

To or Not to Go Buffalo Teaching Note

Part A

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Case Purpose

This case is ideally suited for a senior level agricultural management course or a course in entrepreneurship, again at the senior level. It identifies a number of issues for both new product launches and the issue of the agricultural producer being a long distance from the consumer. The complexity of the food system can be introduced to those students unaware of the issues facing the producers and hence the whole value chain in an ever more complex system as experienced in communities of increasing cultural diversity. The risk is difficult to quantify and hence the dilemma in taking this gamble on a somewhat undefined market is problematic.

The students should be able to:

- a. Develop an industry analysis
- b. Develop some basic decision criteria
- c. Critically think about the financial impact of innovating a traditional industry
- d. Incorporate ethnic diversity in their perspective of a market
- e. Make defensible decisions in an arena of ambiguity.

Case Summary

Arend and Adrian van Waart, dairy farmers in southern Ontario, Canada were faced with an opportunity to acquire a water buffalo herd in Florida. The herd would be imported to Canada and housed in an adjacent farm that they owned and was currently idle. The market for water buffalo milk, meat and related products were unproven as there was only one small herd of 10 head an hour away, another across the country 3000 km away, leaving any real supply of Buffalo Milk products imported facing a 285% tariff. There is a demand for the milk but what little data they have makes it questionable as they are new to the animal and the animal to Canada and Canadian processors.

Questions abound. The market though unproven has customers if the reports can be trusted. The price is a matter if selling fluid milk but there appears to be a significant opportunity to sell the milk to cheese makers that would likely purchase the milk and process it into high margin cheeses and other dairy products that are protected by a 285% tariff. The industry for bovine milk is in a managed supply industry in Canada ensuring reasonable supply at a reasonable price. The cost to add even one cow to production is over \$30,000 each of which the majority of the cost is quota. The cost excludes any buildings, land or equipment, just the animal and quota.

Buffalo on the other hand are outside of the quota system; hence the price for the animals is much more dictated by the market. The market for the milk, pardon the pun, is very fluid and again fully dictated by the market as these animals are outside of the quota system. Demand exceeds supply primarily for the finished products, cheese, yoghurt and related items. Most of these items are imported when produced from buffalo milk. Much of the demand is housed in the diverse and largest metropolitan area in Canada, the Greater Toronto Area, home to over 5,000,000 people and another 1,500,000 nearby.

Lesson plan

We recommend that the class commence with a quick survey of what people know or understand about the milk industry let alone the food industry. In particular the Canadian market and then take a quick straw vote asking go or no go?

There should be a few minutes to encourage a few comments why or why not.

Then the need for guiding questions should they be required.

1. Ultimately the question is “Should they buy the herd, import the animals and go into production of buffalo milk?”

To answer this question the students would be best to start by conducting a five forces Porter analysis of the buffalo producers industry in Canada and then the cheese processors industry. A brief PEST or STEP analysis can be done identifying

- a. The diverse and large ethnic communities in Toronto and growing, especially the Halal market.
- b. Desire for people to try new and different foods
- c. Political barriers in the form of tariffs.
- d. Technological issues of the equipment being identical and processing is easily within the realm of knowledge, at least generally speaking, for the majority of the industry participants. Distribution and storage not an issue.
- e. Growing number of people with restricted diets and need for protein but refraining from red meat.

Barriers to entry are very high as there are import restrictions, very few animals available for sale and virtually none in Canada. Cost is higher than cattle per head for the animal but lower in total due to there being no need to purchase quota. Virtually same cost for facilities though other items like veterinary issues, feeding and breeding costs are not defined. Basic technology should be similar cow to buffalo. Health approval is expensive to import animals new to a country that will be introduced into the

food system. This is a high barrier as the cost is prohibitive to many smaller operators. Still with the elimination of the quota the initial cost is lower.

Suppliers, this is a virtual unknown at this stage as there is no known local source for genetics, the feed regimen is unknown and the skills in managing the animals is unknown. A moderating factor is that the animals require the same equipment for milking as cattle, feed is expected to be similar, but medical advice maybe very limited as the animal is new to Canada.

Substitutes are very widely available and bovine milk is the most widely and lowest cost milk available in Canada. Goat milk is available but in limited quantities as is sheep milk. There is some soy and rice milk. Broader substitutes in the form of other protein are quite extensive but again depending upon the particular market there may be no substitute to buffalo sourced products such as mozzarella or south Asian dairy products, at least not to the discriminating consumer.

Customers are very weak as there is more demand than supply, they think. Direct equivalent material is imported at a very inflated price. There are alternatives but much inferior in taste and quality and other aspects important to the high end market. Demand is likely to increase due to the increasing ethnic diversity and numbers of people arriving in Canada from those countries where the population is familiar with the animal, its milk and know how to process and consume the products of the animal. There are three major markets, the fluid milk and the cow milk is less expensive, the processors of higher value products such as cheese and yoghurt and the restaurateurs. Due to the broad spectrum of customers the demand is much higher than the supply, providing the industry can connect with the clientele.

The **rivalry** in the buffalo market is non existence. There are a few herds in the USA but the capacity is very small and virtually nonexistent for exporting to Canada. In the cattle industry there is a lot of rivalry that has been modified with the quota management system that limits the volume of milk that can be produced but ensures a reasonable return to the producer of the milk.

In the cheese industry there is little to differentiate between the cow and buffalo milk based cheese markets except the volume and significant strength regarding the retailers of the cheese. The demand outstrips supply leaving the processors in a position of relative strength. The processors are weaker than the suppliers of the buffalo milk due to the limited production of the milk. At least this is what can be surmised. This makes the bovine milk market very expensive to enter but lucrative if established. The buffalo market on the other hand is likely very attractive as the demand is high and the prices are negotiated or will be if they can go into production. A side exercise could be to examine the value chain of the dairy industry but should the student audience be agriculturally familiar this issue should be quite easy to express, especially in a managed environment.

This exercise should take 15 to 20 minutes.

The following questions can be used to assist in organizing the class' thoughts and clarifying the position, to go or not to go buffalo?

2. What issues are left to be determined

- a. Can the herd be brought across the border, what rules will apply and the appropriate costs to achieve approval? How many do you bring and which ones?

There should be some mention of food safety and the risk of diseases and the involvement of the Canadian Food Inspection Agency, or some similar name for the agency that the students are familiar with in their locale. The costs were over \$30,000 for the Agency to process the application and then \$500 per animal, plus consultants' fees and Veterinary fees and Transport costs. Total costs could easily exceed \$100,000 just to commence the process of importation. Due to the need to get the most productive animals it is likely that only the cows young in age would be imported as they would be the ones to breed and then milk for what is potentially a longer life and productive life.

- b. How much does it cost to produce the milk?

These costs are not known. The world congress on buffalo in Italy had no papers and the research in the Netherlands was sketchy at best. The herd in Florida was totally pasture fed but that is not possible in Canada due to the winters and the need to feed the animals appropriately for the winter similarly to cattle.

- c. What are the feeding procedures?

There are no protocols so no set knowledge, in Canada. A few indications that the animals may thrive on the same feed as cattle, but there are hints that they will eat lower quality and cost feed, a plus but not quantifiable. The cost to feed cattle would be a reasonable proxy for this cost though there are some indications that the feed cost may be lower.

- d. What breeding procedures need following?

The animals take 3 years till they are mature enough to breed and take another 11 months gestation till they drop their calves and they can be milked. So the genetics will need to be imported, likely from Italy or the Netherlands or Belgium. Even so there is again little experience in Canada to draw upon and other knowledge could be hard to obtain. This however also helps focus on which animals to import, the most fertile and productive females and the younger promising females.

- e. What will the total investment be before they start generating a return so what is the Payback or NPV of the cash flows?

This is not known. An estimate of purchase price of the herd should total

$$400 \times \$15000 = 600,000 \text{ purchase price}$$

100,000 transport minimum

Feed ???

Breeding ???

Consulting ???

\$1,000,000 minimum investment till can start to milk, expect some similar numbers.

Revenue is totally unknown

Daily production of milk is in the range of 6 to 10 litres per day? So what should they charge?

As a result there is no possible way to calculate the revenues from milk, unless one knows their cost of production.

f. What is the market for the milk, meat and hides etc.?

There are no solid figures for any of these markets. The potential is there if they can find someone to buy the milk but at what price? How much will be produced and when?

There may be other issues that the students raise and should be discussed however the above items should help expose the situation faced by the entrepreneurs. It appears profitable but how sure can anyone be of success considering the risk.

To assist in the discussion it would be valuable to have the class establish some criteria for the decision. What factors should the brothers consider before they start the process?

At the end of the discussion it will be time to have the class vote again. Are there any changes in opinion and why?

This leads to Part B of the Case

Part B

At this stage of the business case the brothers have purchased the whole herd but only brought 100 heifers to Canada. 35 of the herd were bred in the spring and are expected to drop their calves in February and March. Another third of the herd have been bred and are expecting to calve towards May and June. The Genetics are from Italy as attempts to obtain any genetics from India have hit a brick wall. Still the connections from the earlier conference Italy and the visit to the Netherlands were effective in providing information on how to feed the animals and breeding. The brothers have spent over \$1,000,000 to this point and are not likely to generate any revenue for another 5 to 6 months. All the costs have been born by the Holstein dairy farm. No financing has been required to date.

The issue at hand is better than expected. They now have 9 small dairies that want the milk. No price has been negotiated nor costs established. The cows won't be ready for milking for 5 months at least. Given how little is known, what criteria should be used to determine the ideal dairy or processor that should be selected as the customer? The class can determine their criteria and list them for evaluation of customers? One issue is to insure that the product is launched in a manner that the whole chain is positively reflected upon and all parties benefit reasonable well.

The five forces model from earlier is playing out as the customers are weak due to demand exceeding supply. Cost information is coming clear as it appears that the animals do eat lower cost feed than cattle and still gain weight at an excellent rate.

There should be a classification of the processors on the basis of volume desired, price willing to pay, ability to maintain the image that the producers wish to convey. What is that image and what impact will the various processors have on the markets? Should they sell to just one dairy or should they attempt to sell to various markets, the mozzarella market, the Indian Sweet market, the south Asian Cheese and yoghurt market or to the artisanal cheese market?

The class should be asked to free flowingly come up with the criteria of their decision, but before they do they will have to determine what the strategy is of each of the processors. The brothers need to know on what each dairy processor is focused? Is it price? or uniqueness? Or local production? Anyway the milk is processed there should be a reasonable profit to be shared by the producer, processor and the retailer or restaurateur. What should the price be? Some criteria would be payback period, ROI, profitability, service, volume, frequency etc. The class needs to determine their own criteria.

The class then comes up with ideal customer(s).

Part C

The brothers did not have to do much selection as there were only two original processors from the initial interested dairies by the time the buffalo started milking. One was focused on Italian cheese products and based in Toronto and the other also in Toronto focusing on cheese and other products primarily for the south Asian market. A third small local artisanal cheese maker has commenced production of some products on a very small basis. It is of note that the other farm that entered into the market the same year by buying a herd in New Hampshire was selling to the same dairies and the herd is similar in size.

But the remaining issues have yet to be resolved. The milk is selling for \$6 per litre versus \$0.60 per litre of bovine cow milk. The animals are slower to milk and it is taking time to get to know the animals but both the animal and the herdsman are learning how to get along and effect a solid relationship. Milk is being shipped at over 8% butterfat but the animals are on winter feed still. The feed itself is very poor hay that the brothers would not give their cattle. Still the buffalo appear to be thriving. The winter was not too hard on them and all in all they are starting to make some revenue. Profit is still to be determined.

What do the brothers do with the remaining herd in Florida?

What do they do with the bull calves?

What do they do with buffalo cows that are not producing well or are hard to manage or hard to breed?

What do they do with the animals that were imported versus those born in Canada?

Is there even a market for the animals other than their milk?

The above questions require educated guess work once again. Those animals imported must be processed through a federally licensed facility if they wish to sell any meat. The offspring born here can be processed in any regulated plant.

There is little to go on from the market data. There may be some market for the meat in the Asian population in Toronto. The meat would likely also have to be Halal as most countries where the animal is known, and there is a large population from those countries in the Toronto market, are Muslim. Once again the meat processors would need to be federally regulated for the older animals and possibly provincially licensed for the younger animals but the younger herd would not be ready for slaughter for another 12 to 18 months.

The market for the hides is virtually nonexistent in Canada and would require exporting the hides, likely to Egypt. The brothers do have a connection to this market but it not very lucrative.

Ultimately the brothers are not very concerned about the herd as meat as the revenue is exceeding cost by a large margin and hence in the first year, starting to show a profit or at least a positive cash flow. A brief calculation of the revenue should generate a measurement of 6 to 8,000 litres per week at \$2.00

per litre or \$600,000 to \$800,000 per year. Payback should then be 1.5 to 2.0 years after milk production commences versus the \$1,000,000 CAD investment.

This finding should explain why no one in Europe was concerned about the cost of production. They were making a sizeable margin on the milk and hence it was not necessary to focus on the cost of the production, only on producing quality milk.

This leaves the brothers with two remaining major tasks.

What should the ideal feeding regimen be? And

What is the breeding protocol to follow?

The disposal of the animals is not a major issue at this time.

What actually happened?

To follow up the actual farmers are now working with the Canadian federal government developing appropriate feeding and breeding protocol and do not really care about the selling of the animals for meat. The herd in Florida is being sold for meat and the cull animals in Canada are being disposed of to whoever wants them. The farmers are continuing their efforts to determine a source for genetics from India where a significant effort has been made to improve the breeds of Buffalo and increase the production of high quality milk. Many buffalo were reported to produce 11 – 12 % butterfat, 95% is HDL (the good cholesterol) and 50% higher in protein than cow milk.

Demand for the animals and their milk is now becoming even greater. There are now two other farms in Ontario with Buffalo, one with 10 and the other with approximately 150 head, 250 km the other side of Toronto. All are supplying the same dairies. It is not expected that the demand for buffalo milk will be satisfied in Ontario for at least another 20 to 30 years.