also opportunity for substantial business and community reward. At least for now, customers seem to be willing to pay for 'better butter'.

Acknowledgements

This paper was prepared for the National Agriculture & Rural Development Policy Center Workshop and Themed Collection on Local Food Systems and Interaction with Entrepreneurship. This work was supported by Competitive Grant No. 2012-67011-19957 with the National Institute for Food and Agriculture, of the U.S. Department of Agriculture. The funder played no role in the case study design or the decision to submit the article for publication. The author would like to thank Lindsey Jakubowski and Bruce Rivington from Kriemhild Dairy Farms, LLC for participating in this case study.

References

Bittman, M. 2014. "Butter is Back." *NYTimes*. March 26, 2014. http://www.nytimes.com/2014/03/26/opinion/bittman-butter-is-back.html?_r=0 [Accessed April 28, 2014].

Hirsch, Jesse. 2012. "'Credibles' Can Make Omelets for Years." *NYTimes*. April 13, 2012. http://www.nytimes.com/2012/04/13/us/credibles-can-make-omelets-for-years.html?_r=0 [Accessed May 8, 2014].

IMPLAN Group, LLC. 2012. New York State Data.

U.S. Business Catalogue. 2013. Detailed Information about Queensboro Farm Products Inc. http://usa-adress.com/12297791_new_york_canastota.html [Accessed July 7, 2014].

U.S. Department of Agriculture, National Agricultural Statistics Service (USDA NASS). 2012. "Milk Cows Herd Size by Inventory and Sales: 2012." *Census of Agriculture*. 2012 Census Volume 1, Chapter 1: State Level Data. http://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_1_State_Level/New_York/ [Accessed May 10, 2014].

U.S. Department of Agriculture, Rural Development (USDA RD). 2005. *Cooperatives In the Dairy Industry*. Cooperative Information Report 1 Section 16. http://www.rurdev.usda.gov/rbs/pub/cir116.pdf [Accessed April 28, 2014].

U.S. Department of Commerce, United States Census Bureau (U.S. Census). 2012. *American FactFinder*. Accessed 28 April 2014. http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t# [Accessed April 28, 2014].