OREGON
LAMB PROCESSING
FEASIBILITY
STUDY

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NEWCO Northwest, LLC

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Executive Summary

Sheep production is a significant part of Oregon agriculture, ranking as the 27th largest commodity in the state with a value of $14,550,000 in 2002. Oregon is the 10th largest sheep producing state in the U.S. with 235,000 sheep and lambs as of January 2003. Currently Oregon produces approximately 150,000 lambs per year providing adequate supply for the 65,000 carcass equivalents needed to meet the state consumption level.

Data indicates that a favorable market exists for lamb both nationally and in Oregon. Although U.S. sheep numbers are in decline, lamb utilization in the U.S. has increased 39 million pounds since 1979. The results of a survey of 194 grocery outlets in Oregon, Washington and Idaho show that 91% of the stores surveyed carry lamb. 53% handle domestic product, 35% imported product, and 3% carry both. 96.8% of the meat managers interviewed in this survey indicated a desire to carry domestic product. A 1997 survey notes that Oregon consumers indicate a preference for a local product and a willingness to pay slightly more for a local product.

Oregon direct marketers have developed effective marketing programs in retail, HRI, and farmers markets. Oregon direct marketers supply approximately 14% of the carcass equivalent needs of the Oregon market with 9,400 lambs per year being processed in Oregon USDA inspected facilities. The average cost of this processing is $46/head. Through these marketing efforts Oregon's USDA inspected slaughter numbers of sheep and lambs have increased from 3,300 in 1997 to 9,900 in 2002. 100% of Oregon direct marketers surveyed indicated that issues related to slaughter were limiting factors to their market expansion. These include slaughter capacity, cost of processing, food safety, packaging and the disposal of offal. Both the processors and the retailers echoed similar concerns.

The existing Oregon USDA inspected facilities are designed for multi-species processing which precludes specie specific equipment and the related labor efficiencies that may contribute positively to lowering cost and minimizing cross contamination during processing. The high cost of technology in processing and packaging equipment is an obstacle to implementing improvements to existing facilities which would allow for decreased bacterial contamination of product and competitive packaging. The disposal of offal becomes a cost rather than a revenue stream since rendering facilities in the region will not accept sheep offal due to scrapie issues and landfills are used for disposal with costs ranging from $18 per ton to $80 per ton depending on the location. Transportation to the landfill is in addition to this tipping fee.

Although the argument exists that lamb slaughter facilities in the U.S. are currently working under their capacity, this does not appear to be the case in Oregon where facilities and facility users interviewed indicate that there is limited available capacity to allow for expansion and that the facilities lack the equipment and infrastructure to process and package in a competitive manner. Because of these conditions growth in marketing and processing of local product is limited.

The production capability of the Oregon sheep industry coupled with the need for improved processing infrastructure leads to the conclusion that improved processing is warranted in Oregon

Stationary processing and mobile processing were evaluated, in this study, for their ability to meet the needs of the Oregon sheep industry in relationship to local production and market. It was determined that a stationary processing facility in Oregon would require a volume of 600 lambs per day or 144,000 lambs per year to service the fixed costs related to construction and operation of the facility. This volume would equal 70% of the current consumption of lamb in Oregon, Washington and Idaho based on current population figures and consumption rate of 1.3 pounds per capita on a carcass equivalent basis. This volume would require the acquisition of an existing national or regional market or contract processing for a business with an extensive established market.

It was further determined that attracting the current Oregon direct marketers to utilize a stationery facility could only occur if significant benefits in cost and potential market expansion through improved processing could be realized. Direct marketers are located throughout the state of Oregon and utilize existing USDA inspected facilities that are in relatively close proximity to their operations. Although cost benefits, increased capacity and improved processing could be achieved it was determined that these benefits would not be of enough significance to assure the utilization of the facility if it were located outside the production area of the direct marketer.

For these reasons it was determined that a mobile facility designed to process a minimum of 200 lambs per week on a contract basis, with a stationary fabrication facility would best match current Oregon production, processing and marketing of lamb.

The facility proposed would provide slaughter and fabrication on a contract basis for lamb, goat and veal. The facility would be designed to use the inverted system of slaughter to maximize efficiency and offer the most cost-effective price possible to provide users with a cost competitive product. The facility would focus on food safety issues to eliminate the possibility of bacterial contamination at each stage of processing through the use of current technology in processing and the development and implementation of a HACCP plan to insure good handling practices. Waste disposal issues would be addressed through on-farm composting. By-products would be collected and marketed. A stationary fabrication facility would be established on the I-5 corridor.

The goal for all product services would be to produce a consistent premium product for the users allowing them to capitalize on the identity of an Oregon produced and processed product, with visions of clean, green and local, building on consumer survey data that indicates a preference for local product.

The following discussion provides the information used in reaching this conclusion.

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Introduction

The objective of this study is to determine the feasibility of operating a lamb processing facility in Oregon. The following general factors were studied to aid in making this determination: 1) the health of the US sheep industry, 2) the health of the Oregon sheep industry, 3) domestic and international markets for lamb products, and 4) operational requirements for processing, marketing, and distributing lamb and lamb by-products.

US Sheep Industry in Decline

The US sheep industry has experienced a steady decline in numbers of sheep over the last 60 years from 56.2 million head in 1942 to 6.35 million head as of January 1, 2003. (Figure 1). The decline of the US sheep population has been precipitated by a variety of economic and environmental reasons. Some of the factors include:

- lower producer returns compared to other crop or livestock enterprises
- the availability of labor
- government policies associated with grazing on public lands
- the lack of predator control
- foreign trade
- technological and genetic advances in other competing meat products
- shifts in consumer's attitudes towards meat consumption
- more convenient meal choice

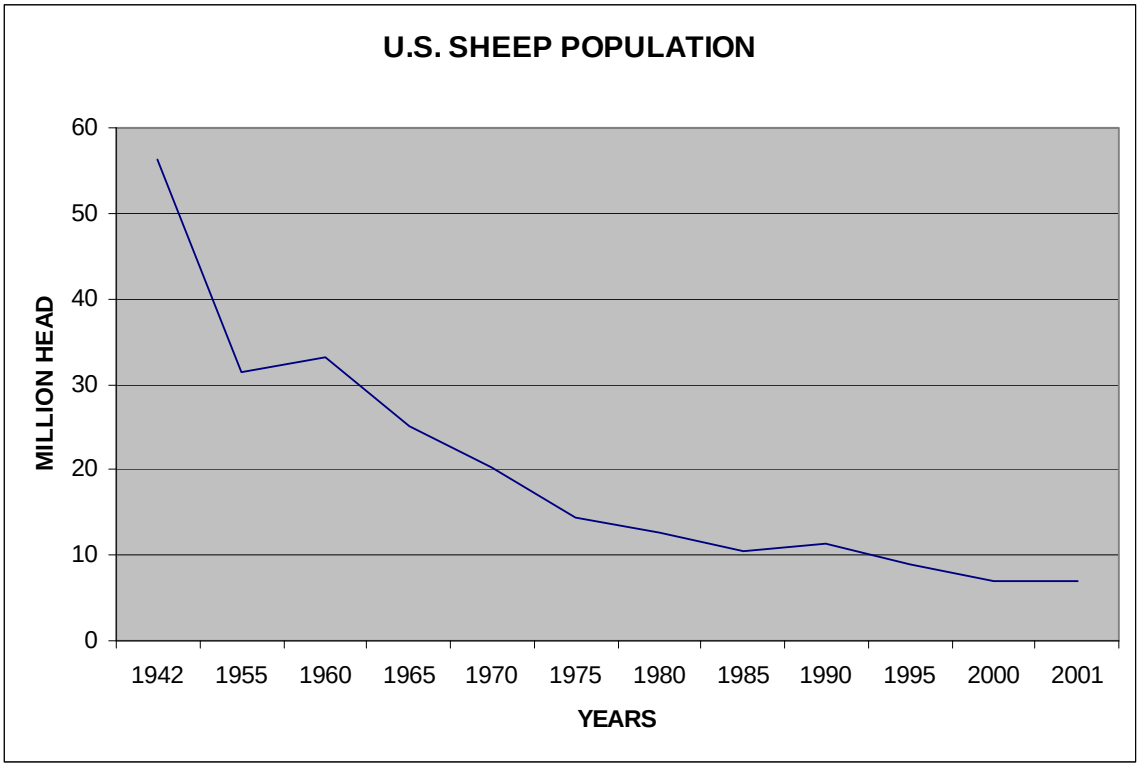


Figure 1: US Sheep Population in Decline
Source: NASS Sheep and Goat Report January 31, 2003

However, despite the fact that sheep numbers have declined, lamb meat production has followed a different course. In 1960 the average dressed weight of lambs, through

federally inspected slaughter plants, was 48 pounds. This has risen to a high of 71 pounds in 2001 (Figure 2). The industry's efficiencies have increased raising more pounds per lamb. Other competing meat proteins have also increased their efficiencies. The Purcell study "Problems, Needs, Opportunities and a Prescription for the Future" identified that from 1970 to 1990 the pork producers had increased production per sow by 65 to 70%. In the same time frame the sheep industry found gains of only 25 to 30%. (Purcell).

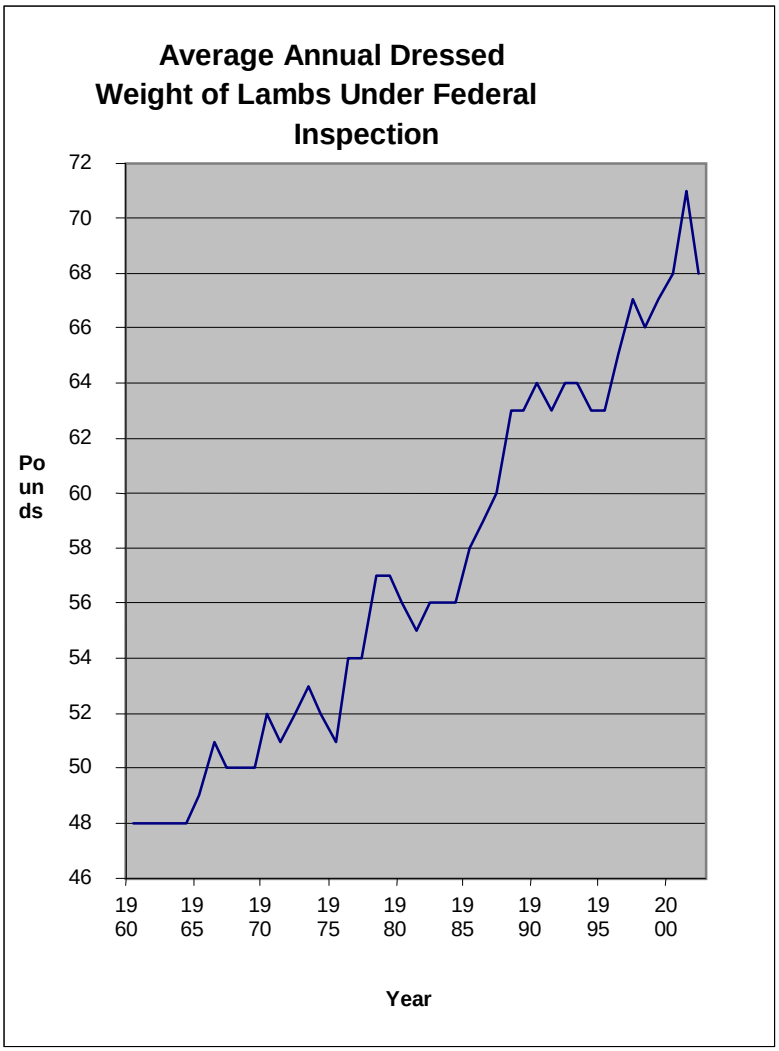


Figure 2: Lamb Slaughter Weight
Source: USDA/Economic Research Service

Although sheep production does not lend itself to the extreme production efficiencies that have played a role in lowering the costs in the pork and poultry industries, there are different management techniques that would help lower production costs per ewe. This focus on efficiencies needs to be emphasized in all segments of the lamb meat industry.

Beef is identified as a substitute for lamb when the price of lamb meets consumer resistance. (Schroeder). Therefore, it is in the best interest for every segment of the lamb industry to develop efficiencies at a rate to compete with other meat proteins, while not

ignoring the goal of providing a high quality eating experience. This is paramount if the U.S. sheep industry is to effectively compete.

Along with the decreasing sheep numbers, per capita lamb meat consumption in the US, based on retail consumption figures, has also decreased from 2.9 pounds in 1970 to 1.1 pounds in 2002 **(**Figure 3). However, owing to population increase in the US, (205 million people to 286 million in the same time period) the amount of lamb consumed in the US has increased from 347 million pounds in 1979, which was the all time low, to 386 million pounds in 2001 (Figure 4).

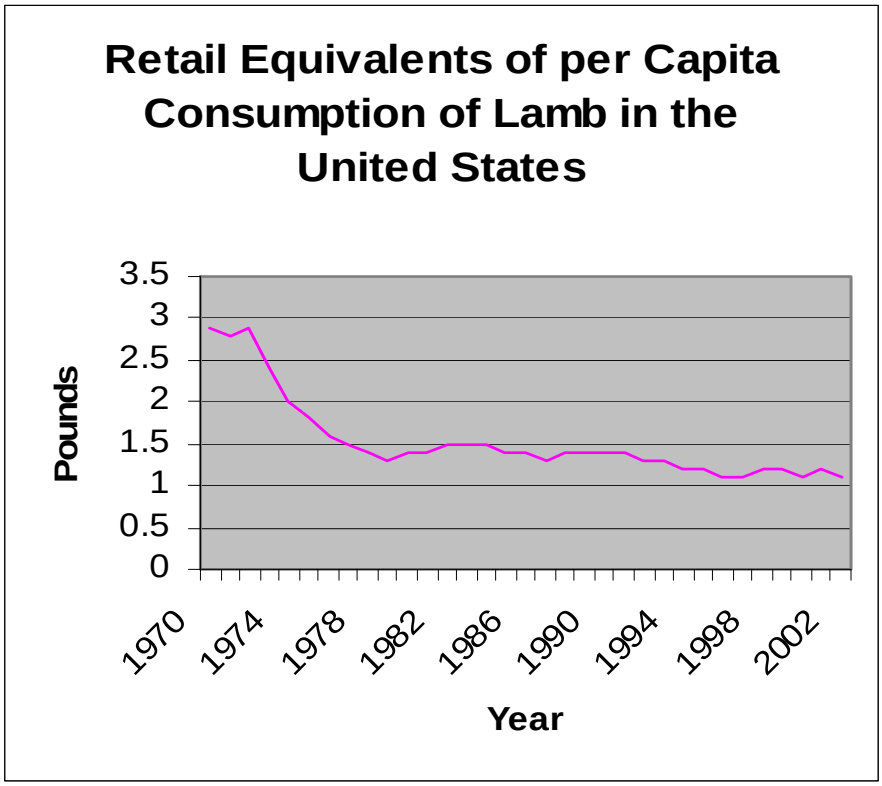
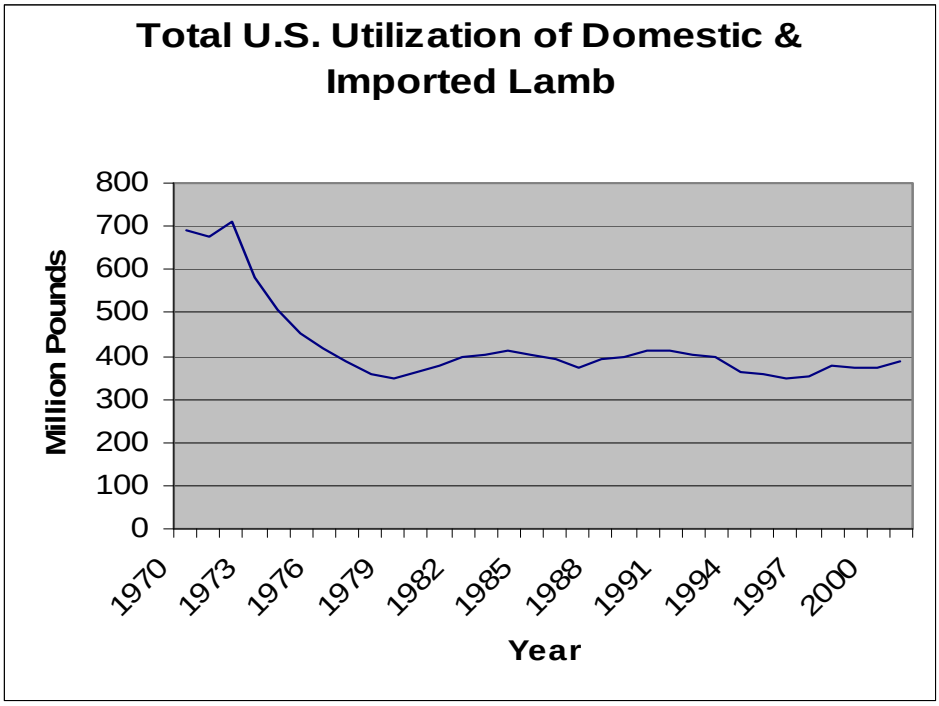


Figure 3: Per Capita lamb consumption in USA

Source: USDA/Economic Research Service



Given the steady decline in the US sheep population, some of the 11% increase in lamb meat supplies over the last 2 decades has been from imports. Since 1991 the New Zealand and Australian processing industries have been able to develop efficiencies in their production and processing. Additionally, Australian and New Zealand processors have successfully extended product shelf-life and this allows them to ship their lamb products overseas in a chilled state to compete with U.S. domestic fresh product. Imports are not only filling the void of what domestic product is unable to supply without production volume increases, but imports are also taking on a percentage of the market share once held by domestic product. This increased presence of imports is demanding that the U.S. lamb industry evaluate present production and processing techniques in order to maintain or increase current market share (Figures 5 and 6).

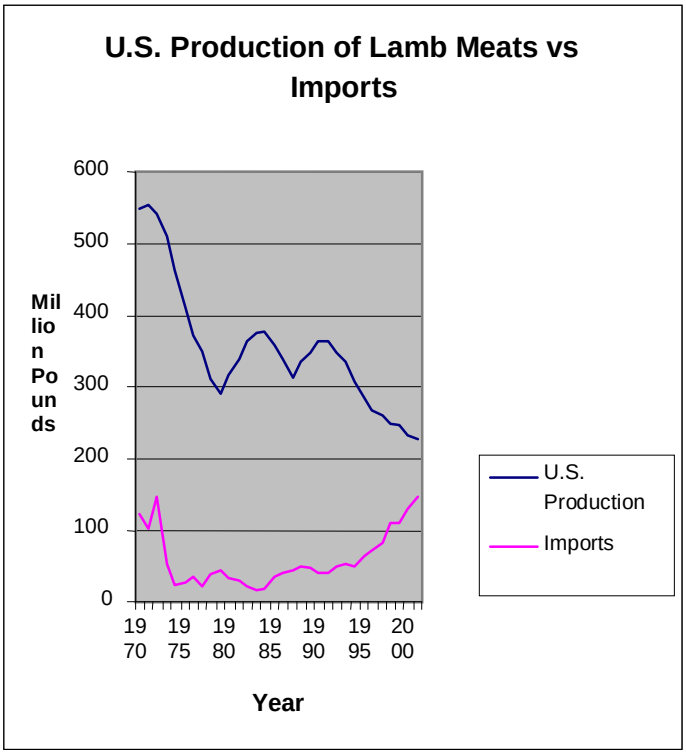


Figure 5: U.S. Lamb Production vs Lamb Meat Import
Source: USDA/Economic Research Service

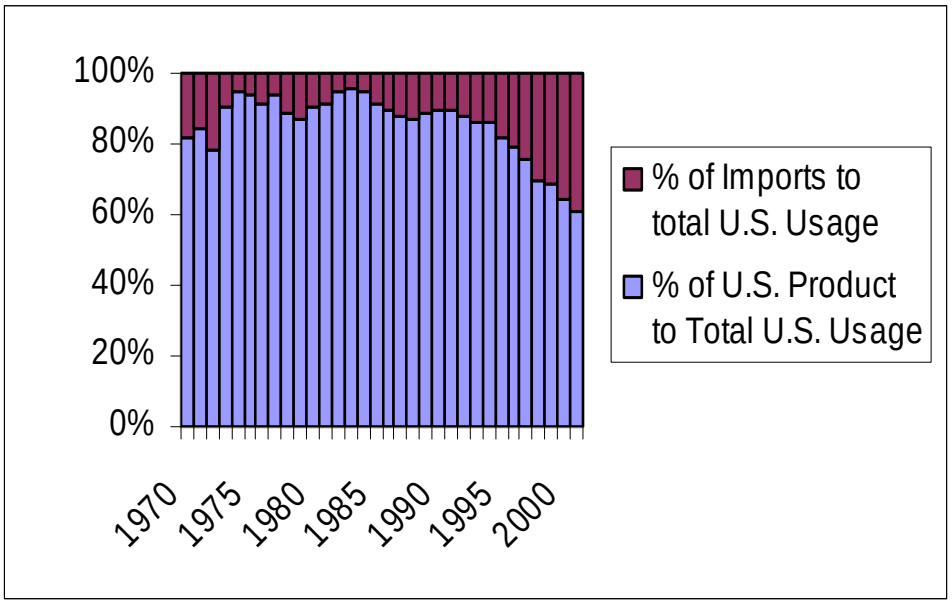


Figure 6: U.S.A. Market Share
Source: USDA/Economic Research Service

The strong American dollar has also made the U.S. market attractive to imports. In 1991, the exchange rate ranged between 77 and 79 U.S. cents per Australian dollar but by 2001 the exchange rate ranged from 49 to 54 U.S. cents per Australian dollar. This trend is also reflected in the valuation of the New Zealand dollar. For example, assuming the carcass market is $2.00 U.S. a pound and the exchange rate is 75 cents, the equaling carcass value would be $2.66 in the corresponding currency. If the same $2.00 U.S. a pound market is converted using a 55 cent exchange rate, the equaling carcass value would increase the corresponding currency value by 97 cents. Therefore, given a 50 pound carcass, this 97 cents would equal a total increase of $48.50 in that particular currency.

In summary, while the number of US sheep has continued to decline along with the per capita consumption of lamb meat, an increased demand for lamb due to the US population growth rate, has been filled by imports.

Oregon Sheep Industry

With 235,000 head of sheep and lambs, Oregon presently ranks 10th as a sheep producing state. (Figure 7).

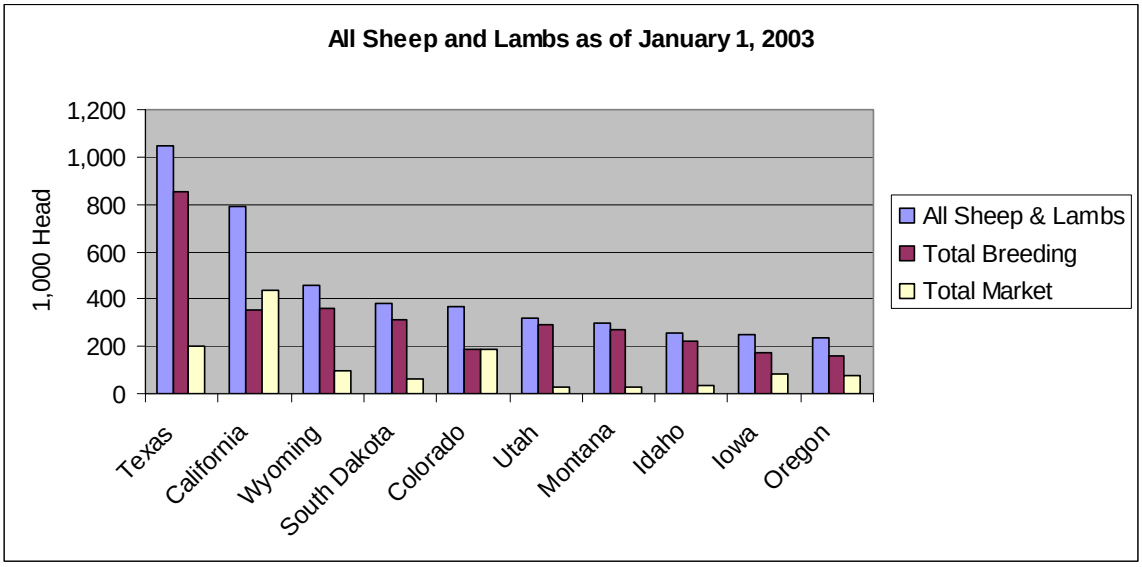


Figure 7: Top 10 Sheep Producing States

Source: NASS Sheep & Goat Report January 31, 2003

Oregon's sheep production was valued at $14,550,000 in 2002. That ranks sheep and lambs number 27 in Oregon's list of over 220 agricultural commodities. (Oregon Department of Agriculture). Yet, this does not take into consideration the benefit that sheep production provides to other Oregon commodities. For example, Oregon's grass seed industry, the largest in the world, enjoys a symbiotic relationship with the sheep industry through grazing. Grass seed producers have reported higher yields due to the grazing of sheep on grass fields during the winter months. Growers have noted increased yields of up to 700 pounds per acre. (Schmitz). Oregon State University data of volunteer no-till stands shows production increases that range of 300 to 500 pounds per acre.

(Oregon State University). These gains in production, attributed to grazing, support the importance of sustaining the Oregon sheep industry as a tool for the grass seed industry.

Oregon's sheep industry is based on a large number of producers with a relatively small average flock size. In 2002 there were 3,070 farms raising sheep. (Oregon Department of Agriculture). On an average basis, each farm would produce 75 lambs. This creates a logistical problem for transportation to out of state processing facilities, since a truckload is considered 400 lambs. To control transport costs it is necessary for several farms to cooperate to form a truckload or to work through a broker. Thus, brokerage adds another cost. This mingling of lambs of various owners also precludes feedback of carcass information to the producer since the individual identity of the lambs is lost in this process. This data would provide producers an additional tool to improve production efficiencies.

Sheep production occurs throughout Oregon with the highest population levels being on the west side in the Willamette Valley and the South Coast. The only area experiencing an increase in production, since 1997 is the northwest district (Table 1).

Surveys were sent to 3,384 Oregon sheep producers in an effort to establish actual sheep production populations by region, the month of marketing, cost of production and the potential for year round production. Only 27 producers, representing 4,744 head of the total 150,000 Oregon lambs, responded to the survey. This did not provide an adequate number to evaluate for the purposes of this study.

OREGON SHEEP AND LAMB POPULATION BY COUNTY

COUNTY	1997	1998	1999	2000	2001	2002
Benton	3,900	3,400	3,500	4,000	5,000	6,000
Clackamas	8,400	7,400	6,000	5,600	6,000	8,500
Clatsop	870	690	500	500 *		500
Columbia	1,200	990	600	600 *		900
Lane	22,100	18,800	15,000	14,500	16,000	33,500
Lincoln	2,600	1,900	2,000	2,000	2,000	2,500
Linn	66,140	64,140	44,000	42,000	53,300	67,500
Marion	11,200	9,000	8,500	8,500	9,000	12,000
Multnomah	560	500	500	700	900	1,000
Polk	11,300	10,100	8,000	8,000	10,000	10,000
Washington	1,600	1,300	100	100 *		2,500
Yamhill	5,990	5,200	1,400	1,500	2,000	7,500
Other	80	60	5,000	6,000	7,000	
NW Dist.	135,940	123,480	95,100	94,000	111,200	152,400
Gilliam	120	110	100	100 *	*	
Hood River	120	110	100	100 *	*	
Morrow	14,100	12,600	10,000	9,400	12,000	14,000
Sherman	120	110	100	100 *	*	
Wasco	470	420	400	400	800	700
NC Dist.	14,930	13,350	10,700	10,100	12,800	14,700
Baker	6,200	5,500	3,000	3,000	3,000	3,500
Umatilla	15,300	13,700	11,900	12,600	13,800	3,500
Union	2,500	2,200	1,400	1,400	1,500	1,500
Wallowa	4,500	4,000	2,000	2,000	1,700	1,500
NE Dist.	28,500	25,400	18,300	19,000	20,000	10,000
Coos	14,500	12,600	12,000	12,000	17,000	16,500
Curry	25,300	21,700	18,000	16,000	20,000	21,000
Douglas	51,000	45,100	30,000	28,500	29,000	30,000
Jackson	4,600	4,000	2,600	2,500	3,000	3,500
Josephine	1,050	850	600	600	1,000	1,000
SW Dist.	96,450	84,250	63,200	59,600	70,000	72,000
Crook	1,800	1,600	900	800	1,000	1,200
Deschutes	3,000	2,700	2,000	1,800	1,800	2,200
Grant	690	620	400	400	400	800
Harney	10,200	9,100	5,600	5,700	6,500	7,500
Jefferson	7,700	6,900	5,000	4,700	5,000	6,000
Klamath	7,100	6,300	4,300	4,300	3,500	4,000
Lake	1,100	940	900	700	1,000	1,200
Malheur	11,300	10,100	8,200	8,200	10,000	11,500
Wheeler	290	260	400	700	800	1,000
SE Dist.	43,180	38,520	27,700	27,300	30,000	35,400
OREGON	**319,000**	**285,000**	**215,000**	**210,000**	**244,000**	**284,500**

Table 1: Oregon Sheep and Lamb Population by County

Source: National Agricultural Statistics Service

Availability of slaughter lambs in Oregon is highest during May and June. The late summer months of August to October see the lowest availability of slaughter lambs. Willamette Valley ryegrass lambs come off the fields in mid-march to allow the ryegrass crop time to mature but many are ready for slaughter during January and February. Some shortages occur in December and January depending on feed conditions. One Oregon sheep grower noted that "If there is a market people would work to fill the market" (meaning that if the price was sufficient at times during the year when lambs are not traditionally marketed producers would adjust management to fill this market need, if a profit incentive existed). (Personal Interview). An equitable price year round would also encourage producers to market when the product is "ripe", rather than adding extra pounds, which lead to over fat lambs and a potentially inferior product.

Oregon Lacks Lamb Slaughter Capacity

In 2001, 70% of the United States federally inspected lamb kill took place in only 5 plants **(**Figure 8). (USDA NASS). There are only three major dedicated lamb slaughter facilities in the ten Western states of the U.S. The three closest to Oregon are one in California and two in Colorado. Transport to these facilities is a cost to the industry and must be figured into either the buying or selling price. With a 400 head truck load, the freight on a 500 and 1,000 mile trip would equal $2.93 and $5.87 per head, respectively. ($2.35 a loaded mile) There is a lack of current information on other loses that are attributed to transport thus death loss, stress, shrink, bruising and other factors would need to be studied further to identify the exact impact this has on the sheep industry of Oregon.

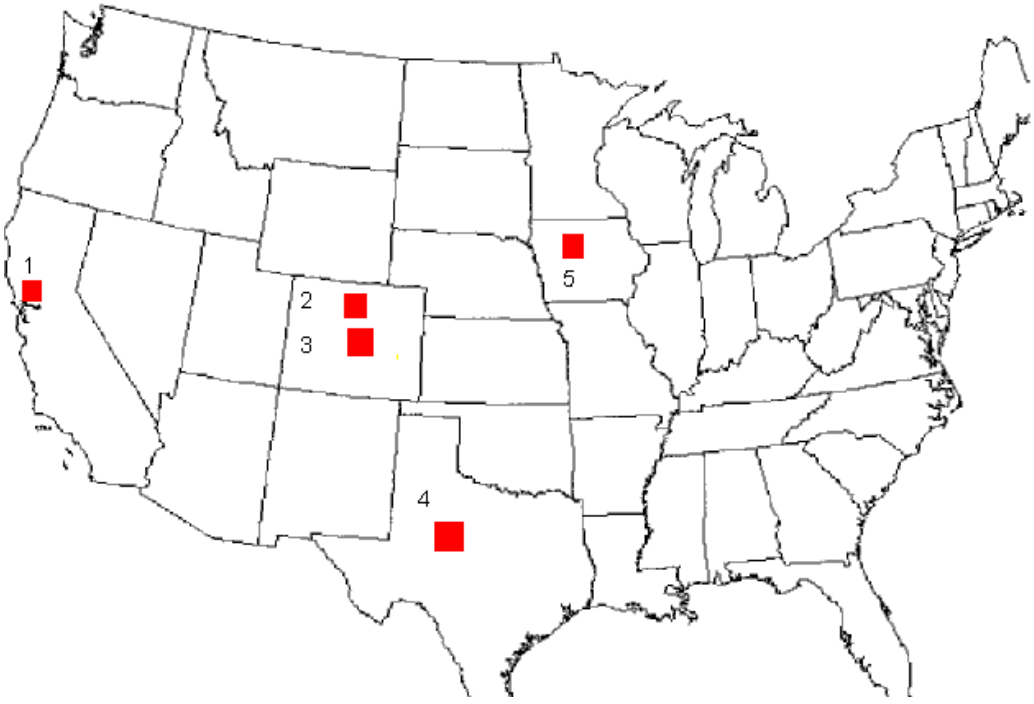


Figure 8: Major Lamb Processing Sites

In an effort to stabilize their market and obtain market share, some independent producers and processors in Oregon have attempted to value-add their lamb products by direct marketing. This has, in turn, increased the incidence of sheep and lambs slaughtered in Oregon facilities.

The following table (Table 2) tracks the number of sheep and lambs slaughtered in Oregon USDA inspected facilities from 1994 to 2002. The remainder of Oregon sheep and lambs are shipped out of state for processing or non-USDA slaughter takes place. This increase in local slaughter has substantiated the importance of the availability of in-state processing.

Year	Sheep & Lambs	Number of Federal Inspected Plants
1994	4,600	16
1995	4,400	14
1996	3,600	13
1997	3,300	13
1998	4,100	13
1999	5,500	11
2000	6,300	11
2001	8,300	11
2002	9,900	10

Table 2: Oregon Sheep and Lamb Slaughter
Source: USDA/NASS Sheep and Lamb Slaughter Summary

Presently, only 9,900 of the 235,000 sheep and lambs produced in Oregon are processed in a USDA inspected facility within the state. This represents 9,400 lambs or 6.2% of the lamb population and 500 sheep. This number correlates to our survey numbers of plus or minus 200 lambs per week based on a 50-week year. The majority of Oregon sheep and lambs are shipped to California or Colorado, 500 to 1000 miles from the production area.

Similar processing costs were incurred by each direct marketer surveyed with a low of $35 per head for slaughter and minimal processing to $56/ head for slaughter and fabrication, with $46/head being the average cost for processing.

Each of the respondents to the direct marketer survey listed similar concerns in regard to the USDA processing available to them in Oregon. 100% of those replying noted that their current facility was not meeting the needs of their operation. Reasons listed were:

- limited capacity of the facility
- cross contamination issues
- inadequate packaging equipment
- lack of skilled labor
- the proximity of the facility to the area of production
- concerns of waste disposal

Respondents were asked to estimate their potential production increase if the limiting factors related to processing were addressed. They indicated an overall potential increase of 15% per week bringing the annual total to a potential of 11,250 head.

Private labeled lamb product is becoming a more significant market factor, frequently seen in the farmer's market environment but also growing in popularity in the retail and HRI sectors. Survey results show that there are approximately 200 lambs a week that are moving through processing channels in Oregon bound for retail, HRI (hotel, restaurant, institutional) and farmers market trade. This number increases 5%-10% during June through October. These numbers are based on a response from 66% of the direct marketers polled.

Oregon's multi-species plants, processing product for the direct marketer, are designed to accommodate beef, pork, and lamb. Each species requires specialized equipment to efficiently process. Because lamb is generally a smaller percentage of the business in multi-species facilities, adaptive equipment and procedures are used rather than utilizing equipment designed specifically for lambs. This leads to inefficient systems which, in turn, increases processing cost, lowers the capacity of the kill, and increases the risk for cross contamination, which has a direct relationship to the shelf-life of the final product. Systems that are designed for single specie processing have a much better control on these issues but operate at a higher risk because they rely on a continual supply of one species.

The cost of improved packaging equipment has to be justified by adequate product through-put. A small, multi- specie facility may have a variety of packaging requirements. The percentage of product that requires specialized packaging equipment may be too low to justify the investment. Continual operation of this equipment is a necessity to off-set cost.

The problems of skilled labor are not limited to the field of processing, but the requirements of multi-species plants are magnified because the employee needs to be skilled in a variety of procedures including a thorough knowledge of standard operating procedures, an awareness of HACCP, and expertise in all of the steps involved in slaughter and processing of each species. In large single specie facilities employees have the opportunity to specialize in single task jobs. In multi-specie facilities this opportunity does not exist and the absence of skilled labor may result in compromised product due to the overall quality of workmanship.

The availability of skilled labor and a reliable work force was a major concern of all of the processors surveyed. The processors interviewed are willing to provide training but are hampered by a high turnover rate. Turnover rate is due, in part, to the seasonality of kill, lower pay scale and the degree of difficulty and the nature of the work.

Proximity to a facility is an important issue to the direct marketer because of the overhead cost in relationship to transportation and distribution. A specialized single specie facility in a centralized location may afford the opportunity for the direct marketers to consolidate transportation and distribution efforts to minimize costs in these areas, although coordinating this would be dependent on the plant location and the weekly numbers handled by the marketer. A central location will offer the advantages of efficiency, hygiene, and collective marketing of by-products, but will these advantages outweigh the current convenience of plant proximity to the present direct marketer? Attracting the business of the direct marketers might prove difficult.

Interviews with processors in Oregon revealed that one of their primary obstacles to expansion and profitability is the disposal of offal. The disposal of offal becomes a cost factor for these facilities rather than an income source. The value of offal must become a revenue stream in order to maximize profitability of a processing facility by controlling processing costs. The inability to do so places these processors at a disadvantage in the marketplace. The larger more vertically integrated plants that have enough through-put to justify the capital needed to obtain credits on these products and have enough quantity to attract buyers are able to turn this disposal cost into profit centers. These additional profit centers add stability to their business, by providing diversified products and offsetting the cost of production.

Although rendering was not initially included as a segment to survey in the original proposal, information collected during the course of this study has indicated that this particular issue is of significant importance in assessing the feasibility of establishing an economically viable slaughter industry in Oregon

Four rendering companies, located in Oregon and Washington, were contacted and interviewed in this process to determine if rendering of lamb by-product could be facilitated. None of them, presently, accept lamb or sheep products, nor do they intend to accept them in the future. The reason for this avoidance of lamb by-product is because the United States is not considered scrapie free. Export buyers of United States meat meal have placed restrictions on product and require that there is no material from lamb, mutton, or goat present in the product they accept. Export buyers perform species test on the product and if lamb, mutton or goat material is found the product will be rejected, endangering any future business relationship.

Through this interview process it was found that there are existing rendering companies that have developed specialized markets for ovine material. Although this has eliminated them from markets that restrict the presence of ovine material, it allows them to take advantage of the available markets where lamb by-product is in demand. Lamb has a good image with pet food companies, and is showing continuing growth. Developing a means to enter this market would be advantageous to a lamb processing facility.

The closest facility, to Oregon, that accepts lamb offal product is located in Sacramento, CA. There is no established transport for product from Oregon to this facility. In order to utilize this option, a processor must provide transport for material. Small processors find this method is not cost effective since they do not have adequate product quantity to justify shipment in a timely manner.

The processors that were interviewed in this study, who handled ovine material, are disposing of their potential rendering material including skins, casing, and other drop credits, in near-by landfills. One of the processors does utilize the Sacramento facility on a limited basis, but finds that because of lack of volume this approach does not provide an adequate return on expenses. Both these methods of disposal are placing an added cost on the small processors rather than creating what should be a revenue stream. This cost could be eliminated if a viable means of rendering existed in close proximity to the facility. The lack of available rendering also deters these plants from increasing their slaughter capacity, since to do so would mean increased disposal fees. The future of using landfills for this purpose is also questionable, due to growing environmental concerns and

regulations. Other alternatives such as composting are being trialed and more information needs to be gathered on the cost benefits of this process before it can be considered as a viable alternative.

A viable market for lamb meal requires that the supply be from a consistent provider that is in close proximity to the rendering facility. Viscera material spoils quickly and results in a less than desirable product if not rendered promptly after slaughter. Some LMG (lamb, mutton, goat) by-products could be collected, refrigerated and transported to a renderer. This would require additional storage on the part of the processor, adding increased cost. The costs and returns would need to be analyzed to determine viability of this approach.

Rendering appears to be the most difficult problem to overcome in determining the feasibility of siting a processing facility in Oregon. Although the marketing of skins, casing and offals can be achieved at any level, the small amounts offered by small facilities are a deterrent to most buyers because of increased handling cost.

Establishing a rendering plant as a component of a processing facility was explored. Creating a business to support another business is of high risk and should be looked at carefully to avoid failure in both businesses. A rendering equipment manufacturer was contacted to determine the capacity needed to operate a small-batch cooker. A unit 5’ x 12’ was suggested which would handle 8,000 pounds per cook. A single cook would take approximately 2 hours to complete or 4 cooks per shift requiring 32,000 pounds of raw product per day. If the amount of raw material equaled 50 pounds per head a slaughter capacity of 640 head per day would need to be reached to maintain the rendering facility. Outside material could also be sourced, decreasing the need from the 640 head. It is questionable that there would be adequate material available from other sources to supplement this supply.

There seems to be wide availability of units this size, both new and used. Average cost new would be $250,000 to $300,000. This figure includes the equipment only. Land, building, utilities, boiler, and permits would also need to be acquired, adding additional costs. It was determined that the expense involved in pursuing such an operation would be greater than the ability to achieve revenue.

Most successful slaughter plants acknowledge that achieving maximum by-product returns is the difference between profit and loss. Unless there is adequate knowledge to operate such a facility and available through-put for rendering of lamb material, small processors will be forced to use other means of disposal than rendering.

The Market for Lamb

"Now is an opportune time for American lamb producers to increase lamb's popularity among U.S. consumers" writes Dr. Julie Stepanek Shiflett. (Shiflett, June 2003). She bases this conclusion on the fact that drought stricken Australia is in short supply and that if consumers become accustomed to domestic lamb during this downturn of the imported product that they are "likely to stay with American lamb…particularly if they are pleased with its quality and price".

All natural, hormone free, antibiotic free, free range, sustainable management, animal welfare and organic are all areas to be addressed when discussing lamb production, processing, and marketing. A growing segment of the population is interested in the health and food safety aspects of food products. The area of animal welfare attracts a smaller population segment but is still an issue to be cognizant of and one that a small, but vocal group continues to bring to the attention of the American public. (Market Solutions).

Consumer

The Food Marketing Institute noted eight factors that consumers take into consideration when making food selection decisions. They are listed in order of their importance: 1) taste, 2) nutrition; 3) product safety, 4) price, 5) storability, 6) ease of preparation, 7) food preparation time, and 8) recyclable packaging (Food Marketing Institute, 1999).

Defining the lamb market at the consumer level requires an identification of a "typical" consumer as well as the factors that influence the consumers purchasing behavior. Economic, demographic and population variables play an important role in defining the consumer and, therefore, the market. Product characteristics are the primary drivers of whether a consumer purchases a product.

The 1987-88 Nationwide Food Consumption Survey and the July 2002 study "Enhancing the Retail Market for American Lamb" both found nine household traits that increased the probability of lamb, mutton, and goat (LMG) consumption. (Genho, et al). The traits found in these 2 studies that have a positive influence on lamb consumption, in order of influence on consumption, are:

1. an older mean household age
2. household had a female shopper
3. household resided in Mountain and Pacific region of the U.S.
4. household resided in New England and the Mid-Atlantic region of the U.S.
5. month was between January and June
6. a larger household income
7. household resided in East North Central and South Atlantic region of the U.S.
8. female shopper was college educated - additionally, these studies found that lamb consumption increased when the female shopper was unemployed
9. the household head race was non-white

Several other studies have added detail to the "typical" lamb consumer. Studies have shown that holidays and special occasions, especially Easter and Passover holidays, are the primary drivers of lamb consumption in many ethnic households. The West (San Francisco and Seattle) has the highest proportion of lamb eaters at 31% of those surveyed. (Market Solutions Survey). Also, expenditures on lamb appear to be greater in urban households as opposed to rural (Williams and Davis). The American Strategies Market Research Study of 1997, which was completed in Oregon, identified that the majority of lamb eaters are 61 years and older. Two reports - Purcell 1989 and T. Schroeder, R. Jerrick, R. Jones, C. Spaeth 2001 - found that lamb consumption declined as household income increased. The negative correlation between higher income and lamb consumption agrees with the American Strategies 1997 study findings that are shown in the table (Table 3) below.

Very Likely to Purchase	Mean Income
Pork	$40,540
Poultry	$39,860
Beef	$39,790
Meat Products	$39,450
Lamb	$36,340

Table 3: Income to Meat Consumption Correlation
Source: American Strategies Survey

The negative correlation between income and lamb consumption has strengthened because more women have entered the work force over the last decade and this has led to increasing household incomes. Marketing research suggests that women working outside the home have less time and interest in cooking and, therefore, rely on convenience food or quick preparation meals. However, research also indicates that older and higher income households rate much higher in lamb consumption. Disregarding age and income, the Texas A&M Research Center (TAMRC) identified in their December 1991 lamb study that a large segment of consumers did not buy lamb because they lacked preparation knowledge. Therefore, there are 4 main target audiences for increased lamb consumption: ethnic groups (Hispanic, Middle Eastern, etc) that eat lamb on a seasonal basis; younger households with an employed shopper who is interested in convenience/prepared meals; older, higher income households; urban consumers with little or no lamb preparation experience. Knowing these target audiences, it is important to identify the specific product factors that drive consumer lamb purchase decisions.

A January 2002 Food Marketing nationwide survey of shopping preferences showed that 85% of shoppers eat meals cooked at home 3 or more times per week. While convenience is growing in importance, only 44% of respondents to the 1997 American Strategies survey indicated that would be likely to purchase a pre-cooked or ready to eat product. Therefore, other components appear to be driving consumer food purchases. First, the consumer, in general, "is looking for a product consistent with norms as to what should be consumed in terms of not just caloric count but also fat content, cholesterol, etc." (Purcell). Second, consumers desire to purchase the highest quality food product at the lowest price. Third, the American Strategies survey also noted that consumers are interested in product origin, as 92% of respondents indicated that they would most likely purchase an Oregon branded product. Consumer inclination toward branded products was also found in the Food Marketing 2002 survey with 91% of shoppers preferring a private label or store brand. A recent Oregon Agri-business Council survey adds support to the Oregon consumer's desire for Oregon branded product citing that 78% of those surveyed had sought out an Oregon grown product. That behavior increased with income level, from 56% of the under $25,000 to 93% at the highest income levels. (Agri Business Council).

In addition to the above drivers of general food purchases, there are some more additional factors that affect meat purchases and could directly impact lamb purchases. First, the probability of purchase increases when the meat products are readily available at the store and the consumer can choose among a large selection of cuts. The desirability of a

specific cut can be attributed to two things: ease of preparation/cooking and amount of exterior fat. Second, the nutritional value and portion size, of the meat product being purchased, are becoming more important to consumers.

Price of Lamb

The current global decline in lamb supply has created a strong global market for lamb. Slaughter lamb prices in the U.S. have reached record highs and the supply outlook indicates they may remain at this level. USDA Economic Research Services expects slaughter lamb prices in 2003 to average $83-$85/cwt, compared with $72/cwt. in 2002.

This trend coupled with the federal payment program for ewe lamb retention should have a positive impact and slow the decline in flock numbers. This increase in U.S sheep numbers will not result in an oversupply in the market place as long as domestic lamb can maintain their current market share in the face of increased promotional efforts from importers.

The live to retail price spread declined from January 2002 to January 2003. January 2002 was an all time high price spread at $3.43/pound and has since fallen to $2.82/pound in January 2003. This change may be attributed to cost of production but may be due to the lack of information or uncertainty of where the market is headed. (Shiflett, May 2003).

The January 2003 average price for domestic product in the U.S. was $4.39 compared to $3.67/pound in January 2002. The imported priced was $4.50/pound compared to $4.21/pound in January 2002. The increase in imported price may be attributed to the reduced availability of imported lamb. (Shiflett, Sheep Industry News, May 2003). These figures indicate that domestic product can be price competitive in the meat case with imported product. Although a premium product will be able to command a slight increase in price, current prices may have reached their ceiling as far as consumers are concerned.

Exports

Since the number of exporters surveyed was small, and there were none located in the northwest, the exporter survey was sent to firms across the United States. The return rate was 8.3% on surveys sent. 100% of the respondents handle lamb, mutton, and goat (LMG) products on a year around basis. This would lead us to assume that LMG product is an important part of their business whereas the non-respondents may have limited or no trade in LMG products or these products are a lower priority in their operations.

With export product it is important, from an efficiency standpoint, that product quantity be equal to container size amounts. This usually is about 40,000 to 42,000 pounds of product. This presents a problem for small processors to have adequate product to fill an order of this size on a regular basis.

Continual consistent supply and pricing were indicated by respondents to be a major barrier for them to increase their sales. Because of these issues, building a reputable and reliable sales program was noted as a problem for all of the respondents. Competition

from other countries continues to be a significant issue for U.S. exporters. Exchange rates, climatic conditions, and the political influences are continually impacting the market environment and are conditions over which the exporter has virtually no control.

Respondents reported that price is an issue in efforts to increase LMG sales. LMG product from the United States tends to be destined for markets looking for low value cuts or product. Mexico is a primary destination. Export of either high or low value cuts or product come under extreme pressure due to the valuation of the U.S. dollar and the limited volume of supply of product from the U.S. compared to other exporting countries. It is interesting to note that other countries view the United States as a market for mutton and goat, as well as the higher value fresh lamb product. The 2002 export figures from Australia show that there was a total 54 million pounds of mutton and goat shipped to the United States compared to 60 millions pounds of lamb. By far, the majority of the mutton and goat was shipped to the East coast ports of the United States, while the majority of lamb was shipped to the west coast (Australia Department of Agriculture, Fish and Forestry). With inland transportation in mind it is difficult to determine final destination of product. This would lead to the conclusion, through population figures, that the ethnic populations of the East Coast may be the target market for the mutton and goat products.

Opportunities do exist for export of LMG product to markets outside the United States. Survey respondents reported a combined total of 292,000 pounds of lamb, 136,000 pounds of mutton and 166,000 pounds of goat on a monthly basis. This is a total of 7.1 million pounds of LMG annually. (Figure 9).

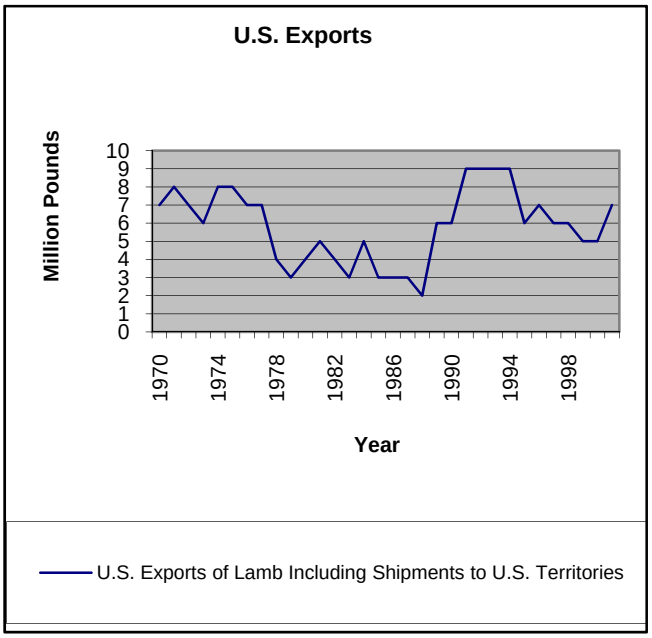


Figure 9: US Exports of Lamb
Source: Australia Department of Agriculture, Fish and Forestry

Based on the response from the exporters and their indicated need for a year round supply of LMG product, the opportunity for export markets cannot be ignored by providers of lamb. Yet the market should be thoroughly evaluated to determine the opportunity for profitability since product price is a predominate driver of the market.

Oregon's Market for Lamb

The state of Oregon, which has a population of over 3.4 million people, is studied to identify potential target markets for increased lamb consumption within the state.

Currently, the nation's carcass equivalent per capita lamb consumption is 1.3 pounds per year. Given an average carcass weight of 68 pounds, Oregon's carcass demand totals 65,000 carcasses. Washington and Idaho production would add another 140,000 head for a total of 205,000 carcasses, using the same method of calculation. The current Oregon lamb slaughter of 9,400 satisfies 14% of Oregon's consumption; the remainder of the states' consumption is fulfilled by international imports and domestic product processed outside the state.

Consumer and retail surveys indicate that there is a demand for locally grown and processed product and that the demand is not fully being met.

Consumer

The population of Oregon is growing faster than the national average and has accelerated its rate of increase during the past decade. Much of this growth has been from in-migration of people from other states and from international immigrants. Forecasts indicate that Oregon's future population growth will continue to outpace the national average. Oregon's location, climate, economic ties to the Pacific Rim, general lifestyle and amenities attract a wide range of individuals from retirees to younger adults. (Edmonston).

Top 10 Counties by total population		Population	Estimated carcass use
1)	Multnomah	666,810	12,748
2)	Washington	461,119	8,816
3)	Clackamas	346,558	6,625
4)	Lane	324,316	6,200
5)	Marion	288,269	5,511
6)	Jackson	184,963	3,536
7)	Deschutes	121,949	2,331
8)	Linn	103,974	1,988
9)	Douglas	100,866	1,928
10)	Yamhill	86,642	1,656
	Total	**2,685,466**	**51,340**

Table 4: Total Population
Source: Oregon Department of Administrative Services, Office of Economic Analysis

Out of Oregon's 36 counties, 42% of the state's total population is centered in the tri-county area of Multnomah, Washington and Clackamas counties, with another large segment of the population living in Lane and Deschutes/Crook/Jefferson county areas.

Data gathered in this study identifies several lamb-eating populations. Older and more affluent shoppers tend to purchase lamb on a more regular basis, as do ethnic populations. (Market Solutions). Another population segment is identified as the "emerging

epicurean", the consumer 35-45 years of age with an interest in "gourmet" food. (Market Solutions).

Oregon has a growing aging population with 13% over the age of 65.

	Top 10 Counties by population 65 years and older	Population	Estimated carcass use
1)	Multnomah	73,607	1,407
2)	Lane	42,954	821
3)	Washington	39,351	752
4)	Clackamas	37,428	716
5)	Marion	35,206	673
6)	Jackson	28,991	554
7)	Douglas	17,888	342
8)	Josephine	15,237	291
9)	Deschutes	15,089	288
10)	Linn	14,954	286
	Total	**320,705**	**6,131**

Table 5: Population over 65 years of age
Source: Oregon Department of Administrative Services, Office of Economic Analysis

The "emerging epicurean" market would be reflected in the following table.

	Top 10 Counties with people 25 years or older with a Bachelor's degree or higher	Population	Estimated carcass use
1)	Multnomah	136,828	2,616
2)	Washington	98,549	1,884
3)	Clackamas	63,331	1,211
4)	Lane	53,723	1,027
5)	Marion	35,169	672
6)	Jackson	26,992	516
7)	Benton	21,684	415
8)	Deschutes	19,470	372
9)	Yamhill	10,857	208
10)	Polk	9,974	191
	Total	**476,577**	**9,111**

Table 6: Population 25 years and Older with College Education
Source: Oregon Department of Administrative Services, Office of Economic Analysis

The Hispanic population will also provide an available market for lamb in Oregon. This has been noted as a growing Oregon population, making up 8% of the total population. This figure may be greater due to the migrant working population of Oregon, which are

not included in the population figures. This increase was seen in every county in Oregon with the Hispanic population being the most widespread minority group in the state. This population is also noted to be occasional or monthly purchasers of lamb in the study by Genho, et al.

Top 10 Counties by Hispanic or Latino Origin		Population	Estimated carcass use
1)	Washington	49,735	951
2)	Multnomah	49,607	948
3)	Marion	48,714	931
4)	Clackamas	16,744	320
5)	Lane	14,874	284
6)	Jackson	12,126	232
7)	Umatilla	11,366	217
8)	Yamhill	9,017	172
9)	Malheur	8,099	155
10)	Polk	5,480	105
	Total	**225,762**	**4,316**

Table 7: Hispanic Population
Source: Oregon Department of Administrative Services, Office of Economic Analysis

The Hispanic market is a fast growing market and some grocery store chains have taken the opportunity to target this market. At 13%, the Hispanic/Latino population is the largest minority group in the United States. They have a collective disposable income of $450 billion a year. Hispanic/Latino households spend one third more on groceries and visit a grocery store twice as often as non-Latinos. (Ratnesar).

The varying needs of these ethnic markets should be addressed in processing product to meet their specific requirements and meal preparation practices. Purchase preferences for Middle Eastern consumers, noted in "Enhancing the Retail Market for Lamb", include family tradition, price, holidays and preference for less fat in the product, while those of "other" race (including Italian, Greek, Hispanic, etc) indicated preference for less fat in the product, package size and coupon/special. Price is seen to be a significant factor to consider when dealing with the ethnic markets. (Genho, et al). The ethnic markets also provide an opportunity for sales of product, such as organ meats, that are traditionally not purchased by non-ethnic U.S. consumers. This provides an important market opportunity to maximize return on the entire lamb by moving these edible offal parts into the revenue side of the equation.

The ethnic market offers an additional market group beyond the Hispanic population. One Halal distributor interviewed indicated that there is a population of 80,000-100,000 Halal consumers in the Northwest. There is no data to definitively quantify these numbers and the volume of lamb consumed by this segment. Oregon population data notes that 4.2% of the Oregon population is a race other than Hispanic, Asian, American Indian, or Black or 142,800. Using the 1.3 pound per capita estimate and the estimates of 80,000 to 100,000 this results in 1,530 to 1,911 carcass equivalents. This figure may be low

considering the fact that Middle Eastern consumers were noted to be most likely to purchase lamb on a monthly or weekly basis. (Genho et al).

Surveys were sent to eight businesses that advertised as handling either Kosher or Halal meat. No responses were received from these businesses. Phone contacts were then initiated to gather information on these markets. Contacts were made with Halal distributors but adequate information regarding Kosher markets was unavailable.

It is apparent from the interviews and from local demographics that there is an existing and growing need by consumers that have a preference for product that meets their religious requirements. Those interviewed indicated that there is presently not an adequate supply of Halal and Kosher product processed in the northwest. Foreign and east coast product currently fill much of the market's needs. Local distributors of Halal product indicate a desire to source product locally.

Because of the limited availability of Halal processed lamb products, a portion of this customer base is lost to other alternative meats. If product meeting the Halal requirements was readily available an opportunity exists to capture this lost market. To gain this market share return on the increased processing costs needs to be justified but not exploited, since price is indicated by the interviewee as an important consideration in moving lamb product and is supported by Genho, et. al. and Nationwide Food Consumption Survey.

From the interviews there appeared to be confusion as to the actual identification of a certifying body that upholds the integrity of the religious rituals. Of the businesses contacted, the basis for certified product included self-certification, third party certification, or personal acquaintance with the person who performed the ritual act. Further investigation would be needed to establish a Halal ritual program that would be acceptable to the distributors that would service this market. The interviewees have indicated a strong interest in establishing a local supply for lamb processed in accord with their ritual needs.

Although there are specific areas that have large populations requiring an Halal or Kosher product, these population pockets are spread out over a wide geographic base. This poses a distribution challenge due to the low volume per delivery drop per customer and the number of potential drops. Relying on an established Halal distributor may be advisable.

Another distribution challenge revolves around product segregation. Product segregation of ritual meat and non-ritual meat was noted, by those surveyed, as a problem in slaughter, processing and in distribution. Product contact with other meats that are restricted in the proscribed diet must be avoided. Again relying on an established Halal product distributor would address this distribution concern.

Certain stores carrying Halal product, were indicated, to have a long established clientele and require product on a consistent basis. Most of these stores have a long-standing relationship with their supplier and do not want to change because of past experiences where suppliers promised to supply product and were unable to consistently deliver the specified product. Time would be needed to establish relationships to be able to enter into this market.

The cultural preference demand by the ethnic markets have some similarities, although the Hispanic market does not require a religious ritual both Halal and Hispanic markets prefer a light weight lamb (40 to 50 pounds). There are different requirements in fabrication in light of the cultural differences in meal preparation methods used.

The market represented by ethnic populations cannot be overlooked in assessing the market opportunities for LMG product.

Oregon's population trends reflect an expanding available market to tap for lamb meat sales, with existing and growing lamb-eating population segments. Survey results also point to an existing market for "premium" Oregon grown products. Because lamb has many of the characteristics of a premium product --price, acquired taste, availability, etc. --"there is an opportunity to position lamb as a premium meat product." (American Strategies). In addition, Oregon is reasonably situated to supply Washington and northern California, as well as any specialty Pacific Rim markets that might be developed.

An existing and potential market of lamb eaters is available in Oregon. Despite the current economic downturn, economic growth has continued at a rate of approximately 1% during the first half of 2003. Therefore, the population growth seen in recent years is projected to continue.

Retail

194 retail grocery outlets, in Oregon, Washington, and Idaho, were surveyed by onsite visit in this study to: determine the availability of lamb products; to perform price comparison; to determine customer preference for origin of lamb; to identify any problems at retail level; and to gather suggestions from retail meat managers on how to positively impact lamb meat sales.

91% of stores surveyed offer lamb products on a year around basis. From this frequency of lamb availability it is assumed that consumers reporting that they cannot find lamb in the grocery store might be overlooking the lamb in the case. Several times during our survey, when we were purposely looking for lamb, it required several passes along the meat counter to locate it. Because lamb generally makes up approximately 1% of the volume of the retail meat counter lamb offerings may consist of two to three cuts among 200 or 300 total cuts of meat in the case. Drawing attention to the lamb section in some way may enhance sales to impulse buyers and assure purchase by those intending to buy lamb.

The retail surveys revealed that a number of the retail chains maintain a policy that requires their stores to carry lamb in the meat case. (Retail interviews). This policy is based on the premise that retail customers that purchase lamb tend to buy other high-value items resulting in a higher profit per shopping cart. It was noted during several interviews that the meat department is willing to incur a loss on the lamb product in order to avoid the risk of losing customers to their competitors that do carry lamb. Since lamb is a small volume item, in the retail segment, it is important to address the retailer's need of a low maintenance program for buying lamb and to enhance their ability to achieve profitability on lamb sales. A strategy to achieve this would be to provide consistent

pricing and a steady supply of a consistent premium product, based on the consumer's desire to purchase a domestic product as indicated by 96.8% of meat managers interviewed.

Differentiation of product becomes increasingly important as the level of competition increases and as consolidation takes place in the retail industry. In recent years retail chains, that were considered local in the northwest, have merged with other national chains. This has decreased the number of players in the market and has created mega-chains that require large quantities of product to fill their needs. Fewer retail buyers result in fewer options for the outlet of product. This intensifies the need for product differentiation to make a product more attractive to buyers. An Oregon branded product would be well placed to fill the need of product differentiation, but may have difficulty in filling the needs of a large market base, unless a facility were to have the capacity to process large numbers and have access to the number and quality of lambs needed to service a large market base.

It was noticed that every store has its own regular clientele within the specific area. Two stores in an upscale market neighborhood might not necessarily share the same trends in lamb sales, depending upon their specific customer makeup. This was especially noticed with two stores in Yakima, Washington. In one store, the meat manager reported his lamb demand was strong, lamb moved well and had no problems. In the other store, which was in close proximity, the meat manager reported that he had no demand for lamb.

Several retailers mentioned that there is significant competition from the home kill market. This trend occurred in areas where price was a major influence in retail sales and where there was a readily available supply of local live lambs with the opportunity for processing for home consumption.

39% of stores identified shelf-life of product as an issue. They find that some product does not last long enough for them to have the opportunity to move it off the shelf before either spoilage occurs or pull-date requires removal. In some instances, it appears this can be traced to a slow rotation through the distribution center with product arriving at the store close to pull-date with spoilage occurring in less than the expected 3-4 day period. Keeping inventory properly rotated at the distribution level may lessen the incidence of this occurrence. 3 to 5 days was generally accepted as the common shelf-life for store cut product. Most stores would be happy with 5 days but find 3 days to be below their standard of expectation.

37 stores carrying domestic lamb products were asked “Is shelf life an issue with your current supply?” 47% replied it was. 21 stores carrying imported product were asked the same question with only 19% reporting problems with shelf life.

Flexibility in ordering specific cuts was also noted as a problem. There are two different segments to this issue: 1) the number of cuts per box or case and 2) the selection of cuts per box or case. The first problem occurs when a retailer orders a product such as square cut shoulders and receives eight shoulders per box. By the time he sells five of those shoulders, he has to move the other three at a reduced price because they are nearing their pull dates. If the box contained four or six cuts a reduction in price would not be likely to be required. This brings up two issues: 1) What would be the additional cost for the

processor to package less cuts per box and 2) If lamb sales have a high relationship to price and the last three shoulders were not discounted, would lamb sales decrease because no price reduction or "onsale" items were available, or would they increase because of an increased availability of a fresher product?

The solution to the problem of cut selection per box is difficult. If every store wanted a different cut selection, correct inventory and distribution would be difficult to achieve because of the small amount each store receives. Processors have a need to sell every cut of the carcass at the same rate in time in order to avoid stockpiling certain cuts that will have to be discounted later to ensure movement. Creative marketing solutions such as promotion of underutilized cuts may be a step in addressing this issue. Another approach may be new product development, creating case ready or convenience products that attract the consumer.

There is a concern among meat managers over the increasing presence of case ready product. This would allow retailers to replace skilled butchers with less specialized lower cost employees who are able to maintain the supply of product in the meat case but provide no further processing service. Meat managers feel that customer service is compromised by this trend. Several chain stores and independent grocers are offering a service meat case to differentiate themselves from the case ready type stores.

Attitudes towards lamb by the meat managers were noted as a possible influence on lamb sales in particular retail outlets. Although this was not quantified in this study it became evident in the survey process and would warrant further investigation. A more "hands on" approach by distributors or the industry in retail education and assistance may make an impact in this area. Reponses from meat managers included.

- Make it taste better
- I don’t like to cut lamb because it has a different feel than beef or pork
- Nobody buys lamb anymore
- I lose too much money carrying lamb.

An attitude adjustment technique was employed by one chain to provide incentive to increase lambs sales through a sales competition with a financial reward to the winner. This was measured by percentage of increase above normal monthly sales. The participating store surveyed indicated that this did have a positive impact on lamb sales at the time of the competition.

HRI

Competition in all areas of the food industry is increasing the movement to differentiate product in the marketplace through branded, premium products that appeal to the growing demand by consumers to know the origin and management involved in production. Oregon is home to many HRI outlets that emphasize northwest cuisine. "Cooking from the source" is an expanding northwest movement by Oregon chefs, inspired, in part, by James Beard, who noted that "No place on earth, with the exception of Paris, has done as much to influence my professional life," when he wrote about Oregon in his book Delights and Prejudices. (Schrieber). This market is an available target for premium Oregon lamb.

Of the stores questioned as to the impact of price fluctuation on sales, 37% responded that their sales tended to remain reasonably consistent despite price fluctuation. The majority of these stores were located in counties that were identified in the top 10 counties with population demographics of people who tended to eat more lamb. (Tables 4 -7). They were also stores located in counties of higher income levels. (Table 8). Growth in personal income should, theoretically, bolster this category. The other 63% that did see a correlation between sales and price were stores with a larger percentage of price conscious clientele. Higher price cuts, such as the rack or loin, seemed to move better in the stores where price was not a factor, and cuts such as shoulder, shank, and ribs moved better in the 63% of stores where price was a significant factor. Some stores have reported that customers will wait until the product gets near its pull date, anticipating a price mark down, before purchasing lamb products.

Top 10 Counties by average household income		
1)	Washington	$52,122
2)	Clackamas	$52,080
3)	Columbia	$45,797
4)	Yamhill	$44,111
5)	Polk	$42,311
6)	Benton	$41,897
7)	Deschutes	$41,847
8)	Multnomah	$41,278
9)	Marion	$40,314
10)	Hood River	$38,326

Table 8 : Average Household Income
Source: Oregon Department of Administrative Services, Office of Economic Analysis

The following table (Table 9) relates data from retail stores surveyed for price comparison between imported and domestic products at the retail level for the state of Oregon.

Cut	Average Domestic Price	Average Imported Price
Frenched Rack	$10.30/Lbs	$11.23/Lbs
Shoulder Blade Steak	$3.91/Lbs	$4.01/Lbs
Loin Chops	$9.61/Lbs	$9.43/Lbs
Bone In Leg Roast	$4.66/Lbs	$4.11/Lbs
Boneless Leg Roast	$6.69/Lbs	$5.04/Lbs
Foreshanks	$3.29/Lbs	$3.30/Lbs
Ground Lamb	$3.83/Lbs	$3.76/Lbs
Stew Meat	$4.19/Lbs	$4.59/Lbs
Seasoned Boneless Leg	$8.74/Lbs	$8.16/Lbs
Sirloin Steaks	$6.56/Lbs	$6.99/Lbs

Table 9: Retail Price Comparison of Domestic and Imported
Source: Retail Survey

Origin Preference

Although 96.8% of meat managers surveyed indicated that they would prefer to carry domestic over imported product this is not reflected in the actual statistics of stocked origin where 53% of stores surveyed offer domestic, 35% offer imported, 3% offer both, and 9% did not offer any lamb products. Of the retail meat managers surveyed price was most often noted as the reason to carry imported lamb. Remembering that price is a factor in 63% of the stores, it is interesting to note that there is little price differential in the meat case between domestic and imported product. There are other factors outside of price, which make it attractive to retailers to carry imported product. Relationships built between corporate offices and distributors who provide other meat product to their market have an affect, as does the high volume that large chains need to meet their market nationwide. Small volume processors are not in the position to service these markets on a consistent year around basis. Some retail meat managers believe that the three-week transit time for imported product also acts as an aging period producing a more tender product. Comparing the three-week average life of vacuum packed domestic product versus six weeks or more of the imported product, meat managers report an increased confidence in the imported product in the area of processing hygiene.

76% of the stores surveyed reported that origin was an issue with their customers. There were customer preferences noted both for domestic and for imported product.
Some stores finding their niche to compete with corporate chain stores are offering local product and feel that this provides them with an edge in freshness, health status, or knowing the product is being fed or raised in a particular way that their customers expect. These are factors that their customer base is interested in and is willing to pay for when a price differentiation occurs between imported, domestic and local product.

The importance of the history of a lamb product to the consumer also has a benefit to the supply chain. Traceability needs to be enhanced not only to ensure that the consumer is receiving a product that meets their expectations, but also to ensure that proper identification can be achieved in the case of product failure or recall. Quickly identifying the source and the path of the product will save valuable time in correcting a problem.

Oregon Direct Marketers

100% of the direct marketers responding participate in the fresh market, with 66% of those also dealing in frozen product. 66% also reported year around business while 33% reported seasonal sales.

66% of direct marketers, who responded, market their product outside of the state of Oregon either through retail outlets or via direct shipment to the purchaser.

Direct marketer respondents are primarily dealing with their own lamb production. If direct marketers were able to increase their market share alternative marketing opportunities may be available to other Oregon producers through these established channels.

Stores carrying the local product were well informed about the lamb product that they carry. They knew where it came from, how it was raised, and the name of the producer who raised the product. They indicated that this was an important factor to them and to their customers. This information provides an advantage to the retailer to address the concerns of consumers who are becoming increasingly aware of product origin and history. These details are a result of the direct contact between the retailer and the producer/direct marketer. This shortened communication chain affords the opportunity to address any problems that might arise with the product and to promptly correct them, which is an additional advantage to the retailer and a marketing advantage for the direct marketer.

Local product has an image of being fresh and wholesome. The retailers using local product find it has an advantage to distinguish them from the competition.

Oregon processors

125 surveys were sent to USDA inspected processing facilities in Oregon, Washington and Idaho. 12% of those surveyed responded representing all phases of the processing industry: slaughter, fabricating, further processing, wholesale, distributing and retail.

67% of the respondents handle lamb in one or more phases of their operation. For facilities handling lamb from slaughter through distribution it makes up from 30% - 50% of their current business. The numbers recorded by the respondents correspond to the USDA data indicating approximately 9,900 or 4.2% of the sheep and lambs produced in Oregon are processed by USDA facilities located in Oregon.

For those facilities that do not presently engage in any processing of lamb 50% of respondents indicated that they would be interested in handling lamb as a further processed product. Only two respondents indicated that they had no interest in adding lamb to their processing functions. Two facilities indicated that they had capacity to increase lamb processing at the slaughter stage. The individual facility increases estimated indicate a possible increase in slaughter and fabrication of up to 540 head/week. The obstacles existing that inhibit this growth were noted as: 1) Disposal of viscera; 2) Skilled labor pool; 3) Increased sales outlets; 4) Time to expand program; 5) Existence of adequate profit margin.

27% of respondents indicated that they had previously experienced problems in handling lamb in their operations. Disposal of offal was noted by 100% of those establishments as the primary problem in handling lamb. One processor felt that handling lamb was too labor intensive and another noted low volume of sales as a problem of handling lamb.

For the majority of respondents, lamb has a good image, although 27% felt that it did not. There were no specific reasons given for this response other than that consumers do not "readily think of lamb when planning meals" and that they had difficulty in accessing viable markets for the product.

Other general comments from respondents were: 1) Do have clients that want a local product and are willing to pay more for it. 2) We carry imported product because of price and consistency. 3) Lamb slaughter is increasing in our market.

Business Environment

An evaluation of the business environment is essential in determining the viability of an operation and the strategies needed to meet the existing trends and conditions. The following discussion highlights both macro and micro economic trends that have bearing on this particular proposal.

Imports
The domestic lamb market experiences strong impacts from imported product especially from New Zealand and Australia where agriculture and sheep production, in particular, are a significant part of the national economy. Because of this, the infrastructure for production and processing of lamb and wool products is highly developed and technologically advanced.

Price, packaging and consistency of product are the primary points of difference noted between imported and domestic lamb product. Data collected in the retail survey segment of this project indicates that there is no appreciable difference in the retail prices between domestic and imported lamb cut. (Table 9). This is further supported by USDA price reporting information noting that in January 2003 average domestic retail price was $4.21/pound in comparison to the imported average at $4.50/pound.

Pricing strategy, to obtain a share of the market now held by imported product, would include utilizing the U.S. consumer preference for domestic product and providing point of sale material and in-store demos by producers to support this preference. American Lamb promotional materials are available, at cost, through the American Lamb Board. Funding partnerships for specific promotional programs are also available through this source. Joint promotions with other products and with retail and HRI outlets is an additional option.

Further strategy would involve production efficiencies which would involve techniques to lower the current processing costs through technology and improved labor efficiencies to maintain a competitive pricing structure with imported product.

Designing the facility capacity to match local lamb production and available market will lower initial investment and control overhead costs to assist in controlling final product price.

Imported product has concentrated on processing hygiene to achieve maximum shelf-life of 9 to 12 weeks. The majority of domestic product is reported to have a shelf-life of 3 to 4 weeks. Local fresh product is noted, by retailers, to have a maximum of a 3-week shelf-life or less. This is an area where significant improvements can be made by improved processing and packaging techniques. Shelf-life related to processing and packaging should be addressed through improved technology in processing utilizing the procedures described in the Operation Plan segment of this document. These improvements will allow the retailer to merchandise the product more effectively, cutting down on non-salable or discounted product and increasing retail profits.
Consistency of product should be addressed through a quality assurance program in conjunction with producers to address the genetic production of quality carcass traits and to provide price incentives for lambs that meet the target specifications. A sire performance testing program has recently been introduced in Oregon to identify the carcass traits of sires. Rate of gain and loin eye scans are being measured to assist producers in selecting sires that will have a positive impact on their lamb meat production. A Quality Assurance program is also available to Oregon producers through Oregon State University. This program is aimed at improving production methods that will result in a safer and higher quality lamb meat product for the consumer by addressing the noted following problems: Bruising due to improper handling, dog bites, inoculation sites, and removal of wool in high risk areas prior to slaughter.

Exchange Rate

The valuation of the U.S. dollar is another significant impact on the ability of domestic lamb product to compete with foreign product. The climate of a strong dollar has made the U.S. market highly attractive to Australia and New Zealand lamb suppliers. This valuation is in the process of changing. The New Zealand dollar has declined 21.6% since last year and the Australian dollar has declined 15.5% during the same time. This trend is predicted to continue, but how it will ultimately impact the market is up for speculation. "On Thursday (June 19, 2003) the Australian dollar hit a four-year high, closing at 67.3 US cents. According to Australia's trade development agency, Austrade, they believe the agricultural industries are well placed to handle movement in the exchange rate. 'I think it affects farm incomes, but in the medium term, export volumes will still grow. So I think we're still internationally competitive,' stated Tim Harcourt, Austrade chief economist." (ASI Weekly, June 20, 2003). Whether this will be true for the lamb industry remains to be seen.

A marked change in the dollar values may cause the lamb market to alter slightly, although the American consumer's pocketbook is an attractive target for much foreign product whether food based or otherwise. The recent weakening of the dollar coupled with the Australian drought conditions has had a marked effect on the import of Australian product as this year they have only imported 77.23% of what they had imported last year as of April 12, 2003. New Zealand import tonnage has remained the same as last year and this is in the face of prices increasing in the U.S. by as much as 30% to 40% over last year. (USDA Livestock Summary).

The exchange rate is outside the scope of control and is subject to change.

Climate

Climactic conditions within and outside the U.S. boundaries have a continued impact on the marketplace as prolonged droughts in Australia have caused a decline in lamb production since 2002 which may a prolonged period to show a marked recovery. The U.S. has also experienced drought conditions in Texas and the Mountain States, which has precipitated a decline in flock numbers due to lack of adequate feed supply. This shortening of supply has in turn been a catalyst for strengthening the current U.S. lamb market for the first two quarters of 2003. The market is projected to remain at the higher levels unless demand is reduced by buyer resistance to the high prices.

Climate is an additional impact outside the scope of control and reacting to these impacts will require vigilant evaluation of the supply chain as it experiences climactic impacts in order to determine pricing structure, production levels and product type.

Scrapie and Foot and Mouth

The scrapie free status of both Australia and New Zealand allows them to process lamb offal and enjoy a high value for the products. Being scrapie free allows them to send their rendered products anywhere in the world, which allows them to extract the best price available, while the domestic product is limited in its available markets, putting it at a disadvantage in capturing a diversified market. The U.S. has only recently initiated a USDA Scrapie Eradication program aimed at eventually moving the U.S. into a more favorable scrapie status. But in the meantime capturing the value from lamb meal in the U.S. remains a challenge, especially to the small processor.

The incidence of foot and mouth disease outside the U.S., Australia and New Zealand has had varying impacts on the sheep and lamb meat trade. Great Britain was especially hard hit losing extensive market share. This has provided another market opportunity for countries without the disease to fill a market void. Great Britain was unable to fill orders outside of its borders due to restrictions. Without this export outlet the supply of lamb became backed up within country. Countries meeting EU (European Union) export requirements have been able to move into markets previously held by Great Britain. Currently the U.S. presence in the EU market is limited due to EU requirements and to a strong existing domestic market.

To address Scrapie and Foot and Mouth issues it would be advisable to develop quality assurance and traceability programs with producers to increase the level of product integrity. Another avenue would be to take advantage of the Oregon Department of Agriculture Identity Preservation Program where production programs are designed and third party inspection and certification is performed through ODA.

Country of Origin Labeling

The full impact that the proposed mandatory country-of-origin labeling will have on U.S. sheep production is not yet known. It will be somewhat dependent upon the regulatory alternative chosen by USDA to implement the rule. A recent study from the University of Florida (VanSickle, et al) notes that 1.7% of the 8.1 million sheep and lambs in the U.S. are of unknown origin. This number of 139,000 imported sheep would be the focus of tracking for the sheep industry rather than imposing tracking on the 98% that are born, raised and processed in the U.S. If an approach requiring all sheep in the U.S. to be tracked is imposed it will place an additional cost burden on all segments of the sheep industry, in turn increasing cost of production. This cost will have to be either absorbed by the industry or passed on to the buyer during the marketing process.

Traceability and country of origin labeling continues to be a growing issue in the marketplace and will be a necessary component of a lamb meat program.

> "Country of origin labeling is an important part of providing consumers with the information and choice that they desire. The reduction of food system risk and the preservation of consumer confidence in the food system are very important benefits. Every credible study has shown that consumers value this information and some studies show a significant willingness-to-pay to get this information." (VanSickle, et al).

The results of a survey done on COOL, as relates to beef, reported that "73% of consumers are willing to pay an 11% and 24% premium for COOL steak and hamburger respectively"; and that "consumers who were willing to pay the most for the label believed the label signified increased food safety and quality." (Umberger, et al,).

Until the regulations are finalized it is impossible to design a strategy to adequately address this issue. It would be advisable to utilize the labeling requirement as a marketing tool. The indicated consumer preference for local and domestic product may be utilized to maximize market impact and off-set the cost of implementing this labeling. COOL could be combined with the producer quality assurance program to provide maximum proof of product integrity.

Environmental

Environmental impacts range from those that impact production to those that impact processing. Production concerns include control of predation, grazing issues, and climactic conditions. Processing concerns revolve primarily around disposal issues of effluent and viscera, odor and land use questions regarding facility siting.

These regulations would be need to be considered on a site-specific basis. A consultant would need to be utilized to assure compliance with current regulations.

Federal Programs

The USDA programs for incentive payments for quality production of feeder and slaughter lambs, if continued, will provide a favorable environment for a lamb slaughter program. These programs reward producers for slaughter lambs that fall into the yield grade 2 category, have a 55# to 75# carcass, grade USDA choice or prime and have a muscling conformation score of average choice or better. Setting a production goal is helpful in increasing the consistency and the quality of the lambs brought to market. This is a positive step in assuring that a supply of quality lambs is available.

The ewe lamb retention payment is a stimulus to increase flock numbers. This may be an especially effective tool in Oregon where there is available forage for sheep. Of course, this $18 per head payment will only remain as an effective incentive if the market continues to provide adequate return on feeder and slaughter lambs to allow producers to achieve profitability.

After the U.S. government eliminated the Wool Incentive Program in 1996 the domestic lamb industry was left without a means of promoting their product. Funds from the Wool Incentive program had been used, by the various organized arms of the domestic lamb industry, to carry out promotional activities. Since that time American lamb production has decreased 23%. This decrease in stable production numbers has led to a softer, more volatile market. Australia and New Zealand have been aggressive in moving into this void and increasing their share of the U.S. lamb meat market.

The 201 Trade Action imposed tariffs on imported lamb meat products from 1999-2002. When the tariffs were eliminated the U.S. government implemented programs to assist U.S. sheep producers to compete with the imported products. These programs have provided short-term relief for producers but have not addressed the core question of how to bring stability to the sheep industry and increase flock numbers to move the industry toward long term profitability. The industry has requested that the program payments be continued for ewe lamb retention and payments on feeder lambs and slaughter lambs that meet program standards. A decision by USDA has not been made on this issue at the time of this report.

Promotional efforts for the lamb industry have been taken on by the American Lamb Board whose members were appointed in 2002 by Secretary of Agriculture Ann Veneman. This Board administers the check-off funds collected on the sale of domestic sheep. These funds are dedicated to promotion, research and information. This will renew promotion of American lamb. The impact of this effort remains to be seen, but it is hoped that it will bolster the demand for domestic lamb in the retail sector and foster an environment of profitability for all segments of the lamb industry. (American Lamb Board).

The U.S. lamb check-off program was instituted on July 1, 2002. It requires that $.005 per pound be assessed on the sale of live ovine animals of any age. An additional $.30 per animal is assessed to the first handlers at the time of slaughter. This program was implemented by USDA at the request of the industry to fund promotion, research and information programs for the U.S. sheep industry.

Oregon Economy

The current state of the economy offers both positives and negatives to a discussion on developing a new enterprise. The current lending rate is attractive, if it is necessary to borrow capital, thus creating a situation where repayment becomes less burdensome. On the other hand the state of the local economy impacts the population growth and the amount of disposable income available for high-end food purchasing. It will be necessary to build upon the image of Oregon lamb as being a quality local product providing consumers with a safe, highly nutritional and environmentally sound eating experience to assure share of this disposable income.

The current state of the Oregon economy points to a serious need for income generating enterprises in the state. Whether or not the regulatory climate for business development matches the state's need for revenue generating business development, appears to be in question. The current Oregon government administration has announced that an effort will be made to streamline government. This would indicate that there will be opportunity for new enterprises but the actuality is still to be tested.

The Oregon Economic and Revenue Forecast states that the "Oregon economy is in the grips of uncertainty". (Edmonston). This uncertainty is a call for caution but the future projections for personal income growth appear to be favorable, as are the projections for employment growth in the state.

Facility Location

Land use regulations and urban growth must be taken into consideration in order to site a facility or to assess the long-term viability of existing facilities. Despite the economic need for new industry in Oregon, current public opinion, in the more urbanized areas, may play a role in either siting a facility or in the length of time before urban encroachment would make a particular site objectionable. For a new facility, considering a site in a region which is considered "economically distressed" may provide some benefits both in community acceptance and in incentive programs than might be available to these particular areas.

Wool

The recent strengthening of the wool market, both globally and regionally, allows the producer some relief. The past 5 years have seen an almost non-existent market for the medium to coarse grades of wool grown in western Oregon and a less than break-even market for the finer grades produced in Eastern Oregon. The existence of an outlet for fleece at a price that offsets the cost of shearing takes some of the pressure off of the producer's need to balance his books on the back of the lamb meat. The Australian wool stockpile, which was eliminated in 2002 has been one of the causes for this change in the market. Without the wool stockpile the major international wool buyers now need to be current in their purchasing, which bolsters the wool price.

Operational Plan

Competition

Three product streams compete for the U.S. consumer lamb dollar: foreign product, domestic commodity product and direct-marketed private label product.

Australia and New Zealand are the key foreign competitors in the U.S. lamb market, although lamb also enters the U.S. from Canada, Argentina, and Iceland. Nationally, imported lamb from all countries makes up 39% of the market. (USDA ERS). The retail survey, for this project, completed in Oregon, Washington and Idaho identified that 35% of the retail stores contacted carry imported product. 3% carry both imported and domestic product in an effort to provide their customers with a choice. New Zealand and Australian lamb is perceived to be a premium product by some wholesale and retail buyers. That image is supported by the actual quality and consistency of the finished product that they bring to the U.S. market and the 9-12 week shelf-life that is maintained through advanced processing techniques.

Two major suppliers market the bulk of domestic lamb product in the Northwest. Both companies have an extensive marketing infrastructure. Entity one utilizes its own processing facility whereas entity two relies on contract slaughter. Entity two is attempting to increase market share in the Pacific Northwest. This could provide an opportunity for local contract slaughter. Local contract slaughter would reduce the costs of transportation of live lambs and of distribution of meat products in the Northwest region. Neither of these entities process in Oregon, Washington or Idaho and none are offering an Oregon branded product. These companies are positioned to meet the volume requirements of a large wholesaler. It could be difficult for a new supplier to capture a large existing market segment from this formidable competition.

The direct marketers, on the other hand, are able to offer local product but have the disadvantage of currently being unable to compete technologically with processing and packaging techniques seen in the imported and the domestic commodity products. They are also unable to provide the quantity of product required by some buyers. Yet they have the advantage of being able to offer a premium product with the tie to the origin of production that appeals to a segment of lamb consumers. Survey information indicates that there is significant interest on the part of retailers to entertain an Oregon product that can meet the quality and pricing specifications of their market.

Scenarios

The objective of this study is to identify the type of processing facility that will best match the needs of the regional market and the production capabilities of the Oregon sheep industry.

The business plan must determine whether the proposed service will enhance marketing capabilities for Oregon producers, what facility location would best serve the production and marketing areas and what volume of through-put would be required to achieve profitability.

The type of business is related to the needs identified in the marketplace. The best potential market appears to be one that would build upon the consumer's desire to have a fresh, safe and healthy product. The identified product is one that is branded with a local or Oregon label and that provides some degree of traceability to origin, whether it be to a specific producer or to a locality. The needs of the current Oregon market are about 65,000 lamb carcass equivalents. The population areas targeted are located in the urban areas of Portland, Eugene and Bend, where there is not only a population density, but consumers who fit the demographics of more frequent lamb eaters.

The location of a facility should have a direct relationship to the area of lamb production and current processing. The highest lamb production areas are located in the Willamette Valley and the South Coast. The largest number of direct marketers, currently providing Oregon labeled lamb, are also located in these areas. This would lead one to speculate that the most likely area to locate a processing facility would be in proximity to these high production and marketing areas.

Oregon lamb production is 150,000 head with a consumption rate of 65,000 carcass equivalents. 91% of retailers surveyed in Oregon, Washington and Idaho carry a lamb product. The fact that 91% of retailers currently carry a lamb product indicates that there is limited growth opportunity in developing business from non-existing markets. The growth that would be generated from a local plant would be based on capturing a percentage of the established market currently being supplied by imported product, rather than to target markets that currently carry domestic product. The market share held by imported product appears to be the most vulnerable market segment based on the fact that a high percentage of retailers and consumers indicate a preference for local or Oregon produced and processed product. This market could conceivably be obtained through improved processing and packaging, marketing strategies and niches that only a local product can provide.

This study has shown that there is a demand for local product, if it is professionally processed. This product would need to be priced at a level to assure competitiveness to the commodity trade product offered by large commercial processors, yet take advantage of the opportunity for slightly higher pricing based on a premium product offering of a local, fresh, wholesome product. Higher return will be needed to cover the increased processing costs inherent in operating a specialized small through-put facility. Consumers indicate a willingness to pay slightly more for locally produced, Oregon branded product, but it cannot be priced at a level that creates price resistance.

For a small processing plant to succeed there must be a clearly articulated need that could support the business. This can be met either by a service or a product that is not currently available or by offering improvements on services or products currently available. It would not be the intention of this proposed facility to provide its own product line but to offer an improved service on what is currently available. The direct marketers that presently market local product have established market lines and relationships that are working, and there appears to be no need to duplicate these efforts. It would, most likely, add confusion to the customer to have an additional Oregon branded product in the marketplace and to create unwelcome competition for the existing marketers. There does appear to be room for market improvement in the area of processing. The retail survey

indicates that there is a need for improvement in the areas of shelf-life, packaging and processing. The direct marketers and their processors echo these concerns. Answering this need would be a step toward increasing sales of local product. A working relationship amongst the direct marketers addressing concerns for processing would be required.

Two industry segments exist that currently require contract slaughter and processing. These are the direct marketers and the lamb breakers who currently contract with facilities to slaughter or those that buy carcasses. These entities include Oregon direct marketers and out-of-state marketers who presently source lambs in Oregon and process them in out-of-state facilities. The advantages, to the Oregon direct marketers, of having a local facility with upgraded processing technology would be an improved final product and lower processing costs. Direct marketers indicated that the current limited processing capacity available to them is an obstacle to expanding their markets. (Direct Market Survey). Out-of-state marketers, who source Oregon lambs and process outside the state, show interest in the opportunity to process Oregon lambs closer to the production sites. Processing close to the production location would tend to minimize stress and shrink related to long transport time of live animals and would add the convenience of local warehousing and distribution for the finished product, facilitating the suppliers efforts to gain market share in the northwest region. There is a demonstrated need to provide quality local processing to these entities.

Contract processing is also an option for the growing goat populations in Oregon. The Douglas County Meat Goat Association indicates that they presently market 700 goats per year, which are shipped out of state for processing. It is estimated that there are more than 1,000 Boer does presently in Douglas County, compared to approximately 200 head three years ago. (Reed). The increasing ethnic population in Oregon provides an opportunity to market this product locally. The Douglas County association indicates that reaching out to this market is a challenge due, in part, to the lack of processing facilities in Oregon and the cost of transportation to out of state facilities. Thus it is apparent that the lamb and goat industries in Oregon face similar challenges in marketing their products.

There is recent growth in the dairy industry in the eastern Oregon, Washington, and Idaho as dairy operations move from more populated areas of the U.S. to escape the intrusion of urban growth. This provides an opportunity for veal slaughter as an additional means to increase the volume of through-put in an Oregon facility.

A New Zealand firm has designed a kill facility, that is presently in operation, to accommodate all three of these species, at an efficient rate. It would be realistic to set up a processing schedule that could be designed to meet the weekly processing needs of these species within Oregon thus maximizing the potential plant production.

Two possible scenarios were evaluated on the basis of providing a quality processing service at a cost-effective rate, with adequate volume to achieve profitability and at an accessible location. These models were a stationary facility and a mobile facility.

The first step involved determining the number of head required to establish a cost competitive kill for a stationary plant. A figure of $34-37 per head kill, cut and wrap

charge was estimated. This price is higher than large commercial facilities which offer service kill from $29- $32. This figure was arrived at by an estimate of a service kill charge plus the USDA cut and wrap figure of $.30 per pound on a 68 pound carcass. This figure is considerably lower than existing multi-species facilities in Oregon, which average $46/hd. The $34-37 cost as compared to commercial facilities was justified by the fact that in-state processing would decrease transportation costs and any loss of return due to shrink and handling.

The type of facility required to offer a $34-$37 per head service kill and cut and wrap would be a stationary structure. The cost of such a facility, based on a construction rate of $175/square foot, is estimated at $1 million and would require 13 full time employees. In order to meet overhead costs it would require a through-put of approximately 600 head per day. At this level of production a rendering plant to deal with inedible material would be justified on the basis of volume. For a kill operation of this size it was determined that 144,000 head would need to be slaughtered annually. This would require a very aggressive marketing plan since this number represents 70% of the total current estimated market demand for Oregon, Washington and Idaho. It was concluded that the feasibility of obtaining 70% of market share from established product lines was an impractical proposal.

The subject of facility location has been noted as a concern of the direct marketer. Identifying a stationary facility site that would provide for convenient and economical access from all parts of the state became an insurmountable obstacle. Direct marketers, who might utilize this facility, are located throughout the state and presently work with local multi-species plants that provide service in relatively close proximity to most of the survey respondents. The low weekly volume of the direct marketer makes transportation distance and the resulting cost a major issue. Since the marketers are already incurring high processing costs they cannot afford to add additional transportation costs that may not be off-set by increased market share based on an improved end product and lower processing costs. Thus, although several locations throughout the state were considered as possible sites for a stationary facility, it was determined that no one site would attract adequate volume, at this time, to warrant the expense involved in constructing and operating such a facility. This approach was deemed impractical to further consider for implementation.

In summary the disadvantages of building a small stationary facility are:

- Permitting and siting challenges due to environmental regulations related to water and disposal issues, in addition to siting issues involving citizens unlikely to welcome a slaughter business. The eastern and central portions were identified as locations which would be more accepting of this type of agricultural enterprise.
- These locations would not provide convenient access for the majority of the current direct marketers thus it was speculated that it would be difficult to attract these users to the facility. Therefore a new Oregon branded product would need to be developed to supply the volume needed for a small through-put of 200 head per week.
- This new Oregon branded product would be in direct competition to the existing direct marketers which would cause increased competition that would have a negative affect on the current wholesale price of product, possibly driving it below the level needed for profitability.

It was concluded that a small stationary facility could be considered, if adequate through-put could be achieved through maximum utilization by the existing direct marketers.

The disadvantage of a large stationary facility would be:

- The operation would move from the higher return of the niche market to the commodity market arena and be placed in direct competition with established processors for procurement of live lambs and for product marketing. The size of the U.S. sheep industry and the available market does not warrant additional production on this scale.

For these reasons it was concluded that a large stationery facility without an existing national marketing program would be unlikely to be viable and would not address the needs of the Oregon industry in capturing a share of the market held by imported product.

The second scenario investigated was a mobile facility that would more appropriately meet the needs of the potential clients. The traditional farm slaughter unit lacks the capability to meet USDA inspection standards so alternative methods were investigated. Recently a USDA inspected mobile slaughter unit was put into operation in the state of Washington. This unit was visited and the operation was evaluated. Using the basic operational methods employed by this unit a model was developed to accommodate an increased number of lambs and to employ expanded technology to address a wider range of processing techniques to further decrease food safety risks.

Through this investigation it was determined that a mobile slaughter unit would best meet the needs of the described market, the production capabilities of the Oregon sheep industry and achieve economic viability.

The facility proposed will provide slaughter and fabrication on a contract basis for lamb, goat and veal. The facility will be designed to use the inverted system of slaughter to maximize efficiency and offer the most cost-effective price possible to provide users with a cost competitive product. The facility will focus on food safety issues to eliminate the possibility of bacterial contamination at each stage of processing through the use of current technology in processing and the development and implementation of a HACCP plan to insure good handling practices.

The business plan for a mobile facility will be developed on the basis of 10,000 kill units per year. It is speculated that a percentage of the 9,900 sheep and lambs presently processed in Oregon could be attracted to utilize the service of this facility. Goat and veal processing would provide the additional volume required.

This mobile facility would be designed to kill 100 units in one day. Initially, kill would take place for two days per week. The carcasses would then be transferred to a refrigerated mobile trailer unit to be transported to a fabrication facility. The trailer would be designed to hold two-days kill before traveling to the fabrication facility.

A crew of three is anticipated to carry out these duties. By having three employees, individual slaughtering duties can be separated from live animal contact and the handling of non-edible items, wool-on slaughter duties and wool-off slaughter duties. With this

degree of segregation hygiene standards can be maintained as well as utilizing the efficiencies and safety of an inverted system.

An inverted system of slaughter would be employed rather than the cradle system used in most multi-specie facilities. The disadvantage of the cradle system is that one man usually performs the slaughter tasks from start to finish and there is minimal physical segregation in the process. The cradle method leads to an increased risk of product contamination. Employing an inverted system with physical segregation would minimize these risks. The cradle system also creates a situation where the employee is subject to uncomfortable and potentially damaging working positions leading to decreased employee safety. The cradle system and the inability to maintain the carcass at working height increases the time involved in carrying out the necessary tasks, leading to an increased cost of processing.

Improved product hygiene would be achieved through the use of the inverted system and physical segregation of the processing tasks. The three employees would be segregated in following areas of 1) pre-slaughter duties; 2) wool-on tasks; and 3) wool-off tasks. Pre-slaughter duties include handling the livestock, stunning the animal, exsanguination, shackling, and handling skins after removal. Wool on tasks include opening the fore quarter y-cut, clearing the neck and shoulders, pulling the brisket patch, head removal, pulling the shoulders, performing the rip down cut, punching the flank, removing the hide with a mechanical hide puller, removal of hind feet, and removal of fore feet. Hand washing and sterilization of equipment would be required at certain intervals during these procedures. Wool off tasks include a pre-evisceration hygiene trim and wash, performing the eviscerating cut, removing the viscera, separating the viscera and offal for inspection, performing another hygiene-trim and offering the carcass for inspection. Hand washing and sterilization of equipment would be required at certain intervals during these procedures.

A fabrication facility would need to be established with the space to handle fabrication for 100 lambs per day. For fabrication purposes equipment would be needed to package both vacuum pack and gas flush. Equipment is currently available that has the capability to provide both services. Both processes are needed to expand the product range. To control capital investment a leased facility would be the optimal choice. Processing, packaging, and warehousing would take place at central location by the same crew as the kill. A leased facility in the Eugene to Portland area or working with an existing fabrication facility that could handle cutting and wrapping of 100 lambs per day would be arranged. The objective would be to keep the same crew occupied on a full-time basis. It is projected that initially there will be two days of kill, two days of processing, and one day allowed for travel time.

The cost established for the service of slaughter and fabrication would be $45 per head.

The goal for all product services would be to produce a consistent premium product for the users allowing them to capitalize on the identity of an Oregon produced and processed product, with visions of clean, green and local, building on consumer survey data that indicates a preference for local product. (American Strategies).

Attempts would be made to allow for flexibility in processing to adapt to market needs and changing product requirements. Packaging equipment and fabrication methods will be developed to service new product developments to meet clients changing needs as their market expands. Every attempt will be made to process to the specifications of the user in a cost-effective manner.

Increased growth in volume, for the facility, could initially be handled by adding staff and operating the unit full time. An additional mobile unit could be added to meet future increased volume.

Marketing of products

There are many by-products that are derived from animal slaughter. The primary destinations are to markets utilizing edible and non-edible product including pet food, and pharmaceutical companies. The most common by-products of sheep are: skins, intestines, abomasum, omasum, blood, head, hearts, livers, kidneys, and tongue roots. Anything that is not used is usually rendered. The problem faced by the small processor is collecting enough material to attract the attention of a buyer. The cost of collecting this material has to be analyzed very closely because the collection expense is sometimes not justified in market returns.

As was previously noted, the ethnic market provides an ideal outlet for marketing of the offal items such as liver, hearts, and tongues. One Oregon distributor interviewed is targeting this market with a branded product directed to the Latino population. Although a local product would offer convenience in product availability for this distributor, price becomes a serious consideration. It will be important for the processor to achieve, at the least, price parity in meeting the costs of extraction and processing of the product. Ideally the sale of these items should add to the value of the entire carcass and assist in covering processing costs. The ethnic market currently does not appear to have a preference for product origin, but considers price and preference for less fat as high priorities in purchasing decisions. (Genho, et al).

Most successful slaughter enterprises realize that the difference between profit and loss lies in the successful marketing of the by-products. The available markets should be thoroughly explored to achieve the maximum value of by-products. Although the cost of recovery needs to be considered so that by-product recovery does not exceed market value.

Skins and Drop Credits

An opportunity exists with the mobile unit to offer a joint marketing effort, by the users, in drop credits, in particular skins and casings. These items could be preserved at the point of slaughter and held till an appropriate volume is reached to attract a buyer. The labor to recover the casing and to do a tannery trim and salting of the skin was accounted for in the kill cost budget. The cost of preserving salt and a place to hold while the skin purges would be needed and also a place to strip clean the casing.

Skin credits are variable depending on available markets and quality. The skin market is based on various factors including:

- Skin size, based on square feet, skins with larger square feet are usually more valuable than those with less square feet. The usual square footage range is from 7.5 to 10 square feet.
- Density of wool or fibers per square inch is another consideration. Some animals will tend to have weak bellies where the density in the belly area is considerably less than in the side or back, resulting in lower value.
- Wool count and fiber diameter is graded throughout the entire skin. Some breeds tend to throw some hair follicles on the leg and rump area, reducing the value of the skin.
- Color, should be without stains due to weather or physical marking of sheep. Black pigmented fibers that are found in the pattern of the skin will reduce the value. Black legs or face of the sheep is not a problem since these parts are removed during the tannery trim phase.
- Length of fiber is a variable depending on the buyer's needs.
- The hide itself should be free of seed and seed scarring, inoculation marks, grain strain, and damage done during the processing. All of these conditions will cause discounts in the pelt value.

Sheep that are suited for the high moisture areas (which is where the majority of Oregon lamb production is located) tend to have a more open type fleece making it difficult to reach the high-density specification. The high rainfall also adds some discoloration, again devaluing the skin credit.

With proper skin preservation and grading, the combined skins of the total kill could be offered for sale four times per year. This offering would be of approximately 2,500 skins. Skin credits vary greatly, but one can usually allow anywhere from 4 to 12 dollars per skin.

Casings could be pulled and stripped at the point of kill. Either by using brine or by freezing storage, collection could take place until a shipment volume is reached. Currently casings are valued at a dollar per head for those that qualify. Specifications for this product usually consist of a minimum length of 24 meters. A relationship with a casing buyer will aid in achieving the maximum recovery methods to ensure the greatest dollar return per head.

The market for these products has many variables. It is impacted by the quality of the product and there are no set returns, due to the volatility of the market. Sale proceeds from by products were not reflected in the budget because of this uncertainty. Any returns from this marketing would therefore ultimately be subtracted from the processing cost.

HACCP

The Hazard Analysis Critical Control Point (HACCP) program is required by law. It becomes a means to self-govern a processing operation to assure that the product leaving the facility has been handled in a manner that will minimize food safety concerns. A facility is required to develop a plan acceptable to USDA. It is the intent of HACCP that

each plant establish preventive measures which are based on scientific evidence to ensure a safe food supply.

HACCP is based on sound science that focuses on identification and prevention of hazards from contaminating food. Traditionally, industry and regulators have depended on spot-checks of manufacturing conditions and random sampling of final products to ensure food safety. This approach, however, tends to be reactive, rather than preventive. A good HACCP plan that is properly administered and kept up to date can be used as a competitive tool.

A HACCP plan has seven principals;

- **Analyze hazards.** Potential hazards associated with a food are identified and measures to control those hazards are developed. The hazard could be biological, such as a microbe; chemical, such as a toxin; or physical, such as ground glass or metal fragments.
- **Identify critical control points.** These are points in food production--from a raw state through processing and shipping to consumption by the consumer--at which the potential hazard can be controlled or eliminated. Examples of these production points are cooking, cooling, packaging, and metal detection.
- **Establish preventive measures with critical limits for each control point.** For a cooked food, for example, this might include setting the minimum cooking temperature and time required to ensure the elimination of any harmful microbes.
- **Establish procedures to monitor the critical control points.** Such procedures might include determining how and by whom cooking time and temperature should be monitored.
- **Establish corrective actions to be taken when monitoring shows that a critical limit has not been met**. For example, reprocessing or disposing of food if the minimum cooking temperature is not met.
- **Establish procedures to verify that the system is working properly.** For example, testing time-and-temperature recording devices to verify that a cooking unit is working properly.
- **Establish effective record keeping to document the HACCP system.** This would include records of hazards and their control methods, the monitoring of safety requirements and action taken to correct potential problems. Each of these principles must be backed by sound scientific knowledge. For example, published microbiological studies on time and temperature factors for controlling food-borne pathogens.

Unless one is knowledgeable of HACCP, it is strongly recommended the services of a consultant, that specializes in this area, be enlisted in the establishing a HACCP plan and carrying out audits on a random basis. The foreman of the operation should be a HACCP team member and responsible for carrying out the procedures, monitoring, and recording of the data. He/she should be adequately trained so as to have a thorough knowledge of the application, monitoring, and recording of the data.

There is also free information from the USDA on establishing a HACCP plan that is targeted for small and very small processing plants, if one chooses to do it themselves.

Labor

The advantage of a small specialized facility over a multi-species facility will be seen in the increase of labor efficiencies, employee safety and product hygiene. Existing facilities are using the cradle system with a production capacity of 3-5 head per man hour. The system proposed by this study would be an inverted style of dressing which would require a three man team and have a production rate of 5-7 head per man hour. The inverted system would provide increased employee safety due to the fact that the inverted system maintains the animal at an ergonomically correct working height during processing reducing bending, lifting and uncomfortable and irritating working positions. A simple table shows the effects of labor efficiencies when calculating kill costs. These figures were determined by using $12.00 per hour on a 2000 hour year with 25% fringe and figuring total of 75 head per hour for 2000 hours.

Head per Man Hour	Number of Personnel Needed	Labor cost per Head
4	19	$3.80
6	13	$2.60
8	10	$2.00
10	8	$1.60
12	7	$1.40

Table 10: Labor Efficiencies

Employee training programs would be an integral part of the facility operation. This training should cover not only specific processing techniques but also personal safety, food safety and personal hygiene. Training will not only include technique but theory to provide an understanding of why these procedures are necessary and the effect on final product of not following these standards. Quality training in all of these aspects will not only insure a high quality end product but will provide an environment of job security where employees are aware that they hold a full time position in a specialized industry

Waste Disposal

With the disappearance of rendering, and the non acceptance of sheep or goat material, the disposal methods are limited. Future use of landfills and incineration have concerns over ground water pollution, and increase economic cost which is leading into more investigation of the use of composting. Composting is more in line with the quest of becoming more environmentally friendly and is gaining popularity with the disposal of on farm mortalities of livestock as well.

Because of the use of a mobile plant the responsibilities of disposal will be that of the facility users. Composting material has a value if it is either for self use or commercial, and a cost benefit analysis of composting compared to landfill fees, would need to be performed for each kill location. Currently disposal fees at land fills run from a low of $18 per ton to a high of $80 per ton depending on the location of the facility.

Many Universities have developed plans for composting and a summary of the method is as follows.

- A base that can collect the moisture from decomposing processing material needs to be laid out at least 12 inches thick. This base can be from such material as sawdust, woodchips, bark, straw, or any available material that permits an organic breakdown through microbial action. Enough base should be provided so that no liquids are able to leach out of the pile. Additional base may need to be added if leaching does occur.

- Place a layer of the processing material to be composted on the base. A single layer of processing material (not exceeding the height of the base) should be centered, and be spaced evenly across the base. Full animal carcasses should be placed in a single layer on the base.

- Cover the processing material with 1-2 feet of the same material as used for the base. Water may be added to keep material in place. This dampened cover is needed to retain the heat, and acts as a filter in reducing odors. If odors are too strong more covering of the dampened material will need to be added. Great care should be taken in reducing the odors for it acts as an attractant for pets and vermin.

- The pile should be allowed to decompose (adding additional base and cover as needed) until the internal temperature of 130 to 150 degrees Fahrenheit is reached and maintained for at least three days. The temperature will then decline slightly to about 110 degrees and the pile should be left alone for a minimum of ten days. At the completion of the ten-day cycle, the pile should be thoroughly mixed.

- After this mixing the temperature in the pile should then increase to 130 to 150 degrees within three days and will then slowly cool. At this point a waiting period of 30 days should be maintained before applying to fields, sold or be mixed with new base material and reused as the cover to next batch of material to be composted.

Distribution

Product distribution after processing should not present a major obstacle. The proximity to Interstate 5, of established USDA inspected facilities in Oregon, provides excellent access to move product efficiently. Interstate 84 would also provide transportation access

for any sites that might be established along that route. Hwy 97 is another primary transportation artery through the interior of Oregon providing convenient access to transportation. Air, rail and water transport are also readily available modes of transportation.

The ability to deliver overnight to markets will give the product added value since its customers will not have to carry large inventories to insure they do not have stock outs in their stores. This will also add to the perception that it is a fresher product. Distribution will be carried out by the facility users.

BUDGET
Budget/Mobile Slaughter

Mobile Kill	Year 1	Year 2	Year 3	Year 4	Year 5		15,600hd/year
Loan P & I	$ 29,259.36	$ 29,259.36	$ 29,259.36	$ 29,259.36	$ 29,259.36		$ 29,259.36
Depreciation	$ 30,000.00	$ 30,000.00	$ 30,000.00	$ 30,000.00	$ 30,000.00		$ 30,000.00
Property Insurance	$ 3,250.00	$ 3,250.00	$ 3,250.00	$ 3,250.00	$ 3,250.00		$ 3,250.00
Liability Insurance	$ 2,750.00	$ 2,750.00	$ 2,750.00	$ 2,750.00	$ 2,750.00		$ 2,750.00
Truck Insurance	$ 3,500.00	$ 3,500.00	$ 3,500.00	$ 3,500.00	$ 3,500.00		$ 3,500.00
Labor	$ 66,000.00	$ 66,000.00	$ 66,000.00	$ 66,000.00	$ 66,000.00		$ 84,000.00
Workers Comp	$ 10,560.00	$ 10,560.00	$ 10,560.00	$ 10,560.00	$ 10,560.00		$ 13,440.00
Employee supplies	$ 1,500.00	$ 1,500.00	$ 1,500.00	$ 1,500.00	$ 1,500.00		$ 2,000.00
Laundry	$ 937.00	$ 937.00	$ 937.00	$ 937.00	$ 937.00		$ 1,250.00
Travel Expenses	$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 15,000.00		$ 20,000.00
fuel/licensing /permits	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00		$ 10,000.00
R & M	$ 9,000.00	$ 9,000.00	$ 9,000.00	$ 9,000.00	$ 9,000.00		$ 9,000.00
Office expense	$ 3,000.00	$ 3,000.00	$ 3,000.00	$ 3,000.00	$ 3,000.00		$ 3,000.00
Contract office Help	$ 6,000.00	$ 6,000.00	$ 6,000.00	$ 6,000.00	$ 6,000.00		$ 6,000.00
Professional Services	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00		$ 2,500.00
Water	$ 235.00	$ 235.00	$ 235.00	$ 235.00	$ 235.00		$ 256.00
Utilities	$ 3,000.00	$ 3,000.00	$ 3,000.00	$ 3,000.00	$ 3,000.00		$ 4,680.00
Slaughter supplies	$ 13,000.00	$ 13,000.00	$ 13,000.00	$ 13,000.00	$ 13,000.00		$ 20,280.00
Total	$ 209,491.36	$ 209,491.36	$ 209,491.36	$ 209,491.36	$ 209,491.36		$ 245,165.36
10,000 head =	**$ 20.95**	**$ 20.95**	**$ 20.95**	**$ 20.95**	**$ 20.95**		**$ 15.72**

Budget/Fabrication

Fab	Year 1	Year 2	Year 3	Year 4	Year 5		15,600hd/year
Leased facility & equi	$ 55,000.00	$ 55,000.00	$ 55,000.00	$ 55,000.00	$ 55,000.00		$ 55,000.00
Property Insuranse	$ 3,250.00	$ 3,250.00	$ 3,250.00	$ 3,250.00	$ 3,250.00		$ 3,250.00
Liability Insurance	$ 2,750.00	$ 2,750.00	$ 2,750.00	$ 2,750.00	$ 2,750.00		$ 2,750.00
Labor	$ 44,000.00	$ 44,000.00	$ 44,000.00	$ 44,000.00	$ 44,000.00		$ 56,000.00
Workers Comp	$ 7,040.00	$ 7,040.00	$ 7,040.00	$ 7,040.00	$ 7,040.00		$ 8,960.00
Employee supplies	$ 1,500.00	$ 1,500.00	$ 1,500.00	$ 1,500.00	$ 1,500.00		$ 2,000.00
Laundry	$ 937.00	$ 937.00	$ 937.00	$ 937.00	$ 937.00		$ 1,250.00
R & M	$ 6,000.00	$ 6,000.00	$ 6,000.00	$ 6,000.00	$ 6,000.00		$ 6,000.00
Office Expense	$ 3,000.00	$ 3,000.00	$ 3,000.00	$ 3,000.00	$ 3,000.00		$ 3,000.00
Contract office Help	$ 6,000.00	$ 6,000.00	$ 6,000.00	$ 6,000.00	$ 6,000.00		$ 6,000.00
Professional Services	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00		$ 2,500.00
Water	$ 100.00	$ 100.00	$ 100.00	$ 100.00	$ 100.00		$ 110.00
Utilities	$ 7,000.00	$ 7,000.00	$ 7,000.00	$ 7,000.00	$ 7,000.00		$ 10,920.00
sewage	$ 3,000.00	$ 3,000.00	$ 3,000.00	$ 3,000.00	$ 3,000.00		$ 3,500.00
Fabrication supplies	$ 65,000.00	$ 65,000.00	$ 65,000.00	$ 65,000.00	$ 65,000.00		$ 101,400.00
Total	$ 207,077.00	$ 207,077.00	$ 207,077.00	$ 207,077.00	$ 207,077.00		$ 262,640.00
Per Head	**$ 20.71**	**$ 20.71**	**$ 20.71**	**$ 20.71**	**$ 20.71**		**$ 16.84**

Start-up Costs
Annual financial statements are included on the following pages. These statements are based on the above generalized annual budget for slaughter and fabrication.
Note: An additional $75,000 has been included to cover start-up expenses and operating costs.

The following assumptions were used to develop cash flow projections needed to determine the feasibility of starting a lamb processing facility.

Revenue Assumptions

1) Revenue projections would be variable under different business structures. (Options include sole proprietor, partnership, corporation or cooperative). For the purposes of this budget we have used a revenue figure of $45 per head contract processing. Since the facility will need time to reach maximum production the first year is based on the following monthly lamb numbers:
   January 400 hd.
   February 500 hd.
   March 600 hd.
   April 700 hd.
   May 800 hd.
   June through December 833 hd. per month

Expense Assumptions

1) It is estimated that a $300,000 investment would need to be made to establish the mobile kill facility. This figure was based on the information obtained from the group who built the mobile unit operating in the state of Washington. The estimated size given for this proposed facility would be twice the size of the one currently operating, which was built for $150,000.

2) The principal and interest payment was calculated by using a down payment of $90,000 (30%) of $300,000 and 7% interest on the balance over a ten year period. The payment for principle and interest on a $210,000 loan would be $2438 per month.

3) The property and liability insurance estimate was obtained through an insurance agent and was divided 50/50 between the kill and fabrication divisions of the operation.

4) Labor was calculated on the basis of one manager at $40,000 annually and two laborers at $24,000 each. 25% fringe benefits were then added to these figures. Three-fifths of the employee annual time would be spent on the kill section taking up three days a week and two-fifths for fabrication. The total annual wages were divided between slaughter and fabrication using 3/5 for slaughter duties and 2/5 for fabrication and 16% was used in calculating the workman's compensation insurance.

5) $1,000 per employee per year is budgeted for: clothing, personnel protective equipment, knives and equipment, hygiene and sanitation, and training. This annual cost was split 50/50 between kill and fabrication.

6) Laundry allowed $2.50 per employee per working day.

7) Travel was figured at $100 per employee for the one night spent away from home.

8) Fuel licensing and permits was figured on a truck traveling approximately 25,000 miles per year. 15 cents road tax, fuel at $1.30 per gallon for 6 miles per gallon, $250 for licensing.

9) Repair and maintenance allowed 3% of the $300,000 start up figure.

10) $6,000 a year was budgeted for office expense that was split 50/50 between the fabrication division and the kill division. This would cover the purchasing of new computers, phone, fax, copiers and monthly service fees.

11) A part time office staff would need to be hired on a contract basis. $12,000 annually is budgeted, splitting the cost 50/50 between the kill and fabrication.

12) Professional services allowed $5,000 per year, with a 50/50 split between the kill and fabrication divisions.

13) Industry consultants were contacted regarding utility usage in small stock kills. Based on an average figure over several plants, 42 gallons of water and 2kw/hour of electricity per head would be required for the kill, chill, and fabrication. The kill utilizing the greatest water usage and the chill utilizing the greatest energy usage. 70% of water usage was apportioned to kill and 30% to fabrication. The energy was the opposite where 70% was allotted for the fabrication and 30% for the kill.

14) Water was calculated at 80 cents per 1000 gallons. Electricity rates were estimated at an average Oregon rate, since this charge will be dependent on location and the time of day of the highest electricity use. $10,000 a year was budgeted or 50 cents per kw/hour. Depending on location other energy sources maybe available such as natural gas.

15) Slaughter supplies included weasand clips, bung plugs, paper, QA and HACCP material. A figure of $1.30 per head was used.

16) The leased facility for the fabrication and equipment was based on 10% of the listed sale price of an existing facility that is processing meat. The business is for sale for $450,000 and an additional $10,000 is for additional equipment.

17) Fabrication supplies included packaging material and consumables that are involved in further processing meat. $6.50 per head was used as an average, realizing that this is very much a variable depending on the level of fabrication required by the customer.

18) An additional column was added to show the effects of increased productivity. At 10,000 head per year, employing 3 people at 5 head per man-hour was projected. With 4

people at 6 head per man hour 15,600 head annually could be achieved. With the employee cost and per head cost changing and the fixed cost remaining the same, significant financial benefits are gained

Balance Sheet

	Actual	*Forecasted*											
	2003	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
ASSETS													
CURRENT ASSETS													
Cash and cash equivalents	$75,000	$64,504	$53,087	$46,169	$43,752	$45,837	$49,405	$52,973	$56,542	$60,111	$63,680	$67,248	$70,818
Accounts Receivable	0	8,285	10,356	12,427	14,499	16,570	17,253	17,253	17,253	17,253	17,253	17,253	17,253
Inventory	0	0	0	0	0	0	0	0	0	0	0	0	0
Other current assets	0	0	0	0	0	0	0	0	0	0	0	0	0
Total current assets	75,000	72,789	63,443	58,596	58,251	62,407	66,658	70,226	73,795	77,364	80,933	84,501	88,071
FIXED ASSETS													
Land	0	0	0	0	0	0	0	0	0	0	0	0	0
Buildings	0	0	0	0	0	0	0	0	0	0	0	0	0
Equipment	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000
	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000
Less-accumulated depreciation	0	5,000	10,000	15,000	20,000	25,000	30,000	35,000	40,000	45,000	50,000	55,000	60,000
Total fixed assets	300,000	295,000	290,000	285,000	280,000	275,000	270,000	265,000	260,000	255,000	250,000	245,000	240,000
INTANGIBLE ASSETS													
Cost	0	0	0	0	0	0	0	0	0	0	0	0	0
Less-accumulated amortization	0	0	0	0	0	0	0	0	0	0	0	0	0
Total intangible assets	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER ASSETS	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Assets	$375,000	$367,789	$353,443	$343,596	$338,251	$337,407	$336,658	$335,226	$333,795	$332,364	$330,933	$329,501	$328,071

	Actual	*Forecasted*											
LIABILITIES AND OWNERS' EQUITY	2003	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
CURRENT LIABILITIES													
Accounts payable	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Notes payable	0	0	0	0	0	0	0	0	0	0	0	0	0
Current portion of long-term debt	36,351	36,351	36,563	36,776	36,990	37,206	37,423	37,642	37,861	38,082	38,304	38,528	38,752
Income taxes	0	0	0	0	0	0	0	0	0	0	0	0	0
Accrued expenses	0	10,790	12,861	14,932	17,003	19,075	19,758	19,758	19,758	19,758	19,758	19,758	19,758
Other current liabilities	0	0	0	0	0	0	0	0	0	0	0	0	0
Total current liabilities	36,351	47,141	49,424	51,708	53,993	56,281	57,181	57,400	57,619	57,840	58,062	58,286	58,510
NON-CURRENT LIABILITIES													
Long-term debt	173,649	173,649	170,504	167,340	164,158	160,958	157,738	154,500	151,243	147,967	144,672	141,357	138,024

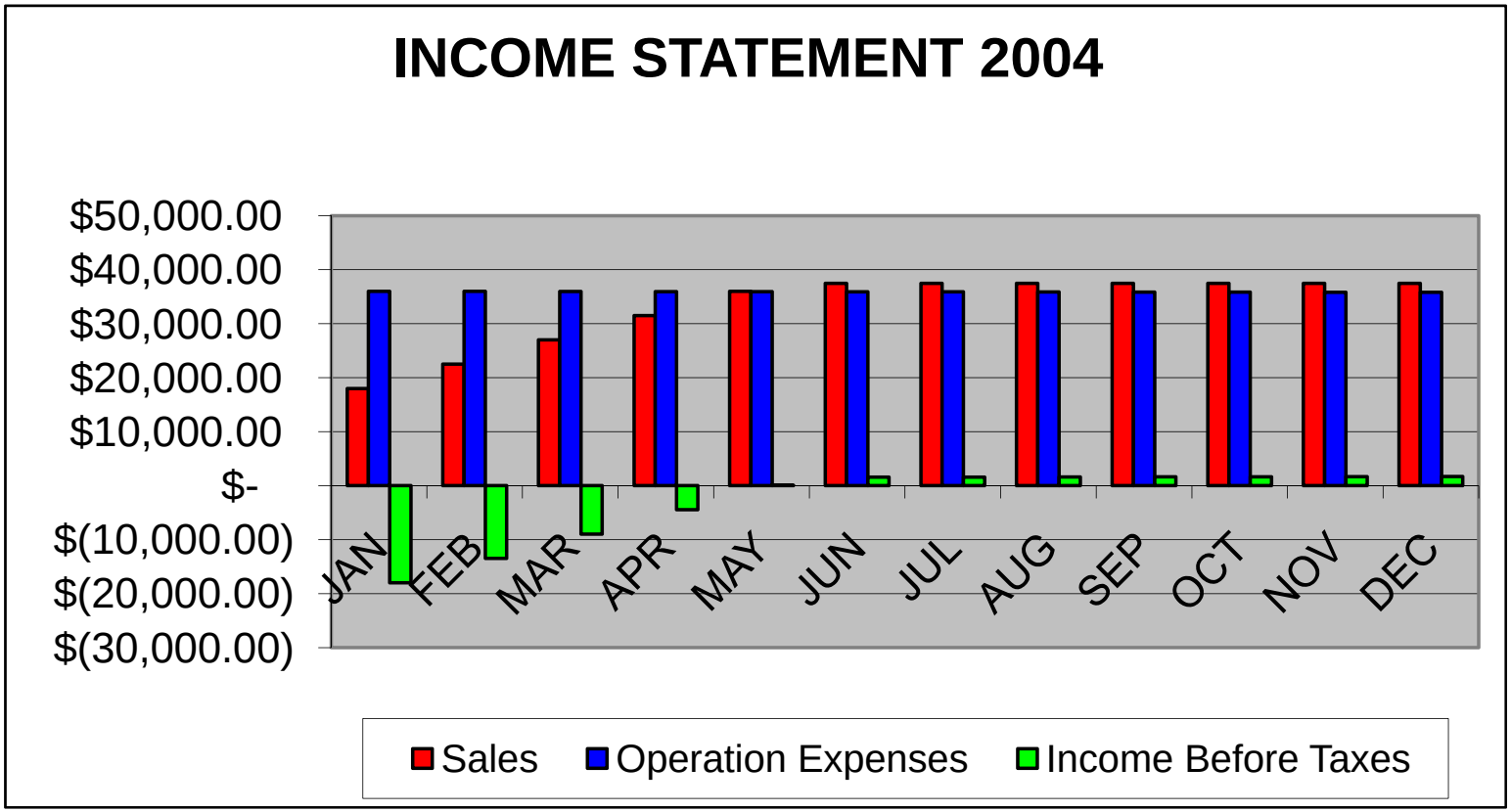
	0	0	0	0	0	0	0	0	0	0	0	0	0
Deferred income taxes	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Total liabilities	210,000	220,790	219,928	219,048	218,151	217,239	214,919	211,900	208,862	205,807	202,734	199,643	196,534
OWNERS' EQUITY													
Capital stock issued	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000
Paid In Capital	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000
Undistributed earnings	0	(18,001)	(31,485)	(40,452)	(44,901)	(44,833)	(43,262)	(41,674)	(40,068)	(38,444)	(36,802)	(35,142)	(33,464)
	165,000	146,999	133,515	124,548	120,099	120,167	121,738	123,326	124,932	126,556	128,198	129,858	131,536
Total Liabilities and Equity	$375,000	$367,789	$353,443	$343,596	$338,250	$337,406	$336,657	$335,226	$333,794	$332,363	$330,932	$329,501	$328,070

Statement of Income and Retained Earnings

	Forecasted												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2004
SALES													
Sales	$18,000	$22,500	$27,000	$31,500	$36,000	$37,485	$37,485	$37,485	$37,485	$37,485	$37,485	$37,485	$397,395
Cost of sales	0	0	0	0	0	0	0	0	0	0	0	0	0
Gross profit	18,000	22,500	27,000	31,500	36,000	37,485	37,485	37,485	37,485	37,485	37,485	37,485	397,395
EXPENSES													
Operating expenses	29,776	29,776	29,776	29,776	29,776	29,776	29,776	29,776	29,776	29,776	29,776	29,776	357,309
Interest	1,225	1,208	1,191	1,173	1,156	1,138	1,121	1,103	1,085	1,067	1,049	1,031	13,547
Depreciation	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	60,000
Amortization	0	0	0	0	0	0	0	0	0	0	0	0	0
	36,001	35,984	35,967	35,949	35,932	35,914	35,897	35,879	35,861	35,843	35,825	35,807	430,856
Operating income	(18,001)	(13,484)	(8,967)	(4,449)	68	1,571	1,588	1,606	1,624	1,642	1,660	1,678	(33,461)
OTHER INCOME AND EXPENSES													
Gain (loss) on sale of assets	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
Income before taxes	(18,001)	(13,484)	(8,967)	(4,449)	68	1,571	1,588	1,606	1,624	1,642	1,660	1,678	(33,461)
Income taxes	0	0	0	0	0	0	0	0	0	0	0	0	0
Net income	(18,001)	(13,484)	(8,967)	(4,449)	68	1,571	1,588	1,606	1,624	1,642	1,660	1,678	(33,461)
Undistributed earnings-beginning	0	(18,001)	(31,485)	(40,452)	(44,901)	(44,833)	(43,262)	(41,674)	(40,068)	(38,444)	(36,802)	(35,142)	0
Distributions to owners	0	0	0	0	0	0	0	0	0	0	0	0	0
Undistributed earnings-ending	($18,001)	($31,485)	($40,452)	($44,901)	($44,833)	($43,262)	($41,674)	($40,068)	($38,444)	($36,802)	($35,142)	($33,464)	($33,461)

Key Ratios - Oregon Mobile Slaughter Unit

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Debt to Equity	1.50	1.65	1.76	1.82	1.81	1.77	1.72	1.67	1.63	1.58	1.54	1.49
Times Interest Earned	-13.69	-10.16	-6.53	-2.79	1.06	2.38	2.42	2.46	2.5	2.54	2.58	2.63
Net Working Capital	$25,648	$14,019	$6,888	$4,258	$6,126	$9,477	$12,826	$16,176	$19,524	$22,871	$26,215	$29,561
Working Capital To Assets	0.07	0.04	0.02	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
Current Ratio	1.54	1.28	1.13	1.08	1.11	1.17	1.22	1.28	1.34	1.39	1.45	1.51
Quick Ratio	1.54	1.28	1.13	1.08	1.11	1.17	1.22	1.28	1.34	1.39	1.45	1.51
Days Sales Outstanding	14	14	14	14	14	14	14	14	14	14	14	14
Inventory Turnover (month end)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Return On Sales	-100.00%	-59.93%	-33.21%	-14.12%	0.19%	4.19%	4.24%	4.29%	4.33%	4.38%	4.43%	4.48%
Return On Total Assets	-4.89%	-3.81%	-2.61%	-1.32%	0.02%	0.47%	0.47%	0.48%	0.49%	0.50%	0.50%	0.51%
Return On Equity	-12.25%	-10.10%	-7.20%	-3.70%	0.06%	1.29%	1.29%	1.29%	1.28%	1.28%	1.28%	1.28%


INCOME STATEMENT 2004
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DEC
Sales
Operation Expenses
Income Before Taxes

FORECASTED BALANCE SHEET - Oregon Mobile Slaughter Unit
2005

	Actual	*Forecasted*			
	2004	1ST QTR	2ND QTR	3RD QTR	4TH QTR
Assets					
Current Assets					
Cash and cash equivalents	$70,818	$90,323	$101,133	$111,946	$122,761
Accounts Receivable	17,253	17,260	17,260	17,260	17,260
Inventory	0	0	0	0	0
Other current assets	0	0	0	0	0
Total current assets	88,071	107,583	118,393	129,206	140,021
Fixed Assets					
Land	0	0	0	0	0
Buildings	0	0	0	0	0
Equipment	300,000	300,000	300,000	300,000	300,000
	300,000	300,000	300,000	300,000	300,000
Less-accumulated depreciation	60,000	75,000	90,000	105,000	120,000
Total fixed assets	240,000	225,000	210,000	195,000	180,000
Intangible Assets					
Cost	0	0	0	0	0
Less-accumulated amortization	0	0	0	0	0
Total intangible assets	0	0	0	0	0
Other assets	0	0	0	0	0
Total Assets	$328,071	$332,583	$328,393	$324,206	$320,021

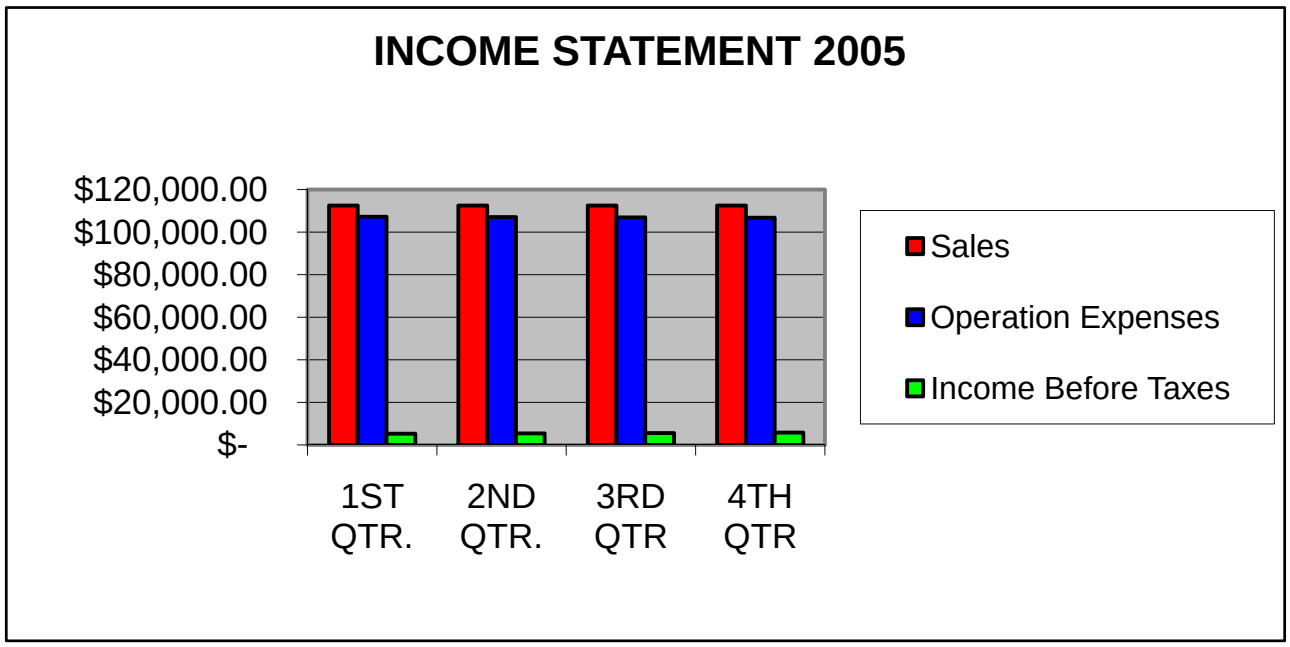
	Actual	*Forecasted*			
Liabilities and Stockholders' Equity	2004	1ST QTR	2ND QTR	3RD QTR	4TH QTR
Current Liabilities					
Accounts payable	$0	$0	$0	$0	$0
Notes payable	0	0	0	0	0
Current portion of long-term debt	38,752	39,434	40,129	40,835	41,554
Income taxes	0	0	0	0	0
Accrued expenses	19,758	28,461	28,461	28,461	28,461
Other current liabilities					
Total current liabilities	58,510	67,895	68,590	69,296	70,015
Non-Current Liabilities					
Long-term debt	138,024	127,906	117,609	107,132	96,470
Deferred income	0	0	0	0	0
Deferred income taxes					
Other long-term liabilities	0	0	0	0	0
Total liabilities	196,534	195,801	186,199	176,428	166,485

Owners' Equity					
Capital stock issued	90,000	90,000	90,000	90,000	90,000
Additional capital invested	75,000	75,000	75,000	75,000	75,000
Undistributed earnings	(33,463)	(28,218)	(22,805)	(17,221)	(11,463)
	131,537	136,782	142,195	147,779	153,537
Total Liabilities and Equity	$328,071	$332,583	$328,394	$324,207	$320,022

Oregon Mobile Slaughter Unit			*Forecasted*		*Total*
	1ST QTR	2ND QTR	3RD QTR	4TH QTR	2005
Sales					
Sales	$112,500	$112,500	$112,500	$112,500	$450,000
Cost of sales	0	0	0	0	0
Gross profit	112,500	112,500	112,500	112,500	450,000
Expenses					
Operating expenses	89,327	89,327	89,327	89,327	357,309
Interest	2,928	2,760	2,589	2,415	10,692
Depreciation	15,000	15,000	15,000	15,000	60,000
Amortization	0	0	0	0	0
	107,255	107,087	106,916	106,742	428,001
Operating income	5,245	5,413	5,584	5,758	21,999
Other income and expenses					
Gain (loss) on sale of assets	0	0	0	0	0
Other (net)	0	0	0	0	0
	0	0	0	0	0
Income before income taxes	5,245	5,413	5,584	5,758	21,999
Income taxes	N/A	N/A	N/A	N/A	0
Net income	5,245	5,413	5,584	5,758	21,999
Undistributed earnings-beginning	(33,463)	(28,218)	(22,805)	(17,221)	(33,463)
Distributions to owners	0	0	0	0	0
Undistributed earnings-ending	($28,218)	($22,805)	($17,221)	($11,463)	($11,464)

NON-ANNUALIZED KEY RATIOS - Oregon Mobile Slaughter Unit
2005

	1ST QTR	2ND QTR	3RD QTR	4TH QTR
Debt to Equity	1.43	1.31	1.19	1.08
Times Interest Earned	2.79	2.96	3.16	3.38
Net Working Capital	$39,688	$49,803	$59,910	$70,006
Working Capital To Assets	0.12	0.15	0.18	0.22
Current Ratio	1.58	1.73	1.86	2
Quick Ratio	1.58	1.73	1.86	2
Days Sales Outstanding	14	14	14	14
Inventory Turnover (quarter end)	#N/A	#N/A	#N/A	#N/A
Return On Sales	4.66%	4.81%	4.96%	5.12%
Return On Total Assets	1.58%	1.65%	1.72%	1.80%
Return On Equity	3.83%	3.81%	3.78%	3.75%



FORECASTED BALANCE SHEET - Oregon Mobile Slaughter Unit
2006

	Actual	*Forecasted*			
	2005	1ST QTR	2ND QTR	3RD QTR	4TH QTR
Assets					
Current Assets					
Cash and cash equivalents	$122,761	$133,578	$144,397	$155,216	$166,039
Accounts Receivable	17,260	17,260	17,260	17,260	17,260
Inventory	0	0	0	0	0
Other current assets	0	0	0	0	0
Total current assets	140,021	150,838	161,657	172,476	183,299
Fixed Assets					
Land	0	0	0	0	0
Buildings	0	0	0	0	0
Equipment	300,000	300,000	300,000	300,000	300,000
	300,000	300,000	300,000	300,000	300,000
Less-accumulated depreciation	120,000	135,000	150,000	165,000	180,000
Total fixed assets	180,000	165,000	150,000	135,000	120,000
Intangible Assets					
Cost	0	0	0	0	0
Less-accumulated amortization	0	0	0	0	0
Total intangible assets	0	0	0	0	0
Other assets	0	0	0	0	0
Total Assets	$320,021	$315,838	$311,657	$307,476	$303,299

	Actual	*Forecasted*			
Liabilities and Stockholders' Equity	2005	1ST QTR	2ND QTR	3RD QTR	4TH QTR
Current Liabilities					
Accounts payable	$0	$0	$0	$0	$0
Notes payable	0	0	0	0	0
Current portion of long-term debt	41,554	42,285	43,029	43,787	44,558
Income taxes	0	0	0	0	0
Accrued expenses	28,461	28,461	28,461	28,461	28,461
Other current liabilities					
Total current liabilities	70,015	70,746	71,490	72,248	73,019
Non-Current Liabilities					
Long-term debt	96,470	85,621	74,581	63,345	51,912
Deferred income	0	0	0	0	0
Deferred income taxes					
Other long-term liabilities	0	0	0	0	0
Total liabilities	166,485	156,367	146,071	135,593	124,931

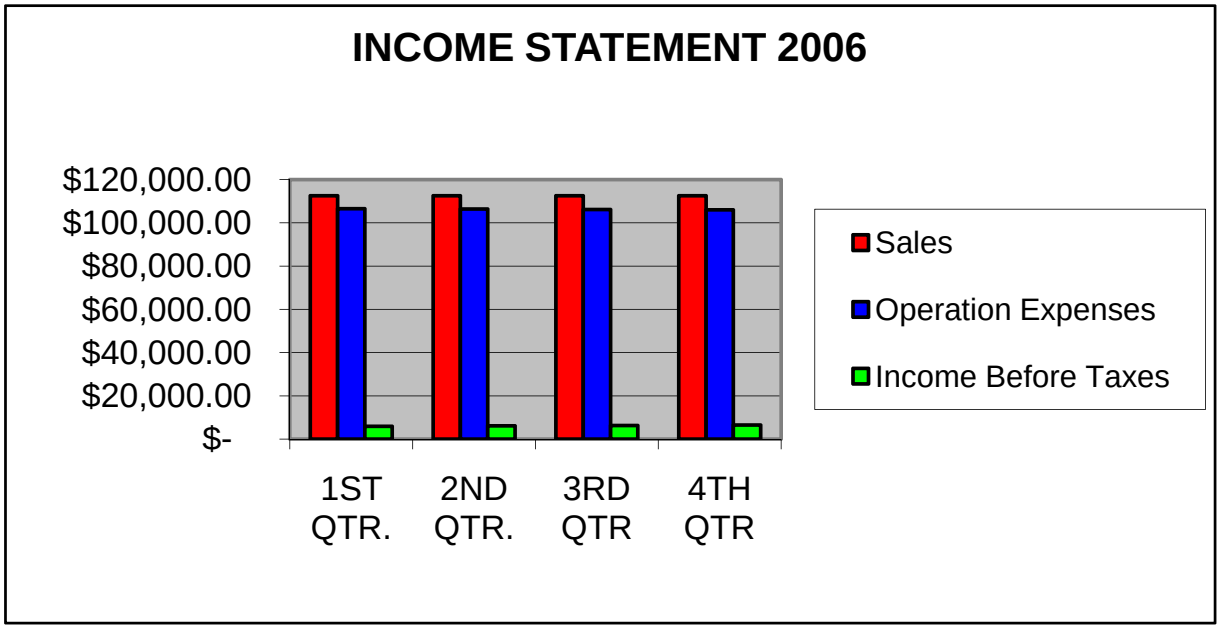
Owners' Equity					
Capital stock issued	90,000	90,000	90,000	90,000	90,000
Additional capital invested	75,000	75,000	75,000	75,000	75,000
Undistributed earnings	(11,464)	(5,529)	586	6,884	13,369
	153,536	159,471	165,586	171,884	178,369
Total Liabilities and Equity	$320,021	$315,838	$311,657	$307,477	$303,300

FORECASTED STATEMENT OF INCOME AND RETAINED EARNINGS
2006

Oregon Mobile Slaughter Unit			*Forecasted*		*Total*
	1ST QTR	2ND QTR	3RD QTR	4TH QTR	2006
Sales					
Sales	$112,500	$112,500	$112,500	$112,500	$450,000
Cost of sales	0	0	0	0	0
Gross profit	112,500	112,500	112,500	112,500	450,000
Expenses					
Operating expenses	89,327	89,327	89,327	89,327	357,309
Interest	2,238	2,058	1,875	1,688	7,859
Depreciation	15,000	15,000	15,000	15,000	60,000
Amortization	0	0	0	0	0
	106,565	106,385	106,202	106,015	425,168
Operating income	5,935	6,115	6,298	6,485	24,832
Other income and expenses					
Gain (loss) on sale of assets	0	0	0	0	0
Other (net)	0	0	0	0	0
	0	0	0	0	0
Income before income taxes	5,935	6,115	6,298	6,485	24,832
Income taxes	N/A	N/A	N/A	N/A	0
Net income	5,935	6,115	6,298	6,485	24,832
Undistributed earnings-beginning	(11,464)	(5,529)	586	6,884	(11,464)
Distributions to owners	0	0	0	0	0
Undistributed earnings-ending	($5,529)	$586	$6,884	$13,369	$13,368

NON-ANNUALIZED KEY RATIOS - Oregon Mobile Slaughter Unit
2006

	1ST QTR	2ND QTR	3RD QTR	4TH QTR
Debt to Equity	0.98	0.88	0.79	0.70
Times Interest Earned	3.65	3.97	4.36	4.84
Net Working Capital	$80,092	$90,167	$100,228	$110,280
Working Capital To Assets	0.25	0.29	0.33	0.36
Current Ratio	2.13	2.26	2.39	2.51
Quick Ratio	2.13	2.26	2.39	2.51
Days Sales Outstanding	14	14	14	14
Inventory Turnover (quarter end)	#N/A	#N/A	#N/A	#N/A
Return On Sales	5.28%	5.44%	5.60%	5.76%
Return On Total Assets	1.88%	1.96%	2.05%	2.14%
Return On Equity	3.72%	3.69%	3.66%	3.64%



FORECASTED BALANCE SHEET - Oregon Mobile Slaughter Unit
2007

	Actual	*Forecasted*			
	2006	1ST QTR	2ND QTR	3RD QTR	4TH QTR
Assets					
Current Assets					
Cash and cash equivalents	$166,039	$176,865	$187,692	$198,521	$209,354
Accounts Receivable	17,260	17,260	17,260	17,260	17,260
Inventory	0	0	0	0	0
Other current assets	0	0	0	0	0
Total current assets	183,299	194,125	204,952	215,781	226,614
Fixed Assets					
Land	0	0	0	0	0
Buildings	0	0	0	0	0
Equipment	300,000	300,000	300,000	300,000	300,000
	300,000	300,000	300,000	300,000	300,000
Less-accumulated depreciation	180,000	195,000	210,000	225,000	240,000
Total fixed assets	120,000	105,000	90,000	75,000	60,000
Intangible Assets					
Cost	0	0	0	0	0
Less-accumulated amortization	0	0	0	0	0
Total intangible assets	0	0	0	0	0
Other assets	0	0	0	0	0
Total Assets	$303,299	$299,125	$294,952	$290,781	$286,614

	Actual	*Forecasted*			
Liabilities and Stockholders' Equity	2006	1ST QTR	2ND QTR	3RD QTR	4TH QTR
Current Liabilities					
Accounts payable	$0	$0	$0	$0	$0
Notes payable	0	0	0	0	0
Current portion of long-term debt	44,558	45,342	46,140	46,952	47,779
Income taxes	0	0	0	0	0
Accrued expenses	28,461	28,461	28,461	28,461	28,461
Other current liabilities					
Total current liabilities	73,019	73,803	74,601	75,413	76,240
Non-Current Liabilities					
Long-term debt	51,912	40,279	28,440	16,393	4,134
Deferred income	0	0	0	0	0
Deferred income taxes					
Other long-term liabilities	0	0	0	0	0
Total liabilities	124,931	114,082	103,041	91,806	80,374

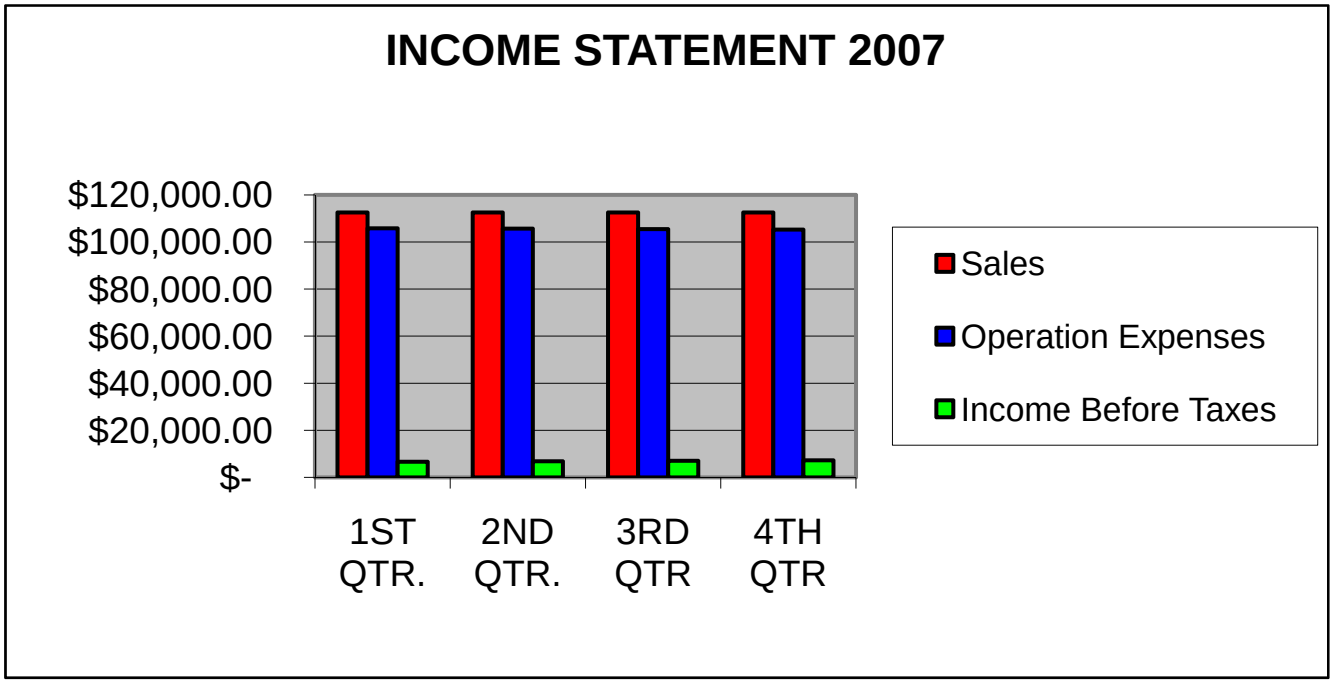
Owners' Equity					
Capital stock issued	90,000	90,000	90,000	90,000	90,000
Additional capital invested	75,000	75,000	75,000	75,000	75,000
Undistributed earnings	13,368	20,043	26,911	33,975	41,240
	178,368	185,043	191,911	198,975	206,240
Total Liabilities and Equity	$303,299	$299,125	$294,952	$290,781	$286,614

FORECASTED STATEMENT OF INCOME AND RETAINED EARNINGS
2007

Oregon Mobile Slaughter Unit			*Forecasted*		*Total*
	1ST QTR	2ND QTR	3RD QTR	4TH QTR	2007
Sales					
Sales	$112,500	$112,500	$112,500	$112,500	$450,000
Cost of sales	0	0	0	0	0
Gross profit	112,500	112,500	112,500	112,500	450,000
Expenses					
Operating expenses	89,327	89,327	89,327	89,327	357,309
Interest	1,498	1,305	1,109	908	4,820
Depreciation	15,000	15,000	15,000	15,000	60,000
Amortization	0	0	0	0	0
	105,825	105,632	105,436	105,235	422,129
Operating income	6,675	6,868	7,064	7,265	27,871
Other income and expenses					
Gain (loss) on sale of assets	0	0	0	0	0
Other (net)	0	0	0	0	0
	0	0	0	0	0
Income before income taxes	6,675	6,868	7,064	7,265	27,871
Income taxes	N/A	N/A	N/A	N/A	0
Net income	6,675	6,868	7,064	7,265	27,871
Undistributed earnings-beginning	13,368	20,043	26,911	33,975	13,368
Distributions to owners	0	0	0	0	0
Undistributed earnings-ending	$20,043	$26,911	$33,975	$41,240	$41,239

NON-ANNUALIZED KEY RATIOS - Oregon Mobile Slaughter Unit
2007

	1ST QTR	2ND QTR	3RD QTR	4TH QTR
Debt to Equity	0.62	0.54	0.46	0.39
Times Interest Earned	5.46	6.26	7.37	9
Net Working Capital	$120,322	$130,351	$140,368	$150,374
Working Capital To Assets	0.4	0.44	0.48	0.52
Current Ratio	2.63	2.75	2.86	2.97
Quick Ratio	2.63	2.75	2.86	2.97
Days Sales Outstanding	14	14	14	14
Inventory Turnover (quarter end)	#N/A	#N/A	#N/A	#N/A
Return On Sales	5.93%	6.10%	6.28%	6.46%
Return On Total Assets	2.23%	2.33%	2.43%	2.53%
Return On Equity	3.61%	3.58%	3.55%	3.52%



FORECASTED BALANCE SHEET - Oregon Mobile Slaughter Unit

2008

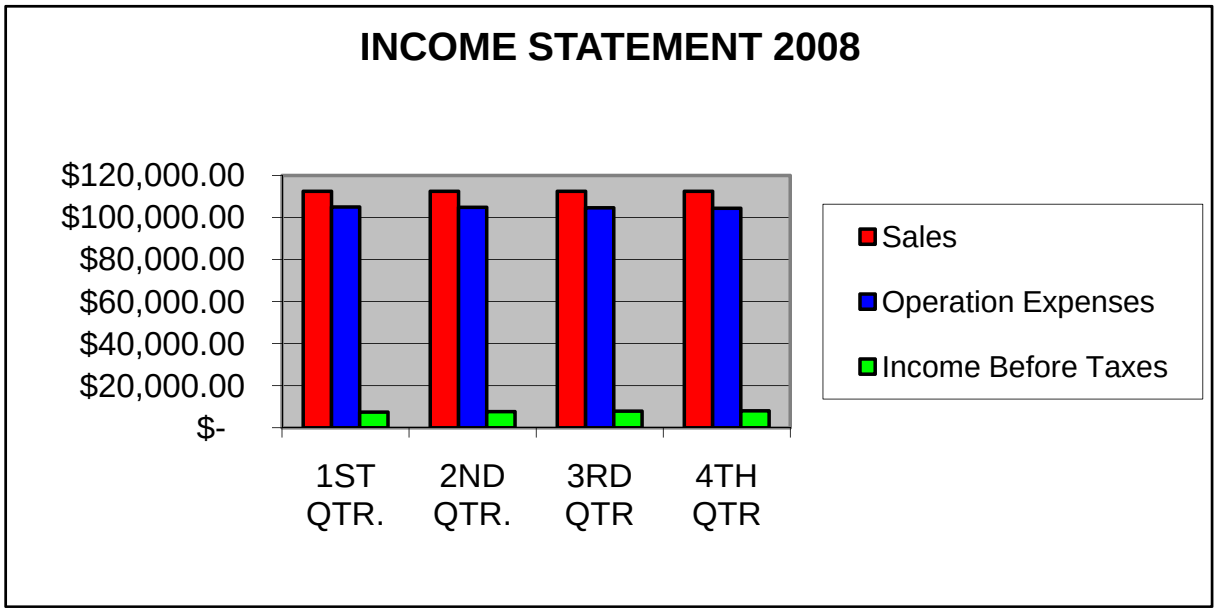
	Actual	*Forecasted*			
	2007	1ST QTR	2ND QTR	3RD QTR	4TH QTR
Assets					
Current Assets					
Cash and cash equivalents	$209,353	$220,187	$231,023	$241,862	$252,704
Accounts Receivable	17,260	17,260	17,260	17,260	17,260
Inventory	0	0	0	0	0
Other current assets	0	0	0	0	0
Total current assets	226,613	237,447	248,283	259,122	269,964
Fixed Assets					
Land	0	0	0	0	0
Buildings	0	0	0	0	0
Equipment	300,000	300,000	300,000	300,000	300,000
	300,000	300,000	300,000	300,000	300,000
Less-accumulated depreciation	240,000	255,000	270,000	285,000	300,000
Total fixed assets	60,000	45,000	30,000	15,000	0
Intangible Assets					
Cost	0	0	0	0	0
Less-accumulated amortization	0	0	0	0	0
Total intangible assets	0	0	0	0	0
Other assets	0	0	0	0	0
Total Assets	$286,613	$282,447	$278,283	$274,122	$269,964

	Actual	*Forecasted*			
Liabilities and Stockholders' Equity	2007	1ST QTR	2ND QTR	3RD QTR	4TH QTR
Current Liabilities					
Accounts payable	$0	$0	$0	$0	$0
Notes payable	0	0	0	0	0
Current portion of long-term debt	47,779	40,279	28,440	16,393	4,134
Income taxes	0	0	0	0	0
Accrued expenses	28,461	28,461	28,461	28,461	28,461
Other current liabilities					
Total current liabilities	76,240	68,740	56,901	44,854	32,595
Non-Current Liabilities					
Long-term debt	4,134	0	0	0	0
Deferred income	0	0	0	0	0
Deferred income taxes					
Other long-term liabilities	0	0	0	0	0
Total liabilities	80,374	68,740	56,901	44,854	32,595

Owners' Equity					
Capital stock issued	90,000	90,000	90,000	90,000	90,000
Additional capital invested	75,000	75,000	75,000	75,000	75,000
Undistributed earnings	41,239	48,707	56,382	64,268	72,369
	206,239	213,707	221,382	229,268	237,369
Total Liabilities and Equity	$286,613	$282,447	$278,283	$274,122	$269,964

NON-ANNUALIZED KEY RATIOS - Oregon Mobile Slaughter Unit
2008

	1ST QTR	2ND QTR	3RD QTR	4TH QTR
Debt to Equity	0.32	0.26	0.20	0.14
Times Interest Earned	11.59	16.41	28.48	113.51
Net Working Capital	$168,707	$191,382	$214,268	$237,369
Working Capital To Assets	0.6	0.69	0.78	0.88
Current Ratio	3.45	4.36	5.78	8.28
Quick Ratio	3.45	4.36	5.78	8.28
Days Sales Outstanding	14	14	14	14
Inventory Turnover (quarter end)	#N/A	#N/A	#N/A	#N/A
Return On Sales	6.64%	6.82%	7.01%	7.20%
Return On Total Assets	2.64%	2.76%	2.88%	3.00%
Return On Equity	3.49%	3.47%	3.44%	3.41%



Conclusion

The conclusions reached in this study are based on the literature reviewed and the surveys and interviews completed in the course of the study.

This data indicates that there is a justification for improved and increased processing capacity for lamb in Oregon and for further market expansion for an Oregon produced and processed product.

The fact that 91% of grocery stores surveyed carry lamb substantiates the presence of an extensive existing market. The fact that several grocery chains require lamb to be in the meat case, particularly to target the high-end buyers, point to the importance of lamb in the meat case. The northwest retail market survey reveals that 53% of stores carry domestic lamb product, 35% carry imported and 3% carry both. Indicated preferences for local and/or domestic product by consumers and meat managers coupled with data that reveals similar retail pricing of domestic and imported product would lead one to speculate that an opportunity exists to capture a share of the market held by imported product.

The current volume of local lamb slaughter does not warrant construction of a high volume facility, but the processing improvements required for a high quality product do justify a facility that would meet these needs. The recommendation of a mobile slaughter unit with the capability of 200 head per week with expansion potential is justifiable.

As is concluded in the budget discussion, there are a variety of business options available to implement this plan and the final choice would be dependent upon the makeup of individuals who would chose to participate. The facility revenue is based solely on a contract processing fee of $45 per head.

This study has also revealed specific topics that should be investigated further to provide more definitive data upon which to base a decision. These areas include rendering and disposal issues, the resulting impacts of stress and shrink from transportation of live lambs and the potential of the ethnic market.

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