



Mobile Slaughter Unit Feasibility Study

Prepared for:

**Department of Natural Resources
Forestry and Agrifoods Agency**

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Mobile Slaughter Unit Feasibility Study

Executive Summary

This is the first provincial feasibility study on the introduction of a mobile slaughter unit (MSU) in the province of Newfoundland and Labrador. The purpose of this report is to examine the meat production industry to determine if the introduction of the MSU is a viable option for the industry. The Sheep Producers Association of Newfoundland and Labrador (SPANL) started the investigation of a MSU in 2010. It was decided by the Department of Natural Resources to conduct an feasibility study on the MSU and its user capabilities. This study was produced in conjunction with SPANL.

This document explored five different sizes of mobile slaughter trailers including twenty-seven, thirty-six, forty, forty-five and fifty-three foot units. It was determined by industry surveys that there would be approximately 606 lamb, 195 beef cattle, 57 goat and 26 hog made available for slaughter in the mobile slaughter unit in the first year. It would take almost sixty full slaughter days to kill and primary process these animals. With one day travel, one day for cleaning and maintenance and three days of slaughter per week it is recognized that the mobile unit would be in operation for approximately twenty weeks. It would also be reasonable to assume that some additional time will be required for unexpected problems that may arise with the operation of the MSU.

The return on investment was measured based on additional money that would be generated by the meat producers by accessing a MSU in addition to the money saved by producers by using the mobile slaughter unit. It was determined that the sheep producers on average could charge two dollars per pound more for a lamb killed in a mobile slaughter unit and approximately a dollar more per pound for beef. It was determined that lamb slaughter would contribute \$72,500.00 of the total \$170,359.30. Furthermore, there would be \$96,075.00 contributed through the slaughter of beef cattle and there would also be \$1,784.30 generated through the slaughter of goat and hog.

It was also recognized that there would be a number of obstacles that would face the introduction of the mobile slaughter unit. The generation of funds to buy and run the mobile unit would be the initial obstacle to overcome. Also, the scheduling of the mobile slaughter house would be a challenge and the geographic diversity of Newfoundland & Labrador would create challenges. It was determined that the majority of the producers want to slaughter their animals the same time of the year which would make it difficult to accommodate the majority of producers simultaneously. In addition, transporting the mobile unit long distances across the province would not be a viable option.

It has been suggested that the MSU be introduced as a pilot project. The unit in the first year of the pilot project would be restricted to producers on the Avalon Peninsula. Based on the functionality and economics, it would seem that the thirty-six foot unit might be the best option for the Newfoundland and Labrador meat industry.

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Introduction

In 2010 the Sheep Producers Association of Newfoundland and Labrador (“SPANL”) started preliminary research into the feasibility and acquisition of a mobile slaughter unit (“MSU”). The intention of the MSU would be to provide meat producers in this province that currently do not have a suitable location for slaughter with the convenience of a slaughter facility that operates utilizing all food safety protocols and provides a quality product for the industry. After consultation with SPANL it was determined by the Production and Market Development Division of the Agrifoods Development Branch to explore and conduct an in-depth feasibility study of a mobile slaughter unit and its user capabilities within the Province of Newfoundland and Labrador.

This report will review all aspects of implementing a suitable MSU program in the province and will discuss projected case scenarios that will examine the various alternatives for the Newfoundland and Labrador agricultural industry. The objective of introducing the MSU is to offer Newfoundland and Labrador producers an opportunity to access the retail meat market with provincially inspected meat products and to promote and facilitate potential growth in the meat production industry.

Purpose

The purpose of this feasibility study is to determine the key considerations for a MSU within the Province of Newfoundland and Labrador. This study will include:

- Economic feasibility
- Facility analysis
- Operation analysis
- Economy strength
- Industry overview
- Operation scenarios
- Recommendations

This feasibility study was required to determine the economic and environmental viability for the introduction of a MSU into the Newfoundland and Labrador agricultural industry. Feasibility studies are being conducted by the Government of Newfoundland and Labrador to ensure that potential projects are thoroughly investigated before committing to any new ventures to be undertaken. It is the main purpose of this feasibility study to explore all aspects of implementing a MSU program and to discuss the probability of its success.

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Methodology

This feasibility study was produced from the collection of data from a variety of resources that included:

- A mail-in meat producers survey;
- A survey conducted by SPANL;
- A follow up telephone survey;
- Consultation with SPANL and meat producers;
- Research conducted on the internet, and;
- A review of previous publications from SPANL and the Newfoundland and Labrador Livestock Council.

Additionally, information was also received after consultation with agriculture representatives, industry officers and management.

Mail-in surveys were sent to one hundred and twenty eight (128) known meat producers in Newfoundland and Labrador. This survey was conducted from July 13, 2012 to July 31, 2012. Initial response was low which was to be expected given it was a very busy time of year for the producers. Follow-up telephone calls were conducted to all participants in the survey. It was determined that another survey would be conducted with the SPANL members at their annual general meeting in Gander during the fall of 2012. After the SPANL annual general meeting it was decided that a sufficient sample of information from the sheep producers was available to proceed with the study.

The initial survey was sent to all known meat producers in the industry giving all producers an equal opportunity to contribute to the study. A sample from all districts of the province was desired, specifically; the Avalon, Eastern, Central and Western Regions, representing the majority of the meat production within the province. The participants in the survey were assured that all information gathered from the survey would be held in the strictest of confidence and would only be used for statistical purposes.

Further, there was close consultation with SPANL to identify the needs associated with that organization with respect to the MSU. A number of meetings with SPANL vice-president Wilson Reid were very beneficial in developing an in-depth understanding of the needs of sheep producers in this province. It was concluded that a MSU would be beneficial for the future growth, health and stability of this industry for the future. All information gathered for this study was collected for the sole purpose of determining the feasibility of the MSU unit within Newfoundland and Labrador.

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Industry Background

Newfoundland and Labrador meat producers are constantly faced with numerous factors that make the production and sale of meat challenging. The livestock industry today is well below historical levels that were characteristic of Newfoundland and Labrador in the past. For sheep, there was an estimated all time high of nearly one hundred thousand ewes in the early part of this century, numbering to about five thousand eight hundred animals in 2000¹. In 2012, there were an estimated four thousand one hundred sheep and lambs in the province. This information is indicative of the fact that over the years this industry has been slowly declining to a fraction of historical levels. Even in the last ten years livestock in Newfoundland & Labrador has declined.

It is the finding of this study that the decreasing number of livestock in the province is due to a number of factors. Some of these factors include the increasing age of producers and producers leaving the industry. In the initial survey conducted with all producers, the responses indicated that all producers were over the age of forty with over half over the age of sixty. It was also indicated in this survey that there were no producers under the age of forty years old, meaning that there are a very limited number of new producers entering the industry. However, subsequent analysis of the industry has demonstrated that there are a few producers under the age of forty.

Other major challenges that local meat producers face include:

- The competition from imported meat and meat products into the province;
- The increasing cost of feed, and;
- The lack for suitable or sufficient pastures.

Mobile Slaughter Background

Northern regions of Europe have used MSU's since the 1950's to slaughter reindeer and muskoxen. Today there are numerous MSU's operating in Europe, the United States and Canada. There is a variety of animals that are being slaughtered in MSU's including beef, sheep, hogs and goats. A MSU is a prefabricated trailer that's meets all of the requirements of a provincially inspected facility that is capable of slaughtering at a farm location. MSU's can be designed for either slaughter or processing. The majority of the operational units today simply slaughter and chill the meat to the desired temperature. They can also be used to start primary processing into halves or quarters.

¹ Sheep Producers Association of Newfoundland and Labrador – *Industry Strategy, April 2000*

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Meat producers in this province face many challenges while trying to penetrate their product into the market. A MSU would solve a number of these obstacles including:

1. Geographic isolation;
2. Food sanitation and food safety issues;
3. The service of small scale farms, and;
4. The provision of a clean and safe slaughter in Newfoundland & Labrador².

As well, the MSU would provide a more humane slaughter of animals. Since the mobile operates on the farm, animals remain in the environment where they were raised creating minimal stress before slaughter. It is has been described as the most humane way to slaughter an animal. Often when animals are transported to slaughter, they are put under stress. It is believed that the quality of meat is much better when animals are under minimal stress before slaughter. This is a major factor portraying the image of a niche market (specialty meat) product that results from the slaughter in a MSU. An excellent attribute of a MSU is that the animals are handled under minimal stress compared with conventional pre-slaughter handling that involves stressful loading, transport, mixing and crowding and rough handling by humans that are unfamiliar to them. For the MSU's that are in operation, a stress-free slaughter occurs because the animals are surrounded by familiar people within their own environment.³ The end result is that producers are left with a premium meat product that has the potential for higher value in the marketplace.

Mobile Slaughter Operation

The mobile slaughter units can come in a variety of sizes. The bigger the unit the wider range of breeds and carcasses it can process and store at any given time. There was a range of units considered in this feasibility study, including:

- Twenty-seven (27);
- Thirty-six (36);
- Forty (40);
- Forty-five (45), and;
- Fifty three (53) foot trailer.

Although the process is the same for all the different size of trailers, more employees are required to maximize the potential for the bigger trailers. The MSU typically has three components; the first section in the front of the trailer is the slaughtering, skinning, and offal removal room. This front room is actually the back of the trailer. The middle section is the cooler room where the carcasses are hung to chill. The third section in the back of the trailer is the mechanical room which can only be accessed from outside. This mechanical room houses the generator, water tanks, propane, cooler and air compressors. The trailer has a meat rail system for the easy handling of the carcasses from the slaughter room to the cooler room and also has two winches to maneuver the carcass.

² A Review of Mobile/Modular Slaughter and Processing Technology – *College of Tropical Agriculture and Human resources* By: Matthew Stevenson and Glen Fukumoto

³ Mobile Abattoirs: *Benefits and Challenges* By: Jane Murrigan

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The animal is brought into the slaughter room which is located at the back of the trailer. Here the animal is rendered unconscious and bled out. The animals are then hoisted using the winch and skinned. The offal is then removed and stored outside in a container. There is a special side door for the offal to go out through and the container is just outside the trailer to collect the offal. The animal is then trimmed and washed if necessary. Lambs are then either quartered or halved at this point. The carcasses are then brought down to the chill room where they are chilled at 4 degrees Celsius (4°C) for 24 hours or until the temperature of the carcass is at its desired temperature. The slaughter room is rinsed with water and another animal is brought in for processing.

It has been concluded that the most suitable MSU should slaughter only one type of animal a day due to sanitation reasons and the time needed for cleaning. In one day the MSU could slaughter up to twenty lambs or goats, eight beef cattle, and fifteen hogs. All the assumptions and operational costs are based on these slaughter numbers. These slaughter numbers are comfortable and easily attainable with adequate time to clean the unit after the slaughter. It is suggested that Monday would be the travel day to get on site of the farm. The unit would be able to travel anywhere on the Avalon Peninsula in a couple of hours. The excess time on Monday could be used to slaughter in situations limited to two types of animals. For example, the producer may have 40 sheep and 3 goats to be slaughtered. The unit would be available to slaughter the goats on the day of arrival and then get prepared for two full days of slaughtering lamb. It would also be advisable that Friday of each week that the MSU is in production, be designated for additional cleaning, maintenance and repair.

Mobile Slaughter Trailer Analysis

The size of the trailers that were priced and evaluated for this feasibility study were a twenty-seven, a thirty-six, a forty, a forty-five and a fifty-three foot unit. The larger units require a minimum of two workers to operate a full day's slaughter. The twenty seven foot unit on the other hand can operate with one butcher along with the farmer assisting with the slaughter. Usually there is a butcher and a laborer or two butchers and a laborer for the bigger units, with the farmer also helping out in the slaughter. It is recognized that the cooler is approximately the same size for units thirty-six feet in length and larger. These coolers can usually hold two days of slaughtered carcasses.

After consultation with SPANL, it was concluded that the twenty-seven foot trailer would be the most suitable for introduction into the Newfoundland & Labrador lamb industry. The twenty-seven foot trailer is the smallest mobile unit that will be explored in this feasibility study. It was requested by SPANL that this particular unit would be the unit introduced into the Newfoundland & Labrador industry. This unit could be transported by a smaller sized pick-up truck; a dual wheeled 3500 would be ideally suitable. The unit would be capable of slaughtering smaller sized animals like lamb and goats only. The unit has three rooms; an eleven foot processing room, an eight foot cooler room and an eight foot mechanical room. The cooler is designed to chill three thousand pounds of freshly slaughtered "hot meat" to below forty degrees Fahrenheit (40°F) in eighteen hours. This unit requires a 10KW commercial generator and has a three hundred gallon,

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baffled fresh water tank. Also, the trailer would be equipped with two 1,000 pound winches.

The thirty-six foot unit is the most popular unit requested by producers and industry leaders in various jurisdictions. This unit is capable of slaughtering beef, hogs, sheep and goats and can easily be maneuvered on farms and is large enough to perform slaughter comfortably. The unit has a sixteen foot processing room, a twelve foot cooler room and an eight foot mechanical room. The cooler room is designed to chill six thousand pounds of freshly slaughtered or "hot meat" to below thirty-five degrees Fahrenheit (35°F) in twenty four hours. There is a 12KW commercial generator and a three hundred gallon baffled fresh water tank. The trailer is also equipped with two 1,000 pound winches. Pictures of the thirty six foot unit are available in Appendix A.

The forty and forty-five foot units are the same design as the thirty-six foot unit except on a larger scale. These particular units can process 8 to 10 beef, 16 to 20 hogs or 24 to 36 sheep/goats per day with one butcher and an assistant. The trailer is capable of processing additional carcasses with an extra butcher. These units are capable of having custom sizes for cooler and processing rooms depending on the needs and the size of the slaughter. Usually the chill room is capable of handling two days of slaughter and the processing room is big enough for two butchers to work comfortably.

The largest mobile unit available is a fifty-three foot tractor trailer. This particular trailer is very low to the ground, longer and very hard to maneuver in tight places, hence this trailer may not be able to access some farms because of the clearance restrictions. The trailer itself is divided into four compartments. The first section receives the animal and the animal is then stunned and bled. In the second section the animal is hung and dressed. The third section is a large chiller where the slaughtered animals are hung. The last room is a mechanical room to house all the required equipment. This MSU is designed to slaughter ten beef a day, twenty hogs per day and thirty-five sheep per day. This unit is also large enough to slaughter large animals such as Bison. The slaughter numbers could increase with an additional butcher. There is a unit like this in operation in Alberta which has two butchers and a laborer. It was concluded that three employees would be needed to utilize this unit to its maximum potential.

Geographic Definition

It is anticipated that the MSU will be utilized by meat producers in the Province of Newfoundland and Labrador. The MSU will be a major part of SPANL's plan to restore the industry and meet the increasing demand in the market. A MSU would be cost-effective in those circumstances where producers do not have access to current slaughter facilities or the resources to transport animals to slaughter. It is highly recommended that the MSU be part of a pilot project located on the Avalon Peninsula to assess the suitability of a MSU while reducing the overall cost of the pilot project. It is believed that the greatest concentration of sheep producers is found on the Avalon Peninsula at 47.5%, followed by 28% in Western and 24.5% in Central. The largest concentration of producers on the Avalon is found in the St. John's area at 19.6% and

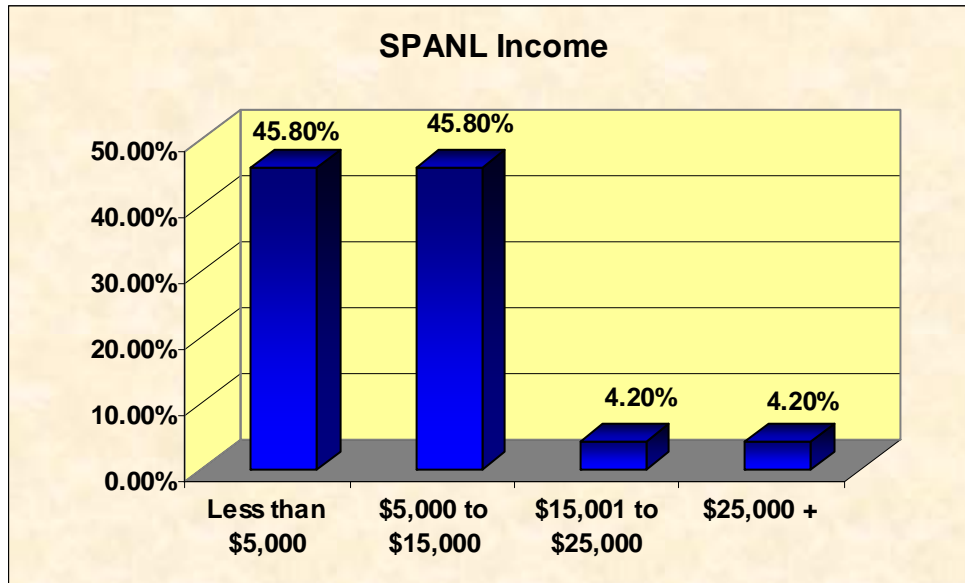
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the smallest concentration is found in the Corner Brook area at 2.2%.⁴ It is believed that the MSU would be utilized by 59 existing meat producers on the Avalon. It is likely that once other producers see the benefits of the unit they will want to use the facility as well.

According to the SPANL survey, it was concluded that 16.7% of the participants were between the ages of 18 to 40, 50% were between the ages of 41 to 60 and 33.3% were over the age of 61. It was recognized that the 83.3% of the producers were over the age of 41. Based on the average, and a minimal number of younger farmers entering the industry, it is projected that there will be a constant decrease in the number of producers in the province if the situation does not change. There needs to be incentives for potential producers to start raising animals on the island.

The graph below represents the income of SPANL members that responded to the survey. It was established that 91.6% of the members make \$15,000 or less per year in revenue from the sale of lamb. Evidently it is felt that there is a need to assist these producers increase their income to a higher level. The results from the survey indicated that the two major factors that prevent the producers from increasing the number of animals in their operation are the access to slaughter facilities and the need for additional pasture space.

Graph 1: SPANL Members Income



⁴ Sheep Producers Association of Newfoundland and Labrador – *Industry Strategy 2000*

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Economic Indicators and Economy Strength

In 2006 there were 505,469 people in Newfoundland and Labrador. In 2011 there were 514,536; an increase of 1.8%.⁵ This growing population should result in an increased demand for meat. Labour productivity in the business sector has increased at an average rate of 3.9% since 2007; this is the highest increase in Canada⁶. This growth has been recognized as a result of the increasing activity in oil production and building of the mineral processing plant in Long Harbor. With the potential development of Muskrat Falls on the Lower Churchill and the Hebron fabrication project in Bull Arm, it is predicted that the economy of Newfoundland and Labrador will continue to grow.

The following is a table of selected provincial economic accounts. We can conclude from this table that the economy has strengthened in every category except the personal savings rate which means people are spending more money.

Table 1: Newfoundland & Labrador Economic Indicators⁷					
	2006	2007	2008	2009	2010
Personal Income (x \$1,000,000)	15,905	15,790	15,659	16,728	17,372
Personal Disposable Income (x \$1,000,000)	12,970	12,619	12,377	13,401	14,010
Personal Savings Rate (%)	15.5	7.4	-0.4	4.5	4.5
Debt Service Ratio (%)	5.43	6.17	6.68	5.88	6.02
Gross Domestic Product, Implicit Price Index	143.8	147.8	156.2	138.1	148.2
Gross Domestic Product (x \$1,000,000)	26,064	29,249	30,785	24,762	28,192

Another major factor that has impacted the Newfoundland and Labrador economy is tourism. It is recognized that there were 299,936 Marine Atlantic passenger movements in 2012 a decrease of 3.3% from last year. The number of non-resident automobile visitors to the province was 91,760 at the end of September, a decrease of 2.0% from the same time last year. The airport passenger movement reached an estimated 1,723,317 for the period ending September 2012. This is an increase of 8.4% over last year.⁸ The numbers for automobile traffic may sound troublesome but it should be recognized that the majority of tourists today are traveling by air. It could be concluded that the total number of tourists are up due to the fact that accommodation occupancy rate reached 53.1% for the period ending in September 2011, and is on a steady increase over last year. People that stay in hotels are people inclined to eat at restaurants. There were 518,500 non-resident visitors to the province in 2010, an increase of 7.3 percent from the previous year. It is also noteworthy that in-province tourism is very healthy. The Newfoundland & Labrador Government has implemented a

⁵ <http://www12.statcan.gc.ca/census-recensement/2011/as-sa/fogs-spg/Facts-pr-eng.cfm?Lang=Eng&TAB=1&GK=PR&GC=10>

⁶ <http://www.statcan.gc.ca/daily-quotidien/120312/dq120312b-eng.htm>

⁷ <http://www5.statcan.gc.ca/cansim/pick-choisir>

⁸ http://www.tcr.gov.nl.ca/tcr/publications/2012/Tourism_performance_2012_YTD_September_2012.pdf

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“travel right here” campaign to entice Newfoundlanders and Labradoreans to vacation right here at home. It can be concluded that there is no indicators that suggest Newfoundland and Labrador tourism of being at risk of declining. Furthermore the Department of Tourism recently had an award winning campaign entitled “Find Yourself” in Newfoundland and Labrador which has been very successful in attracting tourists to vacation in this province.

Population

It has been determined that 248,764 people, which represents 48.3% of the Newfoundland and Labrador population, are located in a census metropolitan area or a census agglomeration⁹. It was determined that there are 265,772 people living outside a census metropolitan area or a census agglomeration area which accounts for remaining 51.7% of the population¹⁰.

Table 2: Population in CMA or CA Areas¹¹						
CMA or CA Name	Type	Population			Rank	
		2011	2006	% Change	Nat.	Prov.
St. John's	CMA	196,966	181,113	8.8	20	1
Corner Brook	CA	27,202	27,194	0	94	2
Grand Falls - Windsor	CA	13,725	13,558	1.2	128	3
Bay Roberts	CA	10,871	10,507	3.5	147	4

The above table indicates that the highest population growth has occurred in the St. John's CMA with an increase of 8.8%.

Table 3: Census Subdivisions with 5,000⁺ population that have the highest population growth¹²					
Census Subdivision	CSD Type	Population			
		2011	2006	% Change	
Paradise	T	17,695	12,584	40.6	
Torbay	T	7,307	6,281	17.8	
Clarenville	T	6,036	5,274	14.4	
Conception Bay South	T	24,848	21,966	13.1	
Portugal Cove - St. Philip's	T	7,366	6,575	12	

⁹ <http://www12.statcan.gc.ca/census-recensement/2011/as-sa/fogs-spg/Facts-pr-eng.cfm?Lang=Eng&TAB=1&GK=PR&GC=10>

¹⁰ <http://www12.statcan.gc.ca/census-recensement/2011/as-sa/fogs-spg/Facts-pr-eng.cfm?Lang=Eng&TAB=1&GK=PR&GC=10>

¹¹ <http://www12.statcan.gc.ca/census-recensement/2011/as-sa/fogs-spg/Facts-pr-eng.cfm?Lang=Eng&TAB=1&GK=PR&GC=10>

¹² <http://www12.statcan.gc.ca/census-recensement/2011/as-sa/fogs-spg/Facts-pr-eng.cfm?Lang=Eng&TAB=1&GK=PR&GC=10>

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It is concluded that the highest population increase was in the St. John's CMA. The communities of Paradise, Torbay, Conception Bay South and Portugal Cove – St. Philip's have been recognized as residential centers that are continuously growing. It is believed that these communities and cities are growing so quickly because the Newfoundland and Labrador economy is so healthy.

Labour Force Characteristics

The following chart represents the labour force in the province and indicates that the Newfoundland and Labrador economy. The decrease in employment from one month to another would most likely represent seasonal workers. The employment rate increased 2.4% from October last year to October this year.

Table 4: Newfoundland & Labrador Labour Force Characteristics (,000) ¹³						
	Sept 2012	Oct 2012	Sept 2012 to Oct 2012	Sept 2011 to Oct 2011	Sept 2011 to Sept 2012	Oct 2011 to Oct 2012
Labour Force	261	264	3	6.1	1.1	2.4
Employment	228.7	232.5	3.8	8	1.7	3.6
Unemployment	32.2	31.5	-0.7	-1.9	-2.2	-5.7
Participation Rate (%)	61.1	61.8	0.7	1.6		
Unemployment Rate (%)	12.3	11.9	-0.4	-1.1		
Employment Rate (%)	53.5	54.4	0.9	2		

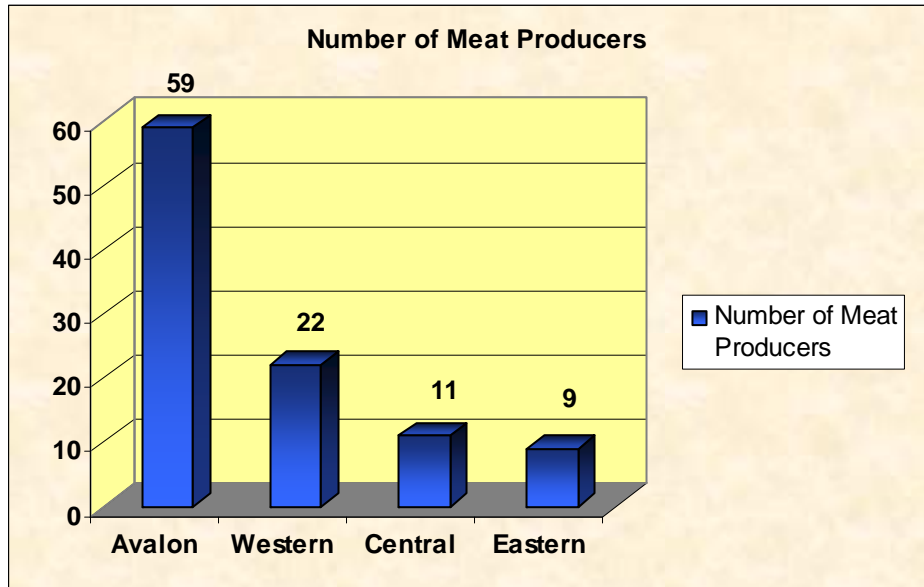
Newfoundland Meat Producers

There are approximately 101 meat producers in the province that have been identified. This number does not reflect the actual number of meat producers in the province. The following graph represents the number of meat producers in the province by region of the province.

¹³ <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/lfss01a-eng.htm>

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Graph 2: Number of Recognized Meat Producers Known to Government



According to the Sheep Strategy commissioned by SPANL in 2000, there were approximately 240 farmers keeping sheep in the province.¹⁴ It is believed that there are currently approximately 952,000 pounds of lamb consumed in Newfoundland and Labrador; however, only 27.5% is produced within in the province.¹⁵

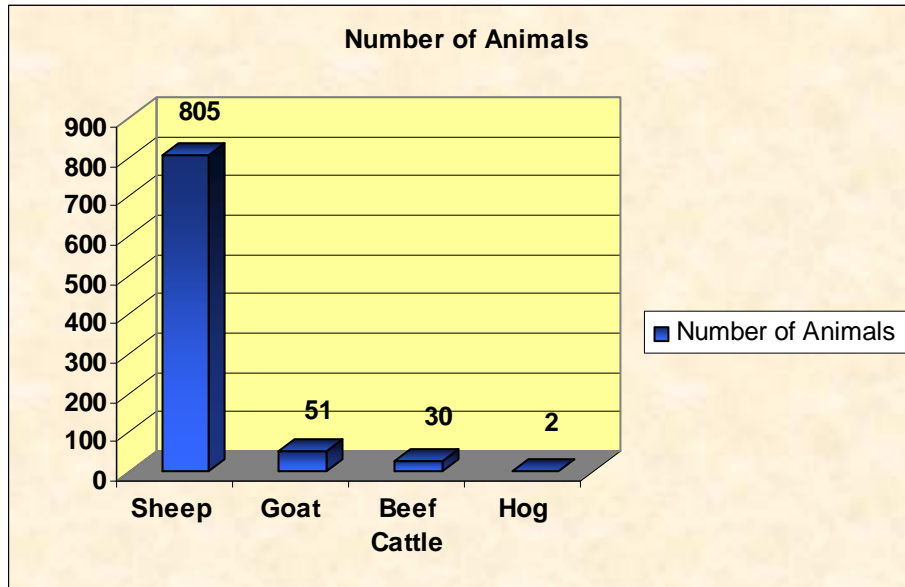
The SPANL survey revealed that there were eight hundred and five lambs, fifty-one goats, thirty cattle and two hogs being raised by SPANL survey participants as illustrated by the following chart. As previously stated, it would be reasonable to establish a pilot project that the majority of the MSU use would occur in the Avalon region during the pilot project. If required, the unit could travel to the central region as well to ensure that the trailer had enough usage to keep the unit busy for six months. It was determined that some of the sheep producers also have other types of animals and it would be to their advantage if the MSU could handle various types of animals.

¹⁴ Sheep Producers Association of Newfoundland and Labrador – *Industry Strategy 2000*

¹⁵ Sheep Producers Association of Newfoundland and Labrador – *Industry Strategy 2000*

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Graph 3: The Number of Animals Owned by Surveyed SPANL Members



The graph above represents the number of animals indicated by producers that were surveyed during the SPANL 2012 annual general meeting. While not all the producers are willing to use a mobile slaughter house, the majority are interested in increasing the number of animals they have if a MSU became available. The twenty-four SPANL members surveyed represent 19.63% of the total number of sheep in the province on the basis that there is a population of approximately 4,100 sheep in the province.

Trends

The Newfoundland and Labrador economy is influenced by many economic factors such as population size, disposable income, employment rate, increase in urbanization, increase in retail sales, and the influence from other countries.

Today the trend of buying local is becoming more prevalent. People are becoming more aware that buying a local product is fresher, better quality and also supports the Newfoundland and Labrador economy and the producers. It appears that the idea of buying locally produced product is constantly increasing and is hoped and expected to gain more importance amongst people who live in the province. Restaurant chefs are also buying more local products and are promoting Newfoundland and Labrador's local produce and products. Recently the Department of Natural Resource teamed up with the Restaurant Association of Newfoundland and Labrador (RANL) and The Department of Business, Trade and Rural Development to promote locally produced food in the Province. The food tour traveled to six different locations across the province to offer five to eight course meals of fine dining prepared by some of the best chefs in the Province. All the meals were prepared using local products. The tour was a great success and was sold out in five of the six locations. It was determined that these events are creating more awareness by consumers to buy locally and people are realizing the benefits of buying locally produced foods.

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Another trend that has a direct impact on the meat industry is the increasing trend of the population that dines out. Today the restaurant business is growing constantly. The restaurants' needs make up an important part of the producers market since such restaurants pay premium prices for premium specialty meats such as lamb and goat. In August of 2012, there was \$61,906,000 spent in the food services and drinking establishments alone in Newfoundland and Labrador. This number is up 9.2 percent from the previous year¹⁶. Dining out and finer restaurants are gaining interest with Newfoundlanders & Labradorians while tourist have always spent money dining out and enjoying locally produced fare cooked in traditional ways.

Employment Opportunities

Direct Jobs

The introduction of a MSU into the Newfoundland and Labrador economy would create direct and indirect jobs. Depending on the size of the MSU, there would be ideally at least two seasonal workers hired for the start of operation. If it is desired to implement the largest trailer of 53 feet, there would be three seasonal workers hired upon initiation of the operation. The smaller trailer unit would need one butcher and one laborer that would maximize the trailers potential to operate. For the largest unit, two butchers and one laborer would be required. To introduce a MSU for the lowest possible cost, and to be most productive, one butcher could be hired to operate the 27 foot trailer. This individual would be responsible for handling all the duties required to run the trailer. Also to make the trailer operational and be the most cost effective, the twenty 27 foot trailer would be implemented and it would be run solely by the producers. Although it was recommended by SPANL that the producers run the MSU to reduce costs, it was determined that this would cause problems operationally. There has to be a designated worker, preferably a butcher to travel with the trailer to ensure that the slaughter is carried out properly, the trailer is properly cleaned, and that the scheduling is done fairly. The scheduling will need to be determined by industry.

Indirect Jobs

The MSU would also impact the level of meat production within the industry indirectly as producers increase the number of animals they produce since they would most likely require additional employees to work on the farm. Furthermore, if the MSU is a success and producers start to realize higher profits, the industry may attract new producers to the industry. This could also make the meat production industry more attractive to the younger generation.

¹⁶ <http://www.statcan.gc.ca/daily-quotidien/121031/t121031b001-eng.htm>

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Competition Analysis

There would be a number of reasons why farmers would not use the MSU. This part of the study will examine other methods of slaughter and why a meat producer may not use the MSU.

Provincially Licensed Slaughterhouses

In the province there are currently twenty provincially inspected slaughterhouses. The slaughterhouses are owned by meat producers who slaughter their own animals and also get paid to slaughter other producers' animals. It is believed that once the mobile slaughter unit is in operation a significant number of the producers getting their animals slaughtered in these slaughterhouses will start to take advantage of the MSU. The producers that are shipping their animals to these slaughterhouses have expenses associated with slaughter that impacts their profit margin. These expenses include:

- Shipping costs;
- Slaughter per head, and;
- Price per pound cut.

It was asked on the first survey "what are the costs associated with slaughtering each type of livestock you produce?" The following table represents some of the costs associated with shipping animals to a slaughter facility within province. Although not all slaughter facilities in the province slaughter other producer's animals some operators make a profit slaughtering for other producers. It was determined that some producers pay up to \$125 to travel to a slaughter facility and in between \$0.35 to \$0.50 per pound for cutting and packaging. Also listed in the following table are slaughter costs per head.

Table 5: Estimated Costs for Producers to Slaughter Livestock			
	Slaughter per head	Cut and package	Travel
Beef	\$35.00	\$0.35 - \$0.50 Per Lbs	\$125.00
Sheep	\$15.00	\$0.35 - \$0.50 Per Lbs	\$125.00
Hog	\$25.00	\$0.35 - \$0.50 Per Lbs	\$125.00
Goat	\$15.00	\$0.35 - \$0.50 Per Lbs	\$125.00

Table 6 is a listing of the registered slaughter facilities within the province.

Mobile Slaughter Unit Feasibility Study

Table 6: Operational Slaughter Facilities in Newfoundland and Labrador¹⁷			
Plant	License Type	Area	District
Dawe's Meat's	Red Meat	CBS	Avalon
Cormier Country	Red Meat	Doyles	Western
Leamington Farms	Red Meat	Point Leamington	Central
Newstead Agricultural Society	Red Meat	Comfort Cove	Central
Kavanagh's Farm	Red Meat	Ferryland	Avalon
Shadybrook Farms	White Meat	St. John's	Avalon
Taylor's Meats	Red Meat	CBS	Avalon
Eason's Meats	Red Meat	CBS	Avalon
Nelson Fagan Meats	Red Meat	CBS	Avalon
Countryside Abattoir	Red Meat	Cormack	Western
Stoney Ridge Farm	White Meat	Portugal Cove	Avalon
Baird's Quality Meats	Red Meat	CBS	Avalon
Bishop's Meats	Red Meat	CBS	Avalon
Noel's Turkeys	White Meat	Carbonear	Avalon
Hillside Enterprises	Red Meat	Marysvale	Avalon
Morry's Sheep Farm	Red Meat	Kilbride	Avalon
Loch Leven Slaughterhouse	Red Meat	St. David's	Western
Valley Hill Farm	White Meat	Corner Brook	Western
Witch Hazel Farm	Red Meat	Whitbourne	Avalon
Rideout's Meats	Red Meat	CBS	Avalon

Sale of Live Animals

It is understood that some producers sell live animals to consumers for their own personal use. It is unknown of the actual numbers of animals that are sold to consumers live, but it is believed that the majority of these producers are selling their animals live to friends or family for personal consumption. These animals could also be slaughtered in the MSU along with all other animals the producer may be raising. It is doubtful that these animals would enter the market for public consumption since many of these customers are very loyal to the producer. Although none of these animals would enter the public market, it is believed that producers will increase their herd and flock sizes once the capabilities of the mobile unit are known. This eventually would increase the flow of local product into the Newfoundland and Labrador market.

Some producers are also selling their live animals by shipping the animals out of province, mainly to Nova Scotia. The producers that ship out of province typically produce beef but it is also known that some sheep are being shipped out as well. Producers will usually get paid between \$1.00 and \$1.50 per pound live weight for cattle being shipped out of province. Shipping costs out of province can be very costly for producers and some of the producers would prefer to sell their animals in province. It is

¹⁷ Government of Newfoundland and Labrador – Department of Natural Resources, January 2012

Mobile Slaughter Unit Feasibility Study

believed that the MSU would provide some producers with the ability to have their animals slaughtered within the province and thereby reduce the number of animals being shipped out of the province. These animals would represent one of the types of animals being targeted for the MSU and would create further demand for use of the MSU. Producers that ship live animals out of province normally do not have the capabilities to slaughter, thus making it an ideal situation for operation of a MSU. These types of producers would also like their product “cut and wrapped” or their slaughtered animals delivered right to the wholesaler. They normally do not have anything to do with the secondary processing of the animals. These producers would also take advantage of a cut and wrap facility if there was one to help with the operations of the MSU.

Initial Start-up Costs for a MSU

The following table represents the initial start-up costs to get a MSU on the road in Newfoundland and Labrador. These are the initial costs for the five sizes of trailers that were examined for this feasibility study. The operational costs are not included in this table and it only represents the expenses to make the trailer operational. There could also be a 10% increase added to these final costs to provide room for error or unseen expenses that the project may experience.

Table 7: Initial Start-Up Costs for the Mobile Slaughter Units					
	27' Unit	36' Unit	40' Unit	45' Unit	53' Unit
Trailer	157,330.80	178,173.43	200,000.00	235,000.00	300,000.00
Truck	55,000.00	80,000.00	80,000.00	133,380.00	133,380.00
Equipment	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00
Rubber Boots	100.00	200.00	200.00	200.00	300.00
Rubber Gloves	25.00	50.00	50.00	50.00	50.00
Knives and steels	150.00	250.00	250.00	250.00	300.00
Coveralls and apron	100.00	200.00	200.00	200.00	270.00
Cleaning Solutions	200.00	200.00	200.00	200.00	200.00
Cleaning Utensils	100.00	100.00	100.00	100.00	100.00
Carcass Bags	50.00	50.00	50.00	50.00	50.00
Hair nets. Beard nets	50.00	50.00	50.00	50.00	50.00
Meat Hooks	400.00	500.00	500.00	500.00	600.00
Hook Rollers	300.00	300.00	300.00	300.00	300.00
UV Disinfection System	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00
Propane	300.00	500.00	500.00	500.00	500.00
Fuel	300.00	300.00	300.00	300.00	300.00
Truck/Trailer Insurance	2,123.31	2,431.73	2,772.80	3,488.04	4,129.20
Truck/Trailer Registration	0.00	0.00	0.00	0.00	0.00
License	0.00	0.00	0.00	0.00	0.00
Estimated Freight Cost	8,500.00	8,500.00	9,000.00	9,000.00	9,500.00
Total Cost	\$229,529.11	\$278,761.73	\$298,972.80	\$388,068.04	\$454,529.20

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Operational Costs

Operational costs are itemized in Table 8. These are the projected operational costs for the first year of the 27 foot unit. These costs are based on an operational period of six months. It would be recommended that there be one butcher operating the unit with help from the producer. The butcher's salary is based on thirteen pay periods at \$18 an hour. It is also important to note that the registration and insurance fees were included in the initial start-up costs and after the first year would also have to be included in the operational costs. There would also be a one week training period for the butcher that would cost one week's combined pay at \$630.

Table 8: Annual Operation Costs for a 27 Foot Trailer (First Year) ¹⁸						
Expenses	Annual Cost	Cost per Operation Day	Cost Per Lamb	Cost Per Cattle	Cost Per Goat	Cost Per Hog
Labour (6 months)	16,380.00	136.50	6.83	17.06	6.83	9.10
Meals and Hotel	5,000.00	41.67	2.08	5.21	2.08	2.78
Maintenance	1,500.00	12.50	0.63	1.56	0.63	0.83
Fuel	4,000.00	33.33	1.67	4.17	1.67	2.22
Equipment	1,500.00	12.50	0.63	1.56	0.63	0.83
Supplies	1,000.00	8.33	0.42	1.04	0.42	0.56
Propane	500.00	4.17	0.21	0.52	0.21	0.28
Protective clothing	500.00	4.17	0.21	0.52	0.21	0.28
Insurance	-	-	-	-	-	-
Registration	-	-	-	-	-	-
Office Expenses	500.00	4.17	0.21	0.52	0.21	0.28
Inspection	-	-	-	-	-	-
Miscellaneous	1,000.00	8.33	0.42	1.04	0.42	0.56
Communications	1,000.00	8.33	0.42	1.04	0.42	0.56
Advertising and Promotion	1,000.00	8.33	0.42	1.04	0.42	0.56
TOTAL	\$33,880.00	\$282.33	\$14.12	\$35.29	\$14.12	\$18.82

Initial Cost	\$229,529.11
Operational Cost	\$33,880.00
Training	\$630.00
Total Cost	\$264,039.11

As indicated above the total cost for the 27 foot Mobile Slaughter Unit and its first year of operation would be approximately **\$264,039.00**.

¹⁸ Multi Location Abattoir: Final Report 2009. Olds College, Alberta.

Mobile Slaughter Unit Feasibility Study

These are the projected operational costs for the first year of the 36 foot unit. These costs are based on an operational period of six months. It would be recommended that there be one butcher and a laborer operating the unit with help from the producer. The butcher's salary was based on thirteen pay periods at \$18 an hour and the laborer salary was based on \$15 an hour for 13 pay periods. It is also important to note that the registration and insurance fees will included in the initial start-up costs and after the first year would also have to be included in the operational costs. There would also be a one week training period for the butcher and laborer that would cost one week's combined pay of \$1,155.00.

Table 9: Annual Operation Costs for a 36 Foot Trailer (First Year) ¹⁹

Expenses	Annual Cost	Cost per Operation Day	Cost Per Lamb	Cost Per Cattle	Cost Per Goat	Cost Per Hog
Labour (6 months)	30,030.00	250.25	12.51	31.28	12.51	16.68
Meals and Hotel	5,000.00	41.67	2.08	5.21	2.08	2.78
Maintenance	1,500.00	12.50	0.63	1.56	0.63	0.83
Fuel	5,000.00	41.67	2.08	5.21	2.08	2.78
Equipment	1,500.00	12.50	0.63	1.56	0.63	0.83
Supplies	1,000.00	8.33	0.42	1.04	0.42	0.56
Propane	500.00	4.17	0.21	0.52	0.21	0.28
Protective Clothing	500.00	4.17	0.21	0.52	0.21	0.28
Insurance	-	-	-	-	-	-
Registration	-	-	-	-	-	-
Office Expenses	500.00	4.17	0.21	0.52	0.21	0.28
Inspection	0.00	0.00	0.00	0.00	0.00	0.00
Miscellaneous	1,000.00	8.33	0.42	1.04	0.42	0.56
Communications	1,000.00	8.33	0.42	1.04	0.42	0.56
Advertising and Promotion	1,000.00	8.33	0.42	1.04	0.42	0.56
TOTAL	\$48,530.00	\$404.42	\$20.22	\$50.55	\$20.22	\$26.96

Initial Cost	\$261,305.16
Operational Cost	\$48,530.00
Training	\$1,155.00
Total Cost	\$310,990.16

As indicated above the total cost for the 36 foot Mobile Slaughter Unit and its first year operation would be approximately **\$310,990.16**.

¹⁹ Multi Location Abattoir: Final Report 2009. Olds College, Alberta.

Mobile Slaughter Unit Feasibility Study

These are the projected operational costs for the first year of the 40 foot unit. These costs are based on an operational period of six months. It would be recommended that there be one butcher and a laborer operating the unit with help from the producer. The butcher's salary was based on thirteen pay periods at \$18 an hour and the laborer's salary was based on \$15 an hour for 13 pay periods. It is also important to note that the registration and insurance fees were included in the initial start-up costs and after the first year would also have to be included in the operational costs. There would also be a one week training period for the butcher and laborer that would cost one week's combined pay of \$1,155.00.

Table 10: Annual Operation Costs for a 40 Foot Trailer (First Year)²⁰

Expenses	Annual Cost	Cost per Operation Day	Cost Per Lamb	Cost Per Cattle	Cost Per Goat	Cost Per Hog
Labour (6 months)	30,030.00	250.25	12.51	31.28	12.51	16.68
Meals and Hotel	5,000.00	41.67	2.08	5.21	2.08	2.78
Maintenance	1,500.00	12.50	0.63	1.56	0.63	0.83
Fuel	5,000.00	41.67	2.08	5.21	2.08	2.78
Equipment	1,500.00	12.50	0.63	1.56	0.63	0.83
Supplies	1,000.00	8.33	0.42	1.04	0.42	0.56
Propane	500.00	4.17	0.21	0.52	0.21	0.28
Protective clothing	500.00	4.17	0.21	0.52	0.21	0.28
Insurance	-	-	-	-	-	-
Registration	-	-	-	-	-	-
Office Expenses	500.00	4.17	0.21	0.52	0.21	0.28
Inspection	-	-	-	-	-	-
Miscellaneous	1,000.00	8.33	0.42	1.04	0.42	0.56
Communications	1,000.00	8.33	0.42	1.04	0.42	0.56
Advertising and Promotion	1,000.00	8.33	0.42	1.04	0.42	0.56
Total	\$48,530.00	\$404.42	\$20.22	\$50.55	\$20.22	\$26.96

Initial Cost	\$296,252.80
Operational Cost	\$48,530.00
Training	\$1,155.00
Total Cost	\$345,937.80

As indicated above the total cost for the 40 foot Mobile Slaughter Unit and its first year operation would be approximately **\$345,937.80**.

²⁰ Multi Location Abattoir: Final Report 2009. Olds College, Alberta.

Mobile Slaughter Unit Feasibility Study

These are the projected operational costs for the first year of the 45 foot unit. These costs are based on an operational period of six months. It would be recommended that there be one butcher and a laborer operating the unit with help from the producer. The butcher salary was based on thirteen pay periods at \$18 an hour and the laborer's salary was based on \$15 an hour for 13 pay periods. It is also important to note that the registration and insurance fees were included in the initial start-up costs and there after the first year would also have to be included in the operational costs. There would also be a one week training period for the butcher and laborer that would cost a week's combined pay of \$1,155.00.

Table 11: Annual Operation Costs for a 45 Foot Trailer (First Year) ²¹						
Expenses	Annual Cost	Cost per Operation Day	Cost Per Lamb	Cost Per Cattle	Cost Per Goat	Cost Per Hog
Labour (6 months)	30,030.00	250.25	12.51	31.28	12.51	16.68
Meals and Hotel	5,000.00	41.67	2.08	5.21	2.08	2.78
Maintenance	1,500.00	12.50	0.63	1.56	0.63	0.83
Fuel	6,000.00	50.00	2.50	6.25	2.50	3.33
Equipment	1,500.00	12.50	0.63	1.56	0.63	0.83
Supplies	1,000.00	8.33	0.42	1.04	0.42	0.56
Propane	750.00	6.25	0.31	0.78	0.31	0.42
Protective Clothing	500.00	4.17	0.21	0.52	0.21	0.28
Insurance	-	-	-	-	-	-
Registration	-	-	-	-	-	-
Office Expenses	500.00	4.17	0.21	0.52	0.21	0.28
Inspection	-	-	-	-	-	-
Miscellaneous	1,000.00	8.33	0.42	1.04	0.42	0.56
Communications	1,000.00	8.33	0.42	1.04	0.42	0.56
Advertising and Promotion	1,000.00	8.33	0.42	1.04	0.42	0.56
Total	\$49,780.00	\$414.83	\$20.74	\$51.85	\$20.74	\$27.66

Initial Cost	\$384,872.04
Operational Cost	\$49,780.00
Training	\$1,155.00
Total Cost	\$435,807.04

As indicated above the total cost for the 45 foot Mobile Slaughter Unit and its first year operation cost would be approximately **\$435,807.04**.

²¹ Multi Location Abattoir: Final Report 2009. Olds College, Alberta.

Mobile Slaughter Unit Feasibility Study

These are the projected operational costs for the first year of the 53 foot unit. These costs are based on an operational period of six months. It would be recommended that there be two butchers and a laborer operating the unit with help from the producer. The butcher's salary was based on thirteen pay periods at \$18 an hour and the laborer's salary was based on \$15 an hour for 13 pay periods. It is also important to note that the registration and insurance fees were included in the initial start-up costs and after the first year would also have to be included in the operational costs. There would also be a one week training period for the butcher and laborer that would cost a week's combined pay at \$1,785.00.

Table 12: Annual Operation Costs for a 53 Foot Trailer (First Year) ²²

Expenses	Annual Cost	Cost per Operation Day	Cost Per Lamb	Cost Per Cattle	Cost Per Goat	Cost Per Hog
Labour (6 months)	46,410.00	386.75	19.34	48.34	19.34	25.78
Meals and Hotel	5,000.00	41.67	2.08	5.21	2.08	2.78
Maintenance	2,000.00	16.67	0.83	2.08	0.83	1.11
Fuel	7,500.00	62.50	3.13	7.81	3.13	4.17
Equipment	1,000.00	8.33	0.42	1.04	0.42	0.56
Supplies	500.00	4.17	0.21	0.52	0.21	0.28
Propane	750.00	6.25	0.31	0.78	0.31	0.42
Protective Clothing	500.00	4.17	0.21	0.52	0.21	0.28
Insurance	-	-	-	-	-	-
Registration	-	-	-	-	-	-
Office Expenses	500.00	4.17	0.21	0.52	0.21	0.28
Inspection	-	-	-	-	-	-
Miscellaneous	1,000.00	8.33	0.42	1.04	0.42	0.56
Communications	1,000.00	8.33	0.42	1.04	0.42	0.56
Advertising and Promotion	1,000.00	8.33	0.42	1.04	0.42	0.56
Total	\$67,160.00	\$559.67	\$27.98	\$69.96	\$27.98	\$37.31

Initial Cost	\$450,449.20
Operational Cost	\$67,160.00
Training	\$1,785.00
Total Cost	\$519,394.20

As indicated above the total cost for the 53 foot Mobile Slaughter Unit and its first year operation cost would be approximately **\$519,394.20**

²² Multi Location Abattoir: Final Report 2009. Olds College, Alberta.

Mobile Slaughter Unit Feasibility Study

SWOT Analysis

Strengths

There are a number of strengths that the MSU will bring to the economy of Newfoundland and Labrador. The most significant is that it will provide provincial inspection for those producers who previously had difficulty getting to provincially inspected facilities. The MSU also delivers a clean humane slaughter as per the Act and Regulations regulating slaughter and the end product is a specialty meat product that is top quality since animals are not being transported long distances to slaughter. When animals are transported before slaughter they are put under stress. When animals are slaughtered in the environment where they are raised it makes for a better quality of meat.

Weaknesses

The weaknesses that face the MSU is to overcome the high start-up and operational costs associated initially with the MSU. It also has to be determined who will operate the MSU after the pilot project is complete. The start-up and operational costs for the pilot project has yet to be determined and whether or not the project will get any financial help from the Growing Forward 2 program. Another weakness that faces the project is the fact that all producers want their animals slaughtered around the same time of the year. It is recognized that there is mainly two times in a year when the majority of the producers slaughter their animals. Finally, the last major weakness that faces the MSU project is the extensive geography of the Province of Newfoundland and Labrador. Since the meat producers are so vastly spread out it makes operational costs very expensive to overcome. For example, there may be a farmer in the central region with a day's slaughter of sheep. The Unit may be located somewhere on the Avalon and it is just too expensive for the unit to travel to Central to that farm for one day's slaughter. It is very important that the MSU schedule be designed in such a way to be the most cost effective for the operation.

Opportunities

The largest and most important opportunity that the project will bring is that producers will significantly increase their flock and heard sizes. The MSU will make slaughter much easier for the producers and give them an opportunity to have a provincially inspected product. Twenty-four of the SPANL members surveyed during the AGM indicated that they could handle 1,230 more sheep, 135 more goats and 65 more cattle. Once producers use the MSU and realize how beneficial it is to them they will want to increase the number of animals they raise. There is also the potential to entice more people into the industry and to start raising animals. It is believed that Newfoundland and Labrador consumes 952,000 lbs of lamb annually and only 27.5% of that lamb is produced locally leaving a large market potential for existing and new producers to start raising more

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animals²³. It is believed the majority of Newfoundlanders and Labradoreans would much rather consume local lamb rather than imported lamb.

Threats

There are a number of threats associated with the introduction of the MSU. The Mobile Slaughter facility may potentially take away customers and business from already existing established slaughter facilities. It was recognized after consultation with slaughter facility owners and agriculture representatives that most of these slaughter facilities are always busy and they are in very high demand. It is believed that the potential MSU users are producers that have limited access to slaughter facilities and that, therefore, MSU usage will not negatively impact established slaughter facility owners and workers. Another threat that faces the MSU is determining what will happen with the MSU after the pilot project is finished. Again, there are operational expenses associated with the MSU and it has to be determined if funds will be made available to continue its operation. One solution would be to act co-operatively with the producers who would be expected to contribute a minimum amount to help cover operational costs.

Survey Results and Analysis

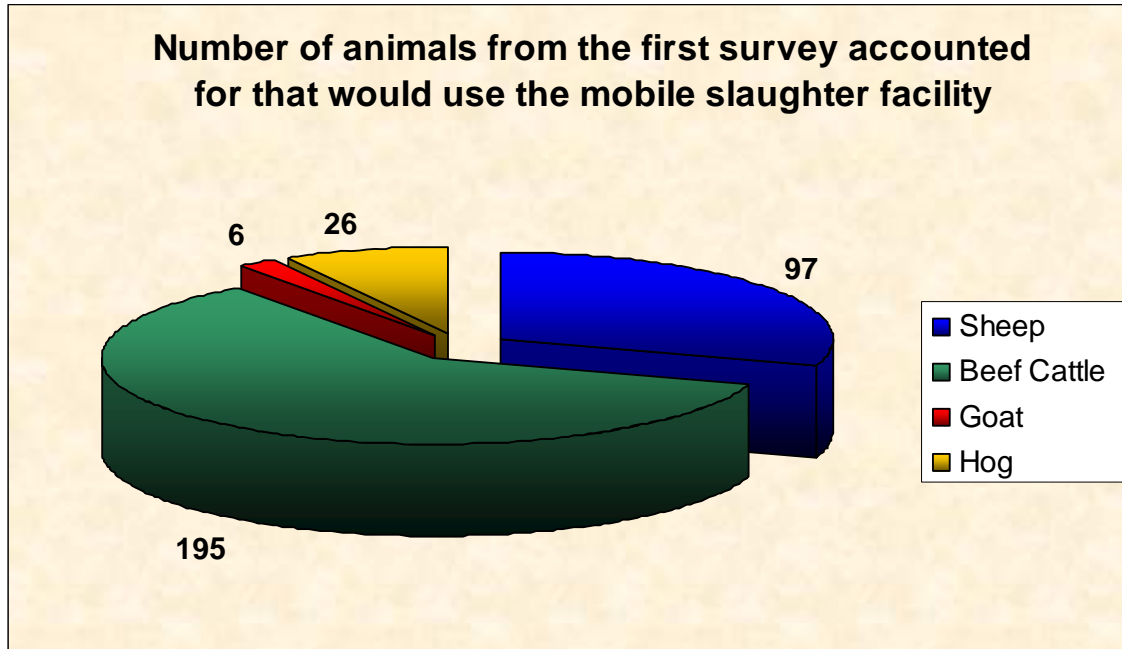
There were two surveys conducted for this feasibility study. The first survey was sent to 128 meat producers in the province in the summer of 2012. This represents all the meat producers identified by the Department plus 27 surveys sent to farmers who were also identified as possible sheep producers but were not included in the original list. The second survey was conducted at the SPANL annual general meeting in the fall of 2012. There were twenty four SPANL members that participated in the second survey.

In the first survey there were twenty returned surveys for a survey participation of 15.63%. The low survey return may have been due to the busy time of the year for producers. Out of the twenty returned surveys nine participants said they would use the MSU. Out of the participants that would use the mobile slaughter house there were 195 beef cattle, 97 lamb, 6 goat, and 26 hog that would be slaughtered in the MSU. The following graph represents these numbers.

²³ Sheep Producers Association of Newfoundland and Labrador – *Industry Strategy, April 2000*

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Graph 4: Number of Potential Animals Slaughtered in MSU from First Survey.



In the second survey it was reported that sixteen out of the twenty-four survey participants would use the MSU. Out of these sixteen survey participants, it was indicated that 509 sheep and 51 goats would be slaughtered in the MSU. We cannot combine the two surveys and use the participant's numbers as one since some of the participants may have participated in both surveys. The majority of the analysis is based upon the second survey that was conducted by SPANL for the purpose this report. The following analysis will be on the SPANL survey only:

Table 13: SPANL Survey - Who do you sell your livestock to?		
Family	12	50.00%
Friends	14	58.30%
Restaurants	8	33.30%
Public	19	79.20%
Retail	6	25.00%
Butcher	3	12.50%

It was determined that the majority of producers sell directly to the public and that producers have no difficulty selling their product.

Table 14: SPANL Survey - Do you cut and wrap the meat you sell?	
Lamb	6
Goat	2
Beef	4
Pork	1

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It was also determined that the majority of the producers do not cut and wrap their products. This would suggest that a cut and wrap facility would not be needed right away with the introduction of a MSU. It is reported that the majority of the producers are selling their animals whole. It may be determined at a later date that a cut and wrap facility may be required to enter into more potential markets when production increases.

Table 15: SPANL Survey - What price per pound do you receive for each type of meat you sell? (On hoof)				
	Lamb	Goat	Beef	Pork
Average	\$1.92	\$1.50	-	-
Range	\$1.75 - 2.00	\$1.50	-	-

It was reported that some of the producers sell their animals on the hoof. These animals would be a target market for the MSU. It was determined that producers are selling their animals from \$1.75 to \$2.00 per pound for live animals. The farmers could easily sell their animals for \$6.00 per pound once it has been slaughtered in the MSU (or any other licensed facility). The introduction of the unit may reduce the number of farmers selling live animals.

Table 16: SPANL Survey - What price per pound do you receive for each type of meat you sell? (Slaughtered)				
	Lamb	Goat	Beef	Pork
Average	\$4.00	\$4.67	\$2.56	-
Range	\$3 - 10.50	\$4 - 5	\$2 - 3.25	-

The average price producers are receiving for their lamb was \$5.11 per pound, ranging from \$3.00 to \$10.50 per pound. With the introduction of the MSU it is conceivable that all slaughtered animals will sell closer to \$6.00 per pound. This is the typical price currently in the marketplace with some survey participants receiving as much as \$10.50 per pound. It seems that the goat prices are very stable and a MSU will have little impact of the sale of goat. Regardless, producers will be able to sell their goats for a reasonable return. Beef producers will be able to sell their meat for \$3.00 per pound, which represents a very reasonable since some producers are receiving \$3.25 per pound. Some producers are selling their beef products for as low as \$2.00 a pound, however; this gap in pricing could be reduced so that these producers would be able to sell their products for a minimum of \$3.00 per pound and as much as \$3.25 per pound.

Table 17: SPANL Survey - Do you slaughter your own livestock?	
Yes	18
No	6

Seventy-five percent of producers slaughter or have their own animals slaughtered at another facility. This indicates that the majority of the survey participants would welcome a MSU. When we do a cross tabulation of the participants that slaughter their own livestock and would use the MSU, eleven out of the eighteen participants would use

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the mobile slaughter unit. This would suggest that the other seven people that would not use the MSU. This would also suggest that they have their own slaughter facility, have easy access to a slaughter facility or only raise enough animals to supply their own needs for food.

Table 18: SPANL Survey - Do you travel to have your livestock slaughtered?	
Yes	11
No	13

Table 19: SPANL Survey - If so, what is the distance to the nearest slaughter Facility (round trip) in km?	
Average	160
Range	5 - 400

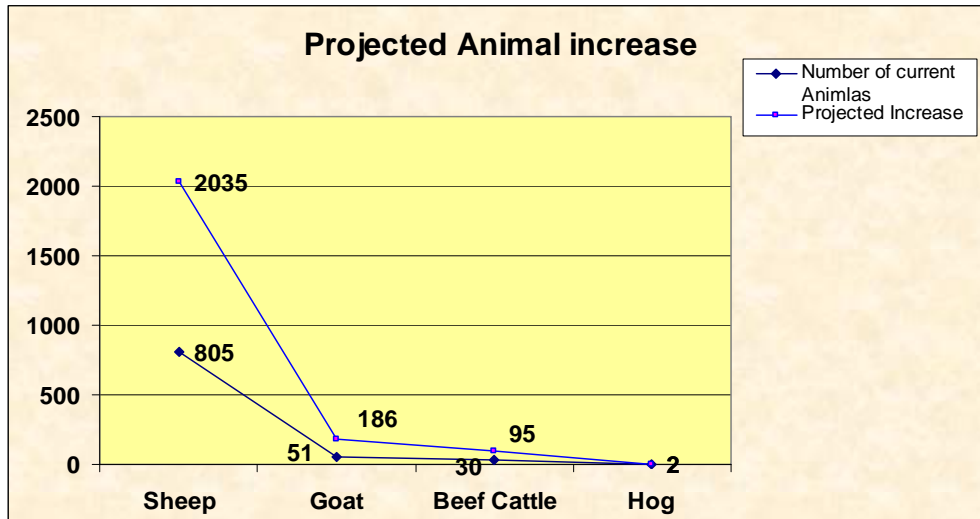
It was reported that eleven out of the twenty three people traveled to get their animals slaughtered. It was also indicated that some producers have to travel great distances to get their animals slaughtered and represents a direct impact to the cost of production. The average distance producers travel is 160 km, round trip. This is not only expensive but puts stress on the animals. It was reported that some producers travel as much as 400 km to get their animals slaughtered. These eleven producers would be a ideal candidates for the MSU and would take a direct cost from these producers giving them more profit and less work to get their animals slaughtered.

Table 20: SPANL Survey - Has the number of livestock increased or decreased in the last 3 years?		
Increased	11	45.80%
Decreased	9	37.50%
Remained the same	4	16.7%

The members of SPANL have a very stable flock size. Combining the number of increased flocks sizes and the flock sizes that remained the same would account for 62.5% of the total livestock population. There was 45.8% of the participants who increased their flock in the last their three years. When participants were asked if they were willing to increase the size of their flock, twenty-two out of the twenty-four producers indicated they would be interested in increasing their flock size. This is indicative that the majority of the producers are willing to expand and that the industry has the potential to grow with the introduction of the MSU. There are still some challenges to growth including the shortage of hay and pasturage.

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Graph 5: The Projected Animal Increase of the 24 SPANL Survey Participants



This graph represents the number of breeding animals identified by the SPANL members and the projected increase in their flocks with the introduction of the MSU. These projections would also include sheep producers who would not use the MSU but would still increase their flocks as a result of the recent SPANL sheep strategy. There would be a increase of 1,230 lambs, 135 goats, 65 cattle and no change in hog numbers. These increases in animal numbers only represent the SPANL members that were present at the AGM. It is recognized that the number of producers surveyed represents 19.63% of the total number of animals in Newfoundland and Labrador, taking into consideration that it is estimated that there are approximately 4,100 sheep in the province. We can conclude that this is just a portion of the animal population and there would be additional growth in flock sizes. It is believed that most of these non-members would likely take advantage of and use the MSU.

Table 21: SPANL Survey - Would your current facilities be able to handle additional livestock?		
Yes	19	79.20%
No	15	20.80%

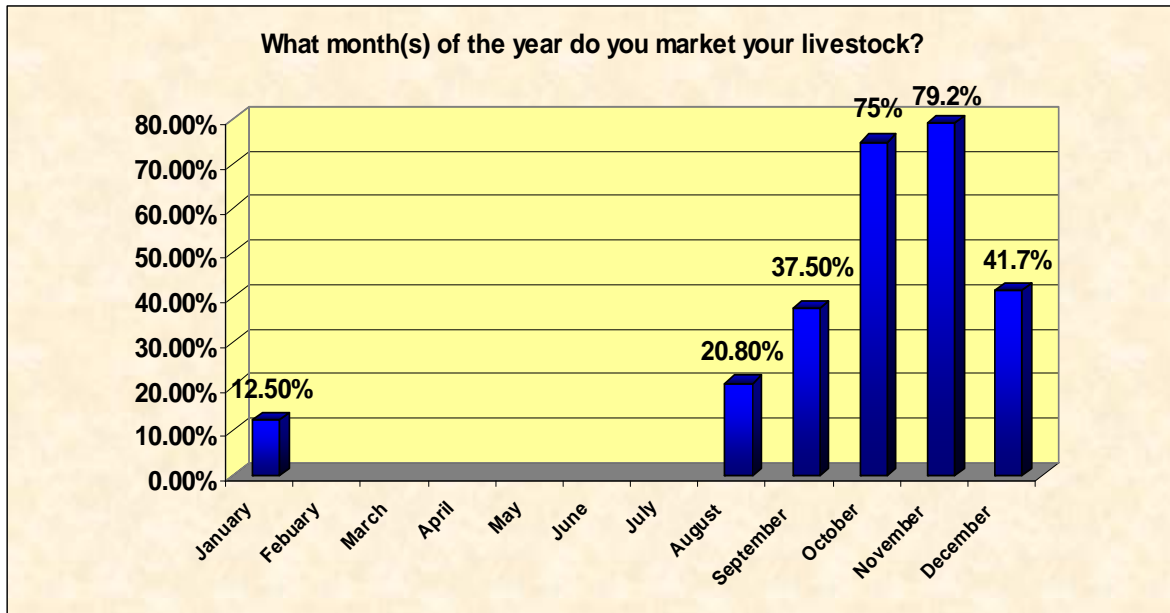
The majority of the SPANL members indicated that their facilities could handle additional livestock. This indicates that the majority of the farmers in Newfoundland and Labrador are not producing livestock at maximum capacity. The above graph represents the increase in breeding animals that their farm could handle. An increase of 2,035 sheep would be approximately 49% of all sheep on the island today. This increase represents only 24 of the sheep producers on the island, the overall number could be substantially higher.

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Table 22: SPANL Survey - How often do you have your animals slaughtered?				
	Lamb	Goat	Cattle	Hog
Weekly	8	2	-	-
Monthly	-	-	-	-
1-2 Times a Year	13	4	4	

The above table indicates the number of times animals are slaughtered. Typically producers either have their animals slaughtered weekly or one or two times a year. The majority of producers process once or twice a year. The scheduling of the MSU is going to be one of the major obstacles to overcome for establishment of a fully functional MSU. However, these numbers indicate that there is some flexibility among producers as to when they slaughter their animals. The producers that slaughter their animals once or twice a year is ideally suited for the MSU since all their animals can be slaughter at the one time. The farmers that slaughter weekly are those farmers that likely slaughter on demand and have their own slaughter facilities.

Graph 6: Months of the Year SPANL Members Market their Products



The above graph represents the percentages of SPANL members that market their products at different times of the year. It was indicated that they also market their products six months of the year, the busiest of times being the fall of the year. This indicates that the MSU would only be in operation six months of the year. It should also be noted that local producers are fulfilling almost 0% of the market during the other six months of the year. Supplying the market year round should be explored. These numbers also indicate that the MSU would be starting off as a seasonal operation.

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Farmers Expenses for Slaughter

This section of the feasibility study will cover the expenses that farmers are incurring to get their animals slaughtered. This has been determined to be the main cost associated with raising their animals. When asked in the survey what were the costs associated per animal to get their livestock slaughtered, the following information was reported.

Table 23: SPANL Survey - What do you pay per animal to have your livestock slaughtered?				
	Sheep	Goat	Beef	Hog
Average	\$13.25	\$10.00	\$25.00	\$25.00
Range	\$6-\$20	\$10.00	\$25.00	\$25.00

The above table indicates that the average cost for a producer to have a lamb slaughtered would be \$13.35. Some producers pay up to \$20.00 per animal for slaughter. For goats it was determined that producers pay \$10.00 across the board to have the animals slaughtered. For cattle the cost for slaughter would be \$25.00 a head. This does not include the cutting and packaging of the meat, since the majority of farmers do not cut and package their meat. This study concentrated solely on mobile slaughtering and did not analyze the cutting and packaging of meats.

It was also determined from the survey that the average distance that farmers have to travel to get their livestock slaughtered is 160 km. This average includes producers that do not travel to get their animals slaughtered because they have their own facilities. Therefore it is likely that the average distance of producers who would actually use the MSU would in fact be much higher than 160 kilometers. It is estimated that a farmer on average pays approximately \$100.00 in travel to get their animals slaughtered. This includes fuel and other expenses to travel to the slaughter facility. It was also noted that some farmers leave their animals at the facility and then return to pick the carcasses resulting in a double round trip. This would mean that the travel costs would be as much as 50% higher on average than the \$100.00 previously stated. Results from the first survey indicated that the amount that producers paid for travel was \$125.00. Also, some producers that slaughter more than once travel multiple times a year to get their animals slaughtered. It has been estimated that 27 producers would use the MSU with an average of \$100.00 for each producers' travel expenses. This indicates that the producers' combined travel expenses are approximately \$2,700.00. This amount is a conservative number and could be much higher.

Mobile Slaughter Facility Usage

This section of the paper describes the potential production usage of the mobile slaughter unit if it were to be introduced into the industry. A combined total from the two surveys conducted was used to predict the number of producers utilizing the MSU and the number of animals this would represent. There may be some duplication in the responses but there was a very low participation rate of SPANL members in the first survey. Therefore, this will represent everyone that completed a survey. The following

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table lists the number of animals that would be slaughtered in the MSU in the first year of its operation.

Table 24: Number of Animals slaughter in the MSU in the First Year	
Sheep	606
Beef	195
Goat	57
Hog	26

To determine how many weeks the MSU would be in full operation we will assume that the MSU can slaughter 20 sheep a day, 8 cattle a day, 20 goats a day, or 15 hogs a day. As previously indicated, also included is a day for travel and a full day of cleaning and maintenance per week. This results in three full slaughter days of operation per week. The following table represents how many days the MSU would be in operation.

Table 25: Number of Days the MSU will be in Use					
Animal Type	Number of Animals	Full Slaughter (Days)	Travel (Days)	Cleaning and Maintenance (Days)	Total number of Weeks of Operation
Sheep	606	30.30	10.1	10.1	10.1
Beef	195	24.38	8.125	8.125	8.1
Goat	57	2.85	1	1	1
Hog	26	1.73	1	1	1
TOTAL		59.26			20.2

As described in the above table, the Mobile Slaughter Unit will be in operation for approximately twenty weeks (approximately five months). As this would be a new venture, there would be expected delays so an allowance of an extra one month was included as a buffer in the operation for the first year. This would mean that the MSU would be in production for six months.

Return on Investment

As indicated earlier, the size of the trailer will determine start-up and operational costs. This section of the study will review the various sizes of trailers in terms of start-up and operational costs and provide projections for the return on investment and the impact on income and cost of production savings for the producers.

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Table 26: Return On Investment				
	Lamb	Goat	Beef	Hog
Number of Animals Slaughtered	416	57	161	26
Animals Sold on Hoof	190	0	34	0
Number of Producers	27	*	*	*
Average Weight of Animal (dressed)	40lbs	30lbs	700 lb	
Current Average Price (per pound)	\$4.00	\$4.67	\$2.50	
Average Price (sold on hoof)	\$1.92		\$1.50	
Average Price per pound for Slaughter in MSU	\$6.00	\$5.00	\$3.00	
Average Expenses for Slaughter (per year)	\$8,212.00	\$570.00	\$4,025.00	\$25.00
Return on Investment First Year	\$72,500.00	\$1,134.30	\$96,075.00	\$650.00
Total Return on Investment (First Year)	\$170,359.30			

* Unknown because of confidentiality of SPANL survey.

Summary of Return on Investment

Table 26 represents the return on investment per animal type before operational costs. It is to be noted that the smallest unit would be unable to slaughter beef and in this regard the primary processing of beef has not been included in the section reviewing the 27 foot unit.

It was determined that the 27 foot unit will cost approximately \$264,039.11 to purchase and operate for the first year, costing approximately \$36,003.31 a year thereafter to operate. It is recommended to add an extra ten percent of the yearly operational cost for unexpected expenses, equipment breakdowns and special maintenance. The 27 foot slaughter trailer is the least expensive of all the trailers and the smallest. It was determined that this trailer could be operated by one butcher because of its compact size. This unit can only slaughter sheep, lambs, goats and maybe hogs depending on its specifications. This unit would be unable to slaughter beef cattle even though there was great interest by beef farmers for a MSU. Also, there are sheep producers that raise beef. The return on investment for this unit would be approximately \$74,284.30 for slaughter of lambs, goats and hogs. This would provide a net return of \$40,484.30 annually. It is also recognized that as producers increase their livestock numbers, the annual return will also increase. Assumptions utilized in this study's calculations were based on the number of known animals determined from the surveys and did not make projections for the number of animals in future years. It would take 6.5 years of MSU operation to return the initial start up costs from the money generated by producers.

The 36 foot unit will cost approximately \$310,990.16 to purchase and operate for the first year. This unit is larger and should be operated by two people to maximize efficiency. It would cost approximately \$50,961.73 to operate this MSU after its first year of operation. This number will increase depending on the increase in the number of

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animals that are processed by the MSU. There should also be a further 10% added to the yearly operational cost for unexpected expenses, equipment breakdowns and special maintenance. This trailer can slaughter lambs, goats, cattle and hogs. It is determined that the return on investment this unit would generate approximately \$170,359.30 per annum. The money generated minus the yearly operational cost would result in a total return on investment in the amount of approximately \$119,397.57 per annum. It is also recognized that as producers increase their livestock numbers this return per year will also increase. Calculations were based on the number of animals known from the surveys without projections of animals for future years. It would take 2.6 years of MSU operation to return the initial start up costs from the money generated by producers.

The 40 foot unit will cost \$345,937.80 to purchase and operate for the first year. It would cost approximately \$51,302.80 to operate this MSU after the first year. This number will increase depending on the increase in the number of animals that are processed through the MSU. There should also be an extra 10% added to the yearly operational cost for unexpected expenses, equipment breakdowns and special maintenance. This trailer can slaughter lambs, goats, cattle and hogs. It is determined that the return on investment that this unit would generate and save the producers is approximately \$170,359.30 per annum. The money generated minus the yearly operational cost would result in a total return on investment of approximately \$119,065.5 per year. It is also recognized that as producers increase their livestock numbers this return per year will also increase. Once again, calculations were based on the number of animals known from the surveys without projections of animals for future years. It will take approximately 2.9 years of MSU operation to return the initial start up costs from the money generated by producers.

The 45 foot unit will cost approximately \$435,807.04 to purchase and operate for the first year. It would cost approximately \$52,552.80 to operate this MSU after the first year. This number will increase the number of animals that are processed through the MSU. There should also be an extra 10% added to the yearly operation cost for unexpected expenses, equipment breakdowns and special maintenance. This trailer can slaughter lambs, goats, cattle and hogs. It is determined that the return of investment this unit would generate and save the producers is approximately \$170,359.30 per annum. The money generated minus the yearly operational cost would result in a total return on investment in the amount of \$117,806.5 per annum. It is also recognized that as producers increase their livestock numbers this return per year will also increase. Calculations were based on the number of animals known from the surveys and did not make projections of animals for future years. It will take approximately 3.7 years of MSU operation to return the initial start up costs from the money generated by producers.

The 53 foot unit will cost 519,394.20 to purchase and operate for the first year. It will cost approximately \$71,289.20 to operate this MSU after the first year. This number will increase depending on the number of animals that are processed by the MSU. There should also be an extra 10% added to the yearly operational expenses for unexpected costs, equipment breakdowns and special maintenance. This trailer can slaughter lambs, goats, cattle and hogs. It was determined that the return on investment that this unit would generate and save for the producers is approximately \$170,359.30 per annum. The money generated minus the yearly operational cost would result in a total return of

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investment of \$99,070.10 annually. It is also recognized that as producers increase their livestock numbers this return per year will also increase. Calculations were based on the number of animals taken from the surveys without projections of animals for future years. It will take 5.2 years of MSU operation to return the initial start up costs from the money generated by producers.

Conclusions

The Mobile Slaughter Unit project was initially started by the Sheep Producers of Newfoundland and Labrador. Their interest was mainly for the slaughter of lambs and for use primarily by the sheep producers of this province. If the MSU is acquired for the sheep industry only, then the 27 foot mobile slaughter unit would be sufficient. However, it was determined that some sheep producers also raise other types of animals including beef cattle and it was stressed by some of the producers that the MSU should also be capable of slaughtering beef cattle. The result of this feasibility study is that a MSU program appears to be a reasonably viable option, assisting sheep producers financially through an infrastructure investment that will help the industry grow.

Overall, the 36 foot mobile slaughter trailer would provide greater flexibility for the meat industry in this province. This is the smallest unit available that is capable of slaughtering all types of animals. This trailer has the highest net return on investment at approximately \$119,397.57 per annum. It also has the lowest operational costs of all the trailers that can slaughter all the different types of livestock. It also appears that a unit larger than the 36 foot unit would not have as high a return on investment as the 36 foot unit.

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Appendix A: 36 Foot Mobile Slaughter Unit Manufactured by Tri-Van²⁴



²⁴ Trivan Truck Body, Ferndale WA.

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