

PDABT-986

**WEST BANK:
ACCELERATING ECONOMIC GROWTH
IN THE WEST BANK**

USAID Grant PCE-G-00-97-00047-00

**QUARTERLY REPORT
FOR JULY – DECEMBER 1999**

Submitted by

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January 31, 2000

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**ACCELERATING ECONOMIC GROWTH
IN THE WEST BANK
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LAND O'LAKES, INC.

Quarterly Report

For July 1999 – December 1999

| | |
|------------------------------------|--|
| Dates of project: | June 30, 1997 - July 1, 2000 |
| Total estimated federal funding: | \$1,700,000 |
| Total spent through December 1999: | \$1,456,616 |
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I. Project Summary

This project, entitled "Accelerating Economic Growth in the West Bank," is a \$1.7 million grant from USAID's Global Bureau. Its goal is to generate increased economic return to the rural sector of the West Bank through high-impact, market-driven and community development assistance in the sheep and goat farm-to-market system. Land O'Lakes, Inc., in cooperation with American Near East Refugee Aid (ANERA) and Mid-East Peace Fleece, will work with the sheep and goat producers in the Ramallah, Jericho and Jerusalem Districts. The target group is the rural Palestinian family -- men, women, and children -- who rely on sheep and goat production and marketing for jobs and income.

The project strives to improve the overall profitability of sheep and goat production by increasing the quantity and quality of milk and meat, strengthening community organizations that will further stimulate the sector's economic growth, creating a policy environment conducive to investment and growth, and strengthening domestic marketing activities. By accomplishing this, the project fits in the mission strategy for FY 1996-2000 of "Expanded Economic Opportunities" and will contribute directly to the USAID-West Bank Mission's strategic objective (S.O. 1) as stated in the Congressional Presentation: "*Small and medium producers increase the sustainable and marketable production of goods and services.*"

The project has four main components:

- **Extension Program:** a staff of field agents target 1,000 sheep and goat producers directly and 1,000 indirectly in the target areas with basic production and management information that ultimately increase the market-ability of their products.
- **Improved Genetics:** the project has purchased 50 genetically superior rams from Israel and has established a revolving ram fund at the Arabeh Station in Jenin. Palestinian farmers can purchase the superior rams and breed them with their existing flocks to increase productivity.
- **Cooperative and Community Development:** the project is seeking to work with existing farmer associations and cooperatives to support cooperative and community activities. These activities are anticipated to include self-sustaining services for members such as farm supply stores. As the cooperative and community structures are strengthened, additional, more advanced services will be explored.
- **Innovative Farms:** small capital improvements will be made for farmers who have been identified as "early adopters" of new methods of production. These "innovative farms" serve as realistic models that other farmers in the area can imitate to produce similar improved production results.

II. Implementation and Challenges Encountered

This report covers the period of July through December 1999. The following is a summary of activities during the period.

Extension: During this period, over 565 extension visits reaching 2,708 farmers, with over 200,000 sheep and goats reached. Extension visits focused on:

- treatments for internal and external parasites
- safe methods for spraying the animals
- basic record system including how to calculate the expenses and revenue of the herd
- flushing of ewes
- improving ventilation

As the end of summer neared, agents focused on how to prepare for the coming lambing season. Farmers were advised about the importance of providing sheds for their animals to protect them from the cold of winter. Ultrasound testing was available to farmers through the mobile service unit operated jointly by the project and the Jericho Livestock Cooperative.

Farmers were affected by numerous challenges during the period, especially those in the Jordan Valley. The area continues to suffer from a water shortage. The winter has brought little relief as the area has seen precious little rainfall. As a result, farmers production costs have increased dramatically. FMD also spread through the herds in the Jericho, Nablus and Tubas areas.

Interestingly, a few investors in the livestock sector have begun sheep and goat operations in the project target area. These larger, village-based farms have contacted Land O'Lakes for best practices for starting their farm businesses.

Women's Component: During this period, 934 farms and 174 villages were visited representing the production of approximately 69,000 sheep and goats.

During September, the Land O'Lakes staff gathered members of the Nweimeh Young Women's Cooperative (NYWC). With Land O'Lakes assistance, the Cooperative has submitted information for official registration of their bylaws to the Ministry of Labor. See the first impact report in Appendix A for more on the cooperative. The cooperative seeks to improve incomes of the members. In this regard, they are seeking Land O'Lakes' assistance in alternative wool marketing. Many Bedouin families have stocks of wool inventory due to poor demand. In an effort to expand the market base for wool products and improve incomes of rural families, Land O'Lakes began training women on techniques for producing a wool shoulder bag. The bag would be produced by rural women and sold in tourist markets in the Jericho area. Land O'Lakes developed a market research survey to project potential demand for the product (see Appendix B). The survey revealed the need to develop a more "useful" product that is unique to the market, can easily be identified with the holy sites, and promotes its Palestinian family origin. Peace Fleece, a U.S. importer of wool, is interested in assisting to develop a product that

would be jointly produced by Palestinians and Israelis. Given limited funding, this exploration will be put on hold.

Improved Genetics: A second round of rams were purchased and sold during the period. Fifty rams were purchased from the Kebuts Ein Haround and transported to the Arabeh Awassi Sheep Station in Jenin. The Land O'Lakes program is tracking mating results of the distributed rams and will report these results during the next period. Land O'Lakes is working out an arrangement with An Najah University to establish a small genetics program there. This genetics program would be a revolving ram program and involve only animal, not cash, transfers.

Pictured below: The Land O'Lakes agents and the farmers check the rams that were selected to be sold according to the lottery system that was used for selling the selected Awassi Rams in Arabeh station in Jenin.



Cooperative and Community Development: Much of Land O'Lakes' work during the quarter was to stimulate action on behalf of the non-functional cooperatives. The Land O'Lakes staff continues to attend monthly meetings with the Ministry of Agriculture and various local Palestinian organizations who are active in the field of agriculture. Noteworthy work during this period included:

Jericho Livestock Cooperative: Land O'Lakes is jointly operating a mobile service unit in the Jericho area with this cooperative. A technical intervention is planned for July 1999 to produce a working business plan that will determine whether or not the venture can serve as an income stream for the cooperative on a long-term basis. Land O'Lakes continues to use the service unit for ultra sound early pregnancy testing and informational/extension services for area farmer. Response from cooperative managers to electing a new board has been weak. (See Appendix C for report).

Innovative Farms: In September, a group of 12 farmers from Nablus were brought to the innovative farm in Ramallah. Land O'Lakes used the opportunity to convince traditional farmers of the importance of changing their production techniques in rearing animals. Some of the participants have started implementing the animal sheds in order to decrease mortality. The project will conduct additional innovative farm trainings during the next period. See Appendix A for impact reports on the innovative farm and how farmers have incorporated what they have learned into their farm practices.

Pictured below are some of the first generation of selected Awassi rams as a result of Land O'Lakes genetic improvement program.

“As Father As Son”



III. Cooperation with Partners and Other Implementers

ANERA: ANERA continues to informally advise Land O'Lakes on various cooperative and agriculturally related nuances in the West Bank. Land O'Lakes periodically attends ANERA's staff meetings for coordination purposes.

Peace Fleece: Peace Fleece continues to be an important collaborator on the project giving input and advice.

UNDP: Land O'Lakes continues to include leaflets, developed by UNDP, for inclusion in our farmer extension program. The leaflets include topics such as how to handle aborted fetuses and are given to farmers during the Land O'Lakes field trips to the Arabeh Sheep Station.

Palestinian Agricultural Relief Committee: Land O'Lakes and PARC meet periodically for technical and informational purposes.

IV. Changes to Project Plan

Mobile Service Unit: The MSU was evaluated in July for sustainability. After running a pro forma profit-and-loss statement based on the Jericho Livestock Cooperatives goals and objectives, the project concluded that the MSU cannot be sustainable without significant market changes (see Appendix D). Because the MSU is operated by the Land O'Lakes field agents and provides our agents with transportation to remote areas, it will continue to be operated in order to help our agents facilitate transportation.

V. Monitoring and Evaluation System

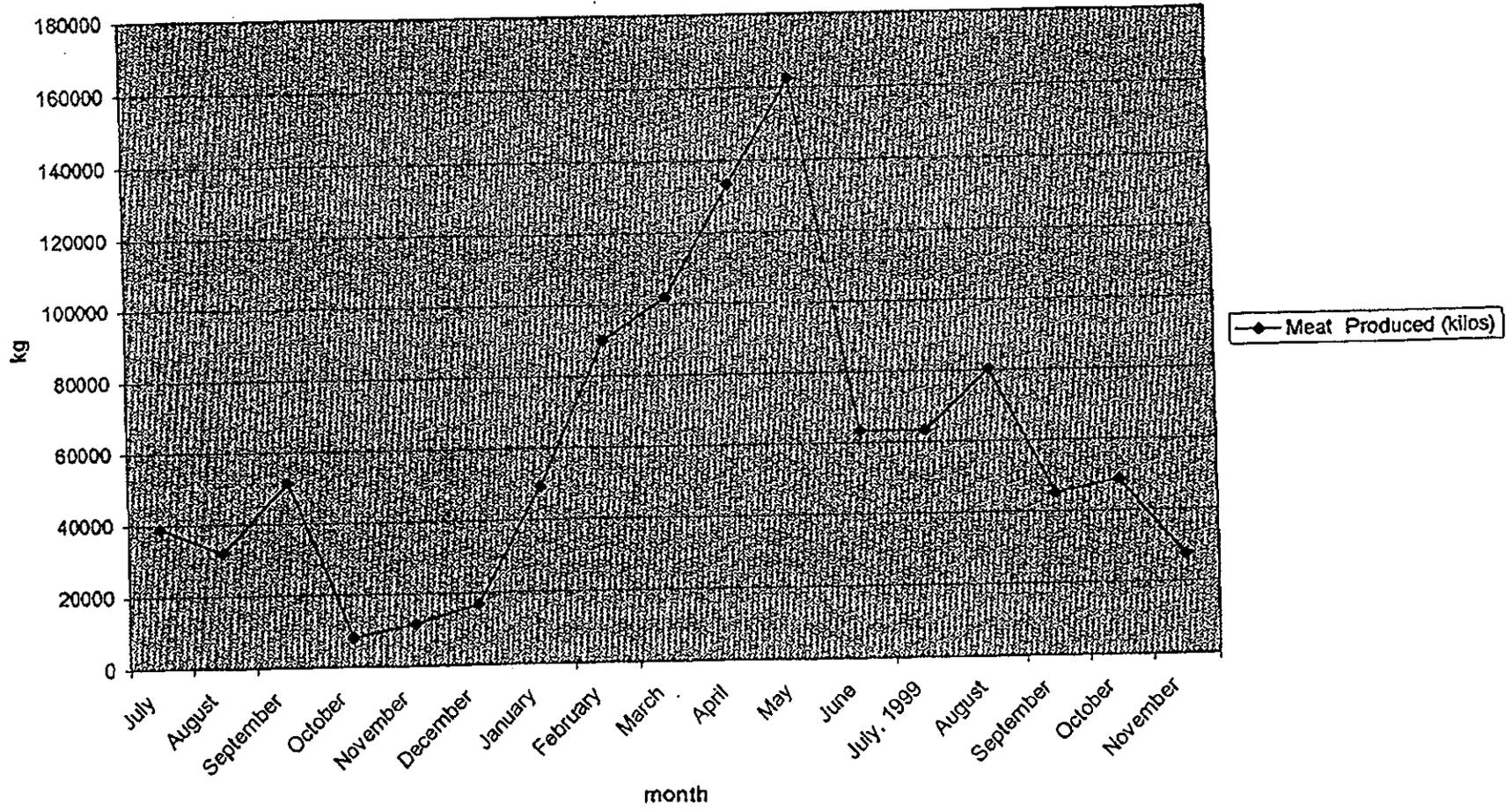
The monitoring and evaluation system was put into place in July, 1998. The eight field agents have recruited 30 participants each for a total representative sample of 240 farmers. Field agents collect and record monthly data concerning specific multiple variables. Ongoing analysis of these variables over time (during the life of the project) enhances Land O'Lakes' ability to measure change in *quantifiable* terms and in the context of achieving anticipated project results.

To date, the project has generated results that clearly contribute to USAID-West Bank Mission's strategic goal (S.O. 1) of "*Economic growth through the enhancement of enterprise development.*" The results are illustrated below and are based on comparisons between June – August 1998 and June – August 1999:

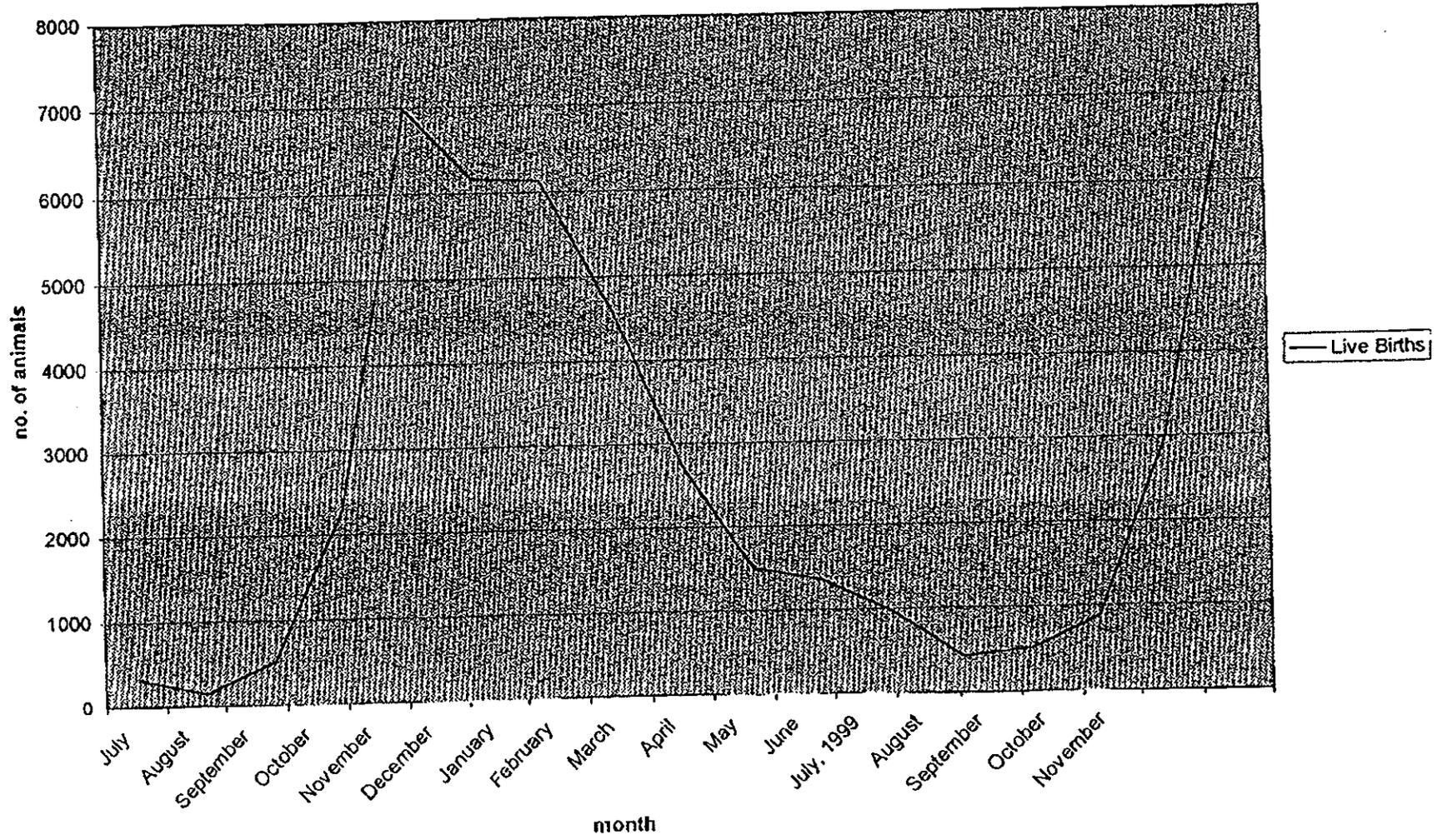
- Mortality rate decreased from 27% to 4%. This amounts to \$204,970 of additional income over 5 years for families monitored by the project;
- Milk yield increased an average of 24%, representing an additional \$11,635 in income for families monitored by the project;
- Meat production increased an average of 42%. This represents roughly \$235,764 for families monitored by the project;
- The Nweimeh Young Women's Cooperative, located in Jordan Valley, was formed. With the assistance of Land O'Lakes, the women are producing unique souvenirs from wool for the tourist market to increase income of rural families.
- 400 farmers were trained at the Jenin Awassi Research Station on the importance of improved genetics in productivity of herds. Not only were all 47 rams distributed but participants and neighbors noticed the difference in size of the offspring and are requesting that more rams be made available. This change in mind-set is important to increasing the quantity of milk being produced. The table on the next page shows how the Awassi rams have performed. For an impact report about the improved genetics on one farm, refer to the report entitled "Ram from Demonstration Farm Yields Better Lambs" in Appendix A.

| LAND OF LAKES, PALESTINE | | | | | | |
|-------------------------------------|---|----------------------|-----------|--------------|----------------------------------|-------------------|
| GENETIC IMPROVEMENT PROGRAM | | | | | | |
| PERFORMANCE OF SELECTED AWASSI RAMS | | | | | | |
| Jul-99 | | | | | | |
| NO. | FARMER'S NAME | DISTRICT & VILLAGE | RAM NO. | SIZE OF HERD | NUMBER OF EWES SERVED BY THE RAM | % OF INSEMINATION |
| 1 | TAYSEER YASSEN | NABLUS - ASERAH | 4479 | 0 | 0 | 0 |
| 2 | | | 3717 | | | |
| 3 | OQAB ABU KHARBESH | JERICHO - DUKE | 5186 | 60 | 40 | 67% |
| 4 | IBRAHEM ABU KHARBESH | JERICHO - DUKE | 4426/2 | 50 | 20 | 40 |
| | MOHAMED RASHAYDEH | JERICHO - DUKE | 3940 | 300 | 35 | 11.6 |
| 6 | DAWOD RASHAYDEH | JERICHO - OJA | 5076/2 | 100 | 45 | 45 |
| 7 | KHALEEL A. SOBOH | JERUSALEM - N. MOSA | 5699 | 150 | 40 | 26.6 |
| 8 | | | 5278 | | | |
| 9 | YUSEF ABU SARHAN | BETHLEHEM - OBEDEYEH | 5383/1 | 40 | 20 | 50 |
| 10 | KHALEEL ALHADALEN | JERUSALEM - SAWAHREH | 4837 | 250 | 60 | 24 |
| 11 | | | 4847 | | | |
| 12 | KHALEEL AFNAN | JERUSALEM - SAWAHREH | 4294 | 150 | 15 | 10 |
| 13 | MOHAMAD MOSA HASSAN | BETHLEHEM | 4197/1 | 250 | 70 | 28 |
| 14 | | | 5525 | | | |
| 15 | | | 4933 | | | |
| 16 | MOHAMAD MSALAM | BETHLEHEM | 4613 | 250 | 40 | 16 |
| 17 | | | 4197/2 | | | |
| 18 | MOHAMAD AFNAN | BETHLEHEM | 5084 | 100 | 25 | 25 |
| 19 | MODAHED WAHDAN | RAMALLAH - RANTEES | 5076/1 | 25 | 7 | 28 |
| 20 | HASSAN REZEQ | RAMALLAH - RANTEES | 4336 | 370 | 100 | 27 |
| 21 | | | 5619 | | | |
| 22 | ATEF HUSSEIN | RAMALLAH - RANTEES | 5060 | 80 | 80 | 100 |
| 23 | MOHAMAD ABUDAHUQ | RAMALLAH | 5520 | 300 | 70 | 23 |
| 24 | | | 4334 | | | |
| 25 | | | 5528 | | | |
| 26 | AREF M. KA'ABNEH | JERUSALEM - ANATA | 5528/2 | 80 | 60 | 75 |
| 27 | KHALEEL ABUDAHUQ | JERUSALEM - ANATA | 3988 | 60 | 200 | 30 |
| 28 | MOHAMAD MANASRAH | HEBRON - B. NA'EM | 3833 | 175 | 34 | 19.4 |
| 29 | KHALED H. FARAJ | RAMALLAH - ALJEEB | 4484 | 50 | 30 | 60 |
| 30 | GAZI FAWAZ IBRAHEEM | JENIN - ARABEH | 4423/1 | 120 | 50 | 41.6 |
| 31 | KAYED YUNES | RAMALLAH - RAMMON | 5235 | 60 | 25 | 41.6 |
| 32 | AHMED N. ABU ARAH | JENIN - AQABA | 3870 | 160 | 40 | 25 |
| 33 | KAMEL MRAWEH | JENIN - ARABEH | 4334/1 | 55 | 35 | 63.6 |
| 34 | AHMED M. SALEH | JENIN - K. RA'E | 5367 | 95 | 45 | 47.3 |
| 35 | MOSTAFA M. JAWABREH | JENIN - K. RA'E | 4764 | 37 | 21 | 56.7 |
| 36 | SO'OD HAMDALLAH | RAMALLAH - MOKHMAS | 5386 | 80 | 30 | 37.5 |
| 37 | SULAIMAN AN - NAJAB | RAMALLAH - JEBIA | 4417 | 150 | 60 | 40 |
| 38 | | | 4426/1 | | | |
| 39 | ADNAN ALI ESSA | HEBRON - B. NAEM | 4423/1 | 170 | 35 | 20.5 |
| 40 | MAJED MOSSA KHALEEL | HEBRON - B. NAEM | 4608 | 350 | 90 | 25.7 |
| 41 | | | 4676 | | | |
| 42 | SHOQRI JAMOS | NABLUS - NASAREYEH | 4418 | 50 | 22 | 44 |
| 43 | | | 4708 | | | |
| 44 | SHOQRI JAMOS | NABLUS - NASAREYEH | 5039 | 20 | 9 | 45 |
| 45 | AHMED AL ADARAH | NABLUS - NASAREYEH | 5447 | 153 | 21 | 13.7 |
| 46 | AN-NAJAH UNIVERSITY | TULKAREM | 2800 | | | |
| 47 | | | 5366 | 0 | 0 | 0 |
| 48 | | | 4931 | | | |
| 49 | WAHIB TARAZI | RAMALLAH | 5311 | 0 | 0 | 0 |
| 50 | HUMOUD YUNIS | RAMMON | 5321 | 120 | 17 | 14.1 |
| | TOTAL | | 50 | 4600 | 1351 | 29.37 |
| | *** 50 EWES WERE INSEMINATED (ARTIFICIALLY) BY COLLECTING SEMEN FROM LOL RAMS IN ARABEH STATION. THE NAME OF THE FARMER IS AHMED AL-ADARAH FROM AN-NASAREYEH IN NABLUS. | | | | | |

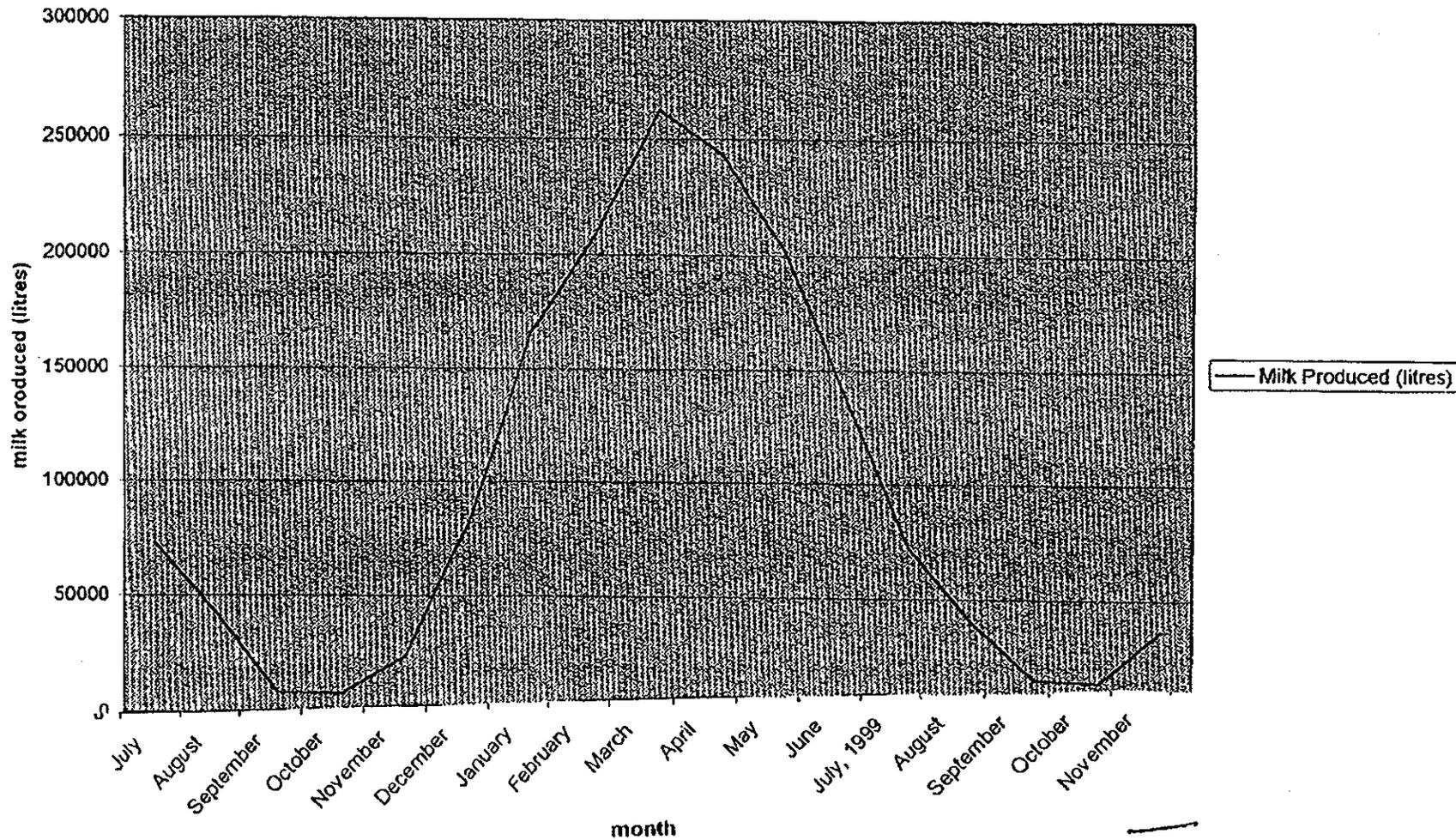
Meat Produced (kilos)



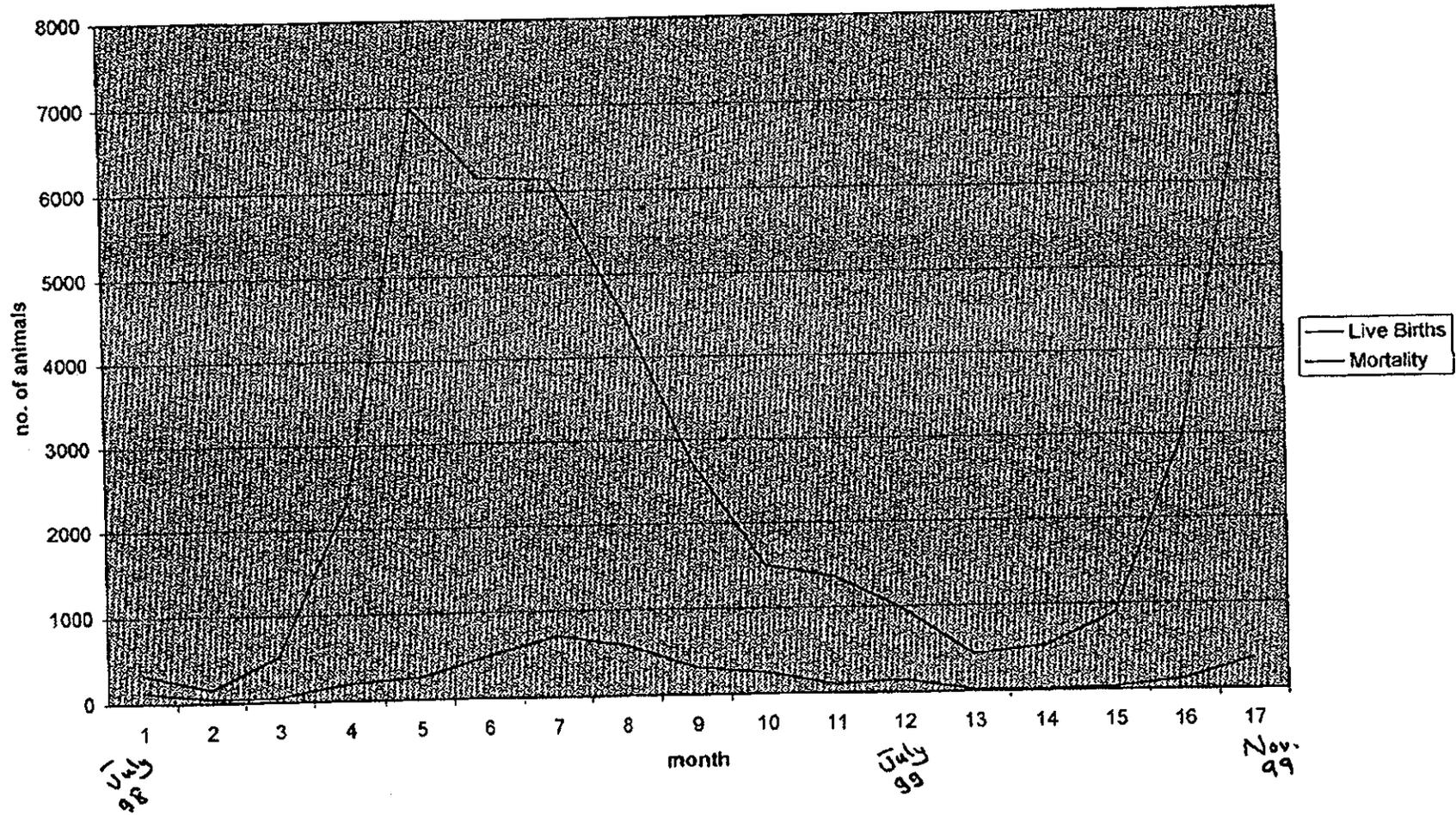
Live Births



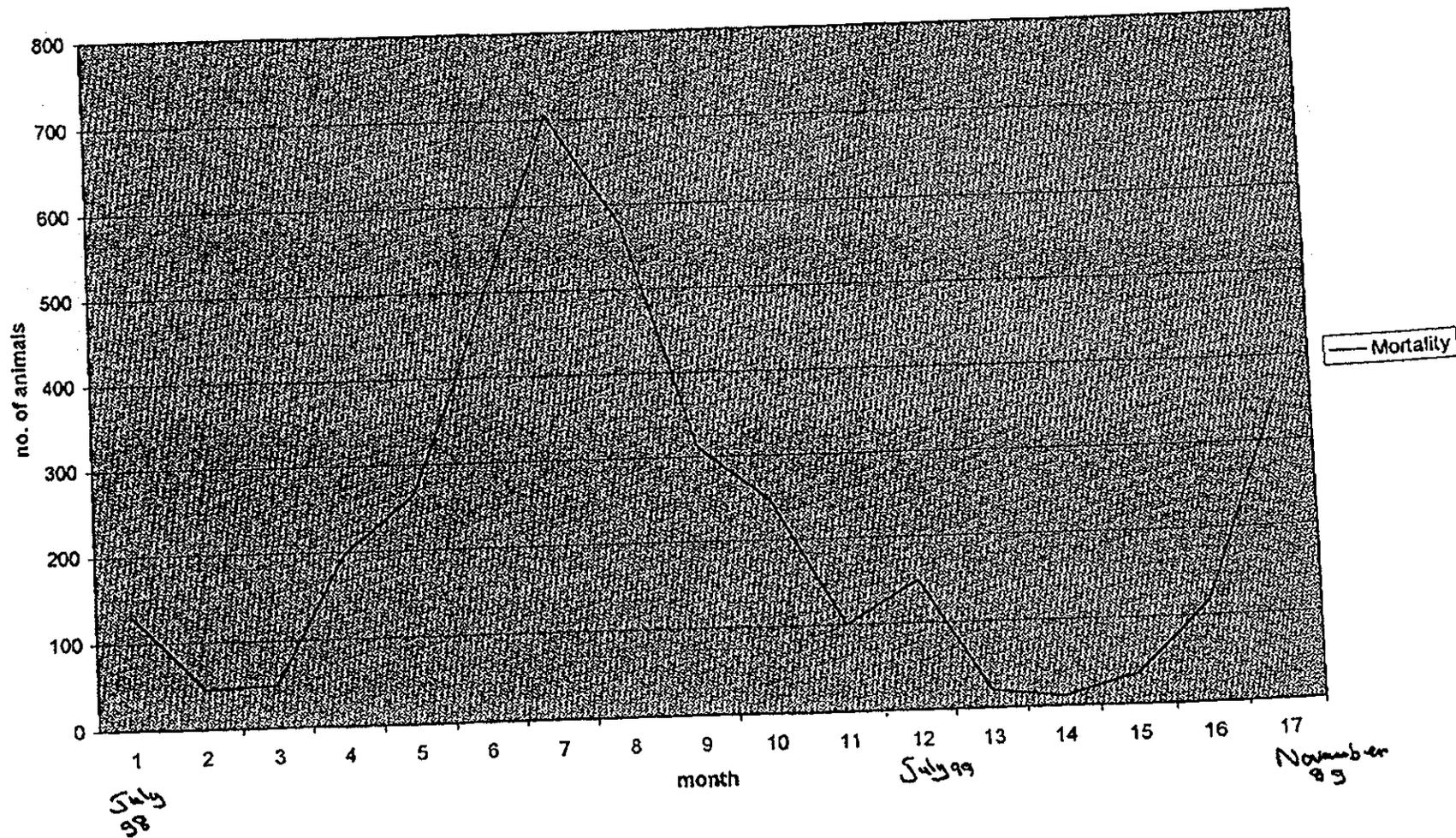
Milk Produced (litres)



live birth vs mortality



Mortality



h1

July 98

July 99

November 99

VI. Plans for Next Quarter

Extension: Land O'Lakes will continue to provide extension assistance to farmers in the project. Assistance will focus on lamb and ram management as well as proper feeding practices.

Women's Component: Land O'Lakes will continue to target a group of women for training on proper feeding, milking and dairy processing. Training will also be provided in the area of cooperative and association development as the women at the Nweimeh Young Women's Cooperative will need assistance to move their organization forward.

Improved Genetics: Land O'Lakes will track mating results of rams sold to farmers and report on this during the next quarterly report.

Cooperative and Community Development: Land O'Lakes will continue to provide assistance to cooperatives that demonstrate they have a commitment to providing needed services to members in their areas. Special emphasis will be given to women's associations that generate income for their members.

Innovative Farms: Land O'Lakes will track existing innovative farms for their impact on the community.

APPENDIX A

IMPACT REPORTS

Nweimeh Young Women's Cooperative Created

Nweimeh village is four kilometers north of Jericho, with nearly 1000 people, 60% of them farmers, and nearly as many goats and sheep: 950 head. As the agents began visiting the farmers from home to home in November 1998, they discovered that women do all the work related to the farms. Through regular visits to the farmers, the agents provided them with a lot of information about raising sheep and goats and hygienic methods of milk processing. Then the agents gathered the women in groups. A group of eight (8) women from the Nweimeh village participated in a trip to the project's Arabeh station for demonstrations on rearing Awassi sheep.

The field agents presented three workshops, in which they introduced to them women field agents from the Ministry of Agriculture and Palestinian Agriculture Relief Committee (PARC). At this time, the West Bank project field agents explained the importance of having a cooperative for the women in Nweimeh village and about the benefits women can gain from it. The women created the Nweimeh Young Women's Cooperative (NYWC).

In July 1999, the wool manufacturing project began, wherein nine women participating in wool fabrication training. PARC will use one of the women who took the wool training as a trainer for a group of women in their project. Reference the story in this report entitled "Wool Fabrication Training Is a Step Towards a Market for Wool."

On October 10, 1999, the field agents accompanied Martha Cashman, Vice President of International Development at Land O'Lakes; Cheryl Yasis, Senior Project Officer at Land O'Lakes; and Dr. Wahib Tarazi, West Bank Project Director, to the Nweimeh Young Women's Cooperative (NYWC), where they discussed the goals and future activities of the cooperative with its board of directors. There are 42 members in NYWC; the board consists of 7 women. The cooperative's license is in process with the Ministry of Labor.

The Palestine Ministry of Agriculture has promised to sell them ten (10) cells of bees at a discount of 40%. Meanwhile, the women are taking a course in bee-raising.

✓ **Women are the raisers of sheep and goats**

✓ **Nweimeh village women receive training in wool and in co-ops**

✓ **Village women create their own cooperative**

✓ **Cooperative license is in registration process**

✓ **Women branch out to bee-raising**

**Wool Fabrication Training Is a Step Towards a Market
for Wool**

Wool is a secondary sheep product that has no market. One of the goals of this project is to provide women with an income and find a market for their wool. To this end, Land O'Lakes planned for a wool fabrication training program for women.

The women extension agents prepared a training course for sixteen (16) women from the Oja and Nweimeh villages near Jericho. The training course began at the end of July and ended in August. The women who attended the training can prepare many beautiful items from wool such as carpets, bags, and gifts. The Palestinian Agricultural Relief Committee (PARC), the biggest Palestinian NGO working in the agricultural sector with farmers, has an active women's extension department in the Jericho district. At Land O'Lakes invitation, they visited the training activities in Jericho. When they saw the women's wool training course, they were surprised and appreciative. After two days, the head of the women's extension department in PARC in Jericho decided to arrange a similar wool training course and to cover all the expenses. They asked for a trainer, who will be chosen from one of the women who took the wool fabrication training course.

✓ **Problem: Wool has no market.**

✓ **Land O'Lakes women extension agents conduct wool fabrication course.**

✓ **PARC to conduct similar course, using LOL training participant as teacher**

West Bank Project Land O'Lakes

IMPACT!

Three Lambing Seasons in Two Years Increase Profits

Mahmoud Jermi is a farmer from Zbaidat village, 35 kilometers north of Jericho. He raises about 80 ewes and the biggest problem that he faced was the low percentage of newborns within his flock, due to low fertility. The paucity of newborn lambs reflected negatively on sheep income, which made the farmer think seriously about selling his sheep.

The low percentage of newborn lambs was a reflection of poor feeding practices and the bad health of the ewes, in other words, poor management inside the farm. To solve those problems, in the summer of 1998, a Land O'Lakes field agent designed an effective feeding program, taking into consideration the available feeding materials with the lowest possible prices (the high price of feed is one of the main problems that face the Palestinian breeders). After two months of work with this farmer, the health of Mahmoud's flock had improved.

To raise the percentage of lambs born in the season – that is, to increase the numbers of lambs born in the season through improved fertility – the field agent convinced the farmer to use artificial hormones and intravaginal sponges outside of the reproductive season. This causes the ewes to get pregnant in the spring and late summer seasons, thereby getting more pregnancies and more lambs during the year.

The farmer practiced this method on 50 of his ewes after preparing them for insemination using the flushing program. The farmer followed the instructions completely, and, after 40 days, the field agent checked pregnancy for the ewes by using ultra sound. Thirty-seven (37) of the ewes got pregnant, which means that the farmer got three lambing seasons during two years. In other words, Mahmoud's income increased when he solved one of the most important problems he faced.

- ✓ **Problem: Low fertility among ewes.**

- ✓ **Field agent advises on methods to improve farm management.**

- ✓ **Flock health improves.**

- ✓ **Methods to enhance fertility implemented.**

- ✓ **Three lambing seasons in two years.**

- ✓ **Income increased.**

Profitability Increased by Influential Sheep and Goat Farmer

Mohammed Bany Odeh is from Marj-Najah village, 50 kilometers north of Jericho, in the Jordan Valley area. Mr. Odeh is 65 years old and has about 150 head of sheep and goats, and 15 head of cows. When the Land O'Lakes field agents started visiting him in June 1998, they considered him as their "permanent address" because he is a known leader to the farmers, which facilitates work with other farmers in the same village.

At that time, his farm had a high percentage of mortality, low productivity, old and sick animals, and other problems, as do most of the farmers in Palestine. First, the agents helped him identify the problems he faced in his farm: high mortality, low productivity, and no culling system. After several visits, he started to improve his farm and his flock.

The farmer had no vaccination program. After explaining it to him, the agents helped him by taking the veterinary team more than four times to his farm to administer vaccinations. Since then, the mortality rate has lowered.

Mr. Odeh participated in a trip to Arabeh farm for demonstrations on rearing and selecting Awassi rams. After the extension work and the visit to Arabeh farm, he was so convinced that progressive practices would lead to more profit that he made improvements to his farm. He built more barns on his farm, with more ventilation and isolation places for lambs and kids.

From November 1998 till August 1999, there were 153 live-born lambs and kids. Of those, seven (7) of the lambs and kids died, a mortality of about five (5) percent.

Another improvement is the culling system. When the field agents started to work with him, he had 150 sheep and goats. Now Mr. Odeh has 96 healthy and good-producing sheep and goats.

After implementing the ideas introduced to him, he has more profit due to the reduction of mortality and use of the culling system, which decreased the feed, vaccination and treatment costs.

✓ **Problems: High sheep and goat mortality, low productivity.**

✓ **Mortality rate lowered.**

✓ **Production increased.**

✓ **Profitability increased.**

✓ **Costs decreased.**

West Bank Project Land O'Lakes

IMPACT!

Farmer Begins Raising Sheep to Provide for Family

This story is about a man that Salah Abu Eishah, a West Bank project field agent, met by chance in the summer of 1999. His name is Ra'ef Mahajneh, a 51-year-old man from Marj Na'jeh, 40 kilometers north of Jericho. He suffered an attack last summer that caused partial paralysis to the right part of his body, which made him unable to work to provide for his large family.

✓ **Family man incapacitated**

The field agent advised Ra'ef to buy some sheep and goats and have his children take care of them. The revenue from this operation would help Ra'ef's family in their difficult life. He agreed, but the problem was that his treatment consumes all of his money. This stood as an obstacle to beginning work on the project. However, the field agents found a farmer from the same village who agreed to sell Ra'ef twenty-one (21) goats on credit for one year. An effective program was put into place, including:

✓ **Field agent advises raising goats**

- An effective feeding program.
- Healthy practices inside the farms.
- Use of intravaginal sponges and artificial hormones out of reproductive season.
- A continuous and fruitful extension program.

✓ **21 goats bought on credit**

Ra'ef followed the advice and practiced the program completely. In October 1999, sixteen (16) kids were born from ten (10) goats, and the others were checked for pregnancy by an ultra-sound device. Just two goats were not pregnant, and the decision was to cull them and sell them for meat. The others were pregnant (more than three months). More than ten (10) kids are expected to born within two months, at the most. The revenue that came from selling the offspring and milk (cheese) will be used for paying debt.

Simple calculations yield the following favorable results:

The actual and expected costs for Ra'ef Mahjney's new project, from the beginning until February 2000, will be as follows:

Goats' price: $21 \times \$85 = \1785

Operational costs for 5 months (the end of season): $1.2 \text{ kg feed/day} \times 21 \text{ goat} \times 150 \text{ days} \times \text{price per ton of feed} = \$680.$

Other miscellaneous costs = \$80

Total costs will be **\$2,545.**

The actual and expected revenue for the project:

Kids (meat): 16 kids already born, in addition to more than ten (10) that are expected to be born within the coming two months (5% mortality rate taken into consideration). The price of 26 kids immediately after weaning will be 26 kids x \$90 = \$2,340 (the cost of rearing was calculated above and there will be no additional costs). In addition to that, two goats which are not pregnant will be sold for meat at \$110 each (\$220). As of the writing of this report, the revenue from selling milk (cheese) is about \$250. The total actual and expected revenue will be \$2,830.

With these results, Ra'ef will be able to pay the debt on time from his project revenue and after that he will be able to gain more than \$300 monthly. This will solve his problem and provide the money he needs for his family.

✓ **Revenue expected to exceed expenses**

✓ **New sheep farmer able to pay debts and provide for family**

Farmer Reduces Kid Goat Mortality Rate by 19%

Salameh Abu Kharbeesh (Abu Nayef) is a farmer from Ain Al Oja Village 12 kilometers north of Jericho City. Abu Nayef is 40 years old and has 150 head of goats. Agent Asa'd Abu Saleh has visited Abu Nayef since the Land O'Lakes project opened in the West Bank. When he made base line surveys in the first visits to Abu Nayef and other farmers in his neighborhood, he saw that the farmers are suffering from a high mortality rate of more than 35%, a decrease in milk production, and a decrease in the fertility of the animals. The agent worked with Abu Nayef and other farmers to decrease the mortality rate by following good management practices on the farm. He explained the importance of increasing the nutrition of the animals in both quality and quantity (balanced feed) to increase fertility, of disinfecting the navel of the new birth, and of ensuring that the kids suckle the colostrum. He stressed the importance of making isolated and separated places for the delivery of animals and the kids to prevent crowding.

Abu Nayef thought that if he followed this advice, it would be difficult and would cost him too much money. But one day, Abu Nayef and other farmers traveled to Alduke village 7 kilometers west of Jericho City to see the innovative farm that the project had built at Abu Omer. There they saw that the mortality rate had decreased at Abu Omer's farm to 3%. Abu was convinced of the importance of creating isolated and separated places for animals in the kid delivery season.

Because Abu Nayef is a Bedouin farmer and can not build a permanent innovative farm, he adapted the idea and made temporary isolated and separated places in his farm. In addition, Abu Nayef replaced 25% of his flock.

Two years ago, the mortality rate at Abu Nayef's farm reached 35%, but when he followed the field agent's advice and instructions, the mortality rate decreased to 16%. He saved 19% of his kids, which that means more meat produced – more profit.

- ✓ **Farmer has 35% goat mortality rate, decreased production.**
- ✓ **Farmer visits demonstration farm with 3% mortality rate**
- ✓ **Farmer replaces 25% of flock and creates isolated and separated places for the kidding season**
- ✓ **Farmer saves 19% of kids, for more profit**

West Bank Project Land O'Lakes

IMPACT!

Lamb Mortality Rate Reduced from 17% to 5%-7%

Sheep and goats dominate the hills of the West Bank and more than half of the families live directly on the income from them. The family of Mr. Ibrahim Abu Al-Kbash, 45 years old, is one of those families who depend on sheep as their source of income. The conditions on his 300-sheep farm in Frosh Beit Djan, Jordan Valley, at the start of technical assistance interventions were:

- Lack of technical information on sheep production practices.
- Poor veterinarian and artificial insemination services.
- Mortality in newborn animals of 17%, some of it caused by mismanagement of the flock.
- An absence of financial records, which made the calculation of profitability very difficult.

After the Land O'Lakes West Bank project in sheep and goats started, Mr. Abu Al-Kbash was one of the farmers whom the field agents visited. They studied his individual problems and how to solve them. They gave him the Lamb Booklet and Calendar which included information, stated in a simple manner, needed by the farmer for achieving good production. The agents helped him to understand the brochure and stimulated him to incorporate new practices such as:

- disinfecting the navel of newborn animals,
- isolating the lambs and the mothers four to six days to allow them to take all the colostrum,
- cleaning the newborn daily, and
- controlling external parasites.

The agents emphasized that a vaccination program is important. The treatment of sick animals should be done by a veterinarian and the dead or aborted animals taken to the veterinary department to be anatomized.

The mortality rate of lambs had been 17%, which meant that 54 lambs died yearly, a loss of 5400 JD: $54 \times 100 \text{ JD} = 5400 \text{ JD}$ (Jordan Dinar = 1.40 US\$). The improved farm management practices of isolation, vaccinating, proper feeding, and other items

✓ Lamb mortality rate of 17% at start of program

✓ Absence of financial records

✓ Lamb mortality decreased to 5%-7%

played important roles in decreasing the mortality rate to 5%-7%, meaning 15 lambs died (1500 JD). The simple calculation below shows a gain of 3900 JD.

| | |
|------------|-------------|
| Before | 5400 JD |
| - After | <u>1500</u> |
| Difference | 3900 JD |

Financial records are important to use on a farm. After the field agents received training in financial management at Ber zit University C.E., they presented the idea of a simple record system. The farmer daily registers all transactions related to the farm. He records expenses for anything connected to animals and the revenues from selling any products, with the net profit being the difference between expenses and revenues. The West Bank project aims to help make the net profit the best it can be.

✓ **Farmer institutes records system to track profitability**

Ram from Demonstration Farm Yields Better Lambs

Ahmad Abu Arra'a is a 48-year-old farmer from Aqaba village four kilometers north of Tubas in the north end of West Bank who has 71 head of sheep and goats. Previously, Mr. Abu Arra'a, an old member of the Sheep Breeders Association (SBA) in Nablus-Palestine, had only five (5) head of sheep. After he heard about Land O'Lakes' efforts within the association, he bought 40 head of sheep and contacted the field agents at Land O'Lakes for extension help. The agents began visiting him in Aqaba village, discussing with him the problems farmers usually face, such as high mortality, spontaneous abortions, and old and sick animals (low productivity animals).

After several agent visits to his farm, Abu Arra'a participated in a trip to ArabeH station for demonstrations on rearing and selecting Awassi sheep. On May 20, 1999, Land O'Lakes field agents Salah and Dawwas accompanied Abu Arra'a to buy an Awassi ram from ArabeH station. The ram he bought has the following heredity:

- Mother's productivity: 750-kg milk per year
- Grandmother's productivity: 677-kg milk per year

Before he bought the new Awassi ram, his ewes had already been artificially inseminated. He bought 13 more ewes, which the Awassi ram inseminated. On October 10, the first generation from the Awassi ram was born. There is a great difference between the lambs that belong to the Awassi ram and those produced from artificial insemination. Artificial insemination had been done with the semen from the Balady rams inside the farms. There is great difference in growth rates between the two, with the Awassi-bred lambs growing at a faster rate. See the picture on the next page.

On October 15, he sold the two rams he had because he wants to depend on the Awassi ram; he is also looking to buy another ram from the same breed. Mr. Abu Arra'a has 60 ewes: 39 Awassi sheep (Balady breed) and 21 Assaf sheep (hybrid). He wants to inseminate the Assaf ewes with the Awassi ram to get more profit.

Mr. Arra'a also bought a Shami buck (male goat), which has very good meat and milk production, in order to make improvements in his flock of eleven (11) Balady goats.

✓ **Farmer buys 40 sheep.**

✓ **Land O'Lakes field agents advises farmer.**

✓ **Farmer buys Awassi ram from ArabeH demonstration farm**

✓ **Lambs from Awassi ram grow faster than others**



The picture above shows the difference in size between an Awassi-bred lamb (marked with an "X") and lambs sired by a Balady ram.

In November 1999, Land O'Lakes agents visited the farm and assisted with eartagging and record keeping for his farm, in order to calculate both input and output, including treatment, vaccination, nutrition, selling, and farm needs. As of this writing, he has 25 newly born sheep, with zero mortality and no spontaneous abortions.



Above: Field agents Salah Abu Eishah (foreground) and Quossay Abu Dawwas (background) assist in eartagging the sheep of Ahmad Abu Arra'a.

Mr. Abu Arra'a is now the chairman of the Sheep Breeders Association (SBA).

✓ **Zero mortality,
no spontaneous
abortions.**

✓ **Abu Arra'a
becomes
chairman of SBA**

Good Management Means More Profit

Mr. Hmod Younis, a farmer from Rammon village (15 km east of Ramallah), has 120 Awassi sheep and 10 goats. At the beginning of the West Bank project's technical assistance intervention, Hmod had a simple pen for rearing his animals. He was rearing the animals together, where they had poor ventilation, management and genetics. A field agent introduced Mr. Hmod to the extension services available through the Land O'Lakes extension program. He showed Hmod how his farm needed to improve its management through focus on the following issues:

- Isolation amongst the various groups of animals, because he was rearing all the animals together without separation between pregnant ewes, delivery ewes, lambs, etc.);
- Feed vessels, which were exposed to direct sunlight and to manure from goats and chickens;
- Ventilation, because of the small windows;
- Vaccination program; and
- Genetics improvement.

Through regular visits to the Hmod farm, the field agent showed the importance of improving farm management and communicated the beneficial effect on the quantity and quality of production that good management can have on the farm, which means more income for the farmer. Hmod implemented the following suggestions for improvement:

- Improved the feed vessels (as these vessels keep a lot of feed for more time save form dirty of animals and chicken);
- Improved ventilation by increasing the window space;
- Isolated various animals from each other (pregnant ewes, delivering ewes, lambs, etc.);
- Bought an Awassi ram from Arrabeh farm through Land O'Lakes Revolving Ram Program to improve the genetics of the herd; and
- Bought a tool to screen the ewes through milking, or foot trimming, or innoculating the animals.

By these improvements in the Hmod farm, the farm has become an innovative one from which other farmers can learn.

✓ **Problem: Sheep farm has poor ventilation, management, and genetics.**

✓ **Land O'Lakes field agent advises on methods to improve farm management.**

✓ **Farmer implements suggestions.**

✓ **Innovative farm serves as learning model.**

Sheep Farmer Invests in Good Farm Management Practices

Najeh Mohamad Abed Aljalil, from Mekhmas village, 20 km east of Jerusalem, is 35 years old and has about 60 head of Assaf sheep. Field agent Nehro Amer began visiting him in June 1998 through the Land O'Lakes extension project, considering him to be a typical farmer. At that time, Najeh had a farm of 40 Assaf sheep, but the farm had poor management.

First, the field agent helped him identify the problems he faces on the farm: poor management, poor animal nutrition, inadequate vaccination program. Through several extension visits, the agent gave him a Lamb Rearing Booklet and calendar, explaining the content of the brochure, the reason for distributing these brochures and how he can benefit from it.

After several agent visits, Najeh made these improvements:

- Improved the drinkers to be easier to fill and clean, which also saved time.
- Extended the shed for the animals, as it was not enough protection from direct sunlight.
- Increased the size of the farm and improved the design of the farm to be easy for cleaning, feeding, and moving.
- Constructed separations between the animals for purposes of isolation.
- Contacted the veterinary services and applied the vaccination program featured in the Land O'Lakes calendar.
- Used estrus synchronization to yield a large number of lambs.

Now Najeh has 60 Assaf sheep – increasing the flock 50% – and is happy about the benefits he gained after one year of rearing sheep, which matches with the project's goal of "Accelerating Economic Growth in the West Bank."

This farm is a good example for those who want to invest in the livestock sector.

✓ **Farmer improves farm management practices**

✓ **Farmer increases flock by 50%**

✓ **Farmer is a good example for others**

Sheep Farmer Improves Lamb Health

Mr. Mosa Salem Jahaleen, 35-year-old resident of Jeftlik Village, Jordan Valley, has a farm of 90 Awassi sheep. The sheep suffer from low productivity and a high mortality rate, and they have parasites.

The West Bank project staff explained to him how important it is to have a clean barn, free of parasites. Wind currents, a damp floor and mud are suitable atmosphere and media for different types of bacteria and fungi. The best way to overcome such problems is to have an isolated place for lamb delivery, to clean the discharges, and to remove the placenta, all of which reduce the chances of disease transmission. Having a special isolation room for newborn animals will help to avoid external parasites and disease infection from the older animal, due to the fact that the newly born animals have a very weak immune system that does not enable them to defeat infection. Such an isolation room can offer a warm and dry place in winter, contributing to a more comfortable and healthy environment for the lambs. In addition, vaccination of the animals against contagious diseases will save the lives of many animals and save farmers' money.

After a long discussion between the field agent and Mr. Jahaleen about the importance of cooperatives in supporting the farmers with veterinary medicine, feed and equipment needed in the production process, Mr. Jahaleen was satisfied to become a member of the Sheep Breeders Association – Nablus. During the agent's last visit, he was very happy to see Jahaleen's ID for membership in this very beneficial cooperative. The field agents are working hard to convince as many as possible of the farmers to become members of cooperatives.

✓ **Problem: Sheep suffer from low productivity, high mortality.**

✓ **Land O'Lakes field agent advises on methods to reduce parasites and improve lamb health.**

✓ **Farmer joins Sheep Breeders Association.**

APPENDIX B

MARKET RESEARCH SURVEY

Wool Fabrication

Market Survey

I am working with an American project that is seeking to help rural Palestinians find markets for their wool. Would you be willing to answer a few questions about a new product we would like to introduce? The survey will take about 5 minutes.

Which category would you fall into?

- 1) local citizen
- 2) tourist from Middle Eastern country
- 3) tourist from Western country
- 4) Other: _____

Have you ever seen a product such as this offered?

- 1) Yes. If Yes, Where? _____
- 2) No

Does that fact that the product is made by rural Palestinians appeal to you?

- 1) Yes
- 2) No

Does the fact that the product promotes peace appeal to you?

- 1) Yes
- 2) No

If the product were available in an open air market near a tourist site and sold at an approximate price of _____ Shekels, how likely would you be to purchase this product?

- 1) I definitely would buy it (5)
- 2) I probably would buy it (4)
- 3) I might or might not buy it (3)
- 4) I probably would not buy it (2)
- 5) I definitely would not buy it (1)

If you would not purchase the product, why (choose all that apply)?

- 1) Not useful
- 2) Too expensive
- 3) There are other similar products available
- 4) Appearance is not appealing
- 5) Other: _____

What changes would you make to the product to make it more appealing? Choose as many as apply.

- 1) More color. Explain: _____
- 2) Less color. Explain: _____
- 3) Better design. Explain: _____
- 4) Better quality wool
- 5) Should be smaller. Explain: _____
- 6) Should be larger. Explain: _____
- 7) Other: _____

How would you use the product? (Choose as many as apply)

- 1) As a memento of my trip
- 2) As a wall hanging
- 3) As a gift
- 4) To support rural Palestinians
- 5) To support peace
- 6) Other: _____

How many would you buy?

- 1) One
- 2) Two
- 3) Three or more

Would you be likely to purchase the product at an open-air market near a tourist site?

- 1) Yes
- 2) No

If no, where would you expect to find the product?

- 1) Hotel shop
- 2) Airport
- 3) Other: _____

If you were to purchase the product, would you like to know more about the family that made the product?

- 1) Yes
- 2) No

Would the above influence your decision to purchase?

- 1) Yes
- 2) No

Thank you for participating in this survey.

APPENDIX C

**JERICO LIVESTOCK COOPERATIVE
GENERAL ASSEMBLY MEETING**

Institution building

Jericho livestock cooperative. General Assembly Meeting.

Jericho-Aqbet Jabber

Date: : 21 July 1999
Group Farmers : Jericho Livestock cooperative members.
Organized by : LOL Staff. Group A.

Introduction:

On 21 July 1999. General assembly meeting for J.L.C. was held in aqbet gabber in the coop. building.

The aim of this meeting:

1. The Financial report.
1. The Administrative Report.
1. Election of new board.
1. Review the Coop. last 4 years activities.

The meeting arranged and sponsored by L.O.L project in Palestine
50 persons attended this meeting

Meeting Program

9:00 -9:30 Registration.

9:30-9:45 :

Mr. Adel Anssary- Director of Cooperation Office ,Ministry of Labor .
Mr.Anssary introduced the participant an idea about the legal and historical situation of the coop. Also he encouraged the members to reactivate the coop. to build anew relation with the other organization related to the livestock sector as MOA,LOL,PFU,.....etc.

9:45-10:00 :

Mr. Fawzi Abu-Alrub/Director of Jericho Agriculture department (MoA) . Mr. Fawzi gave a general idea about animal production in the area, also he gave an idea about the proplems facing the breeders especially the dry season.

Mr. Fawzi mentioned that there is 120,000 heads sheep and goat in the area, also he

encouraged the members of the coop. to play there role in helping the farmers.

10:00-10:15:

Mr. Ibrahim Khamees, Chairman of J.L.C.

Mr. Khemes gave an idea about the situation of the coop. during the last period while he was the Chairman of the Coop. He mentioned about the cooperation with Jericho Agriculture Department and cooperation with LOL in helping the members of the cooperatives in particular and the farmers in general.

purpose.

10:15-10:30: break.

10:30-11:00:

Dr. Wahib Tarazi, LOL project director, Palestine.

Dr. Tarazi explained the role of LOL in supporting and help in institution building especially which represent the farmers in livestock coop. in same time he explained to general assembly members about the programs and goals which was planned to this coop and the future vision where LOL can consider as partners in CSP.

11:00-12:00: DISCUSSION.

12:00- Election Of New Board:

The members of the new elected board are:

1. Mr Yoysef M. Yagi (**chairman**).
1. Mr Ibrahim Khames (**secretary**)
1. Mr Sulaiman Abu Dahok (**treasurer**)
1. Mr Ahmad Hassan Jahalin (**member**)
1. Mr Mossa M. Abu Dahok (**member**)

Control committee:

1. Mr Ibrahim Abu Kharbeesh.
1. Mr led Abu Dahok.
1. Mr Hassan Al-Mqaty.

Participants:

Land O' Lakes:

Project director: Dr. Wahib Tarazi.
Lead group A: Nidal Dweikat.

Field agent group A: Qossay Abu Dawwas.
 Field agent group A: Asa'd Abu saleh.
 Field agent group B: Nehro Amer.
 Field agent group B: Mohammed Al –Sous.

M.o.A.

Director of Jericho Agriculture Department. : Mr Fawzi Abu Al rup
 Extension Agent: Ms Ahlam Al Sadder.

M.o.L

Director of Cooperation Office: Mr. Adel Al Anssary.

PARC

Extension Coordinator: Mr Jamal Al- qadi.
 Extension agent: Mostafa Amer

Farmers :

Jericho Livestock Cooperative members:

| No. | Farmer's Name | Location | No. of Animals |
|-----|------------------------|---------------|----------------|
| 1. | Ibraheem Khamees | Ain Al Soltan | 80 |
| 2- | Yousef Abu Dahook | Bait EGZA | 170 |
| 3- | Ahmad Abu Dahook | Algeeb | 230 |
| 4- | Ibraheem Naser | Bait EGZA | 200 |
| 5- | SHEHDEH Abu Amer | Tubas | 300 |
| 6- | Abd al kareem Abu Amer | Tubas | 450 |
| 7- | Abd Awd DARAGHMEH | Tubas | 300 |
| 8- | Arabi M. Ali | Tubas | 250 |
| 9- | Solaiman Abu Dahook | Aqbet Jabber | 200 |
| 10- | Mohammad km Abu Dahook | Aqbet Jabber | 300 |
| 11- | Mosa M. Abu Dahook | Aqbet Jabber | 150 |
| 12- | Esmaeil Abu Dahook | Aqbet Jabber | 200 |
| 14- | Hassan Mqaiti | A.J | 250 |
| 15- | Khalil Abu Kharbeesh | Duke | 100 |
| 16- | Hossen Abu Dahook | A.J | 200 |
| 17- | Khader Abu Kharbeesh | Duke | 150 |
| 18- | Ahmad K. Abu Dahook | A.J | 250 |

| | | | |
|-----|-----------------------|------------------------|-----|
| 19- | Yousef Abu Dahook | Al khan Al Al Ahmer | 200 |
| 20- | Mossa Salem Jahhalin | Al Khan Al Ahmer | 350 |
| 21- | Mohammad Omer | Jeftlik | 300 |
| 22- | Yousef Yogi | Aqbet Gabber | 250 |
| 23- | Mohammed Salem | Oja | 200 |
| 24- | Salameh Abu Kharbeesh | Aqbet Jabber | 300 |
| 25- | Sulaiman Abu Dahook | A.J | 150 |
| 26- | Mustafa Hassan | Duke | 150 |
| 27- | Salem Kabneh | Oja | 200 |
| 28- | Amen Zawahreh | Oja | 250 |
| 29- | Abed Abu – Dahok | Aqbat Jaber | 200 |
| 30- | Mohammed Abu Dahok | Aqbat Jaber | 150 |
| 31- | Ibrahem Abu Khaebeesh | Duke | 250 |
| 32- | Ahmad Nasser | Al-khan Alahmar | 200 |
| 33- | Ibrahem S.Abu Dahok | Al-Khan | 150 |
| 34- | Jamal M.Hassan | Al-Khan | 200 |
| 35- | Salman Salem Jahalin | Aqbat Jaber | 200 |
| 36- | Odeh M. Abu Dahok | Al-Khan | 150 |
| 37- | Mohammed Nasser | Aqbat Jaber | 100 |
| 38- | Jamel M. Hassan | Aqbat Jabert | 150 |
| 39- | Abu Nayef | Duke | 200 |

APPENDIX D

MOBILE SERVICE UNITS

PRO FORMA PROFIT AND LOSS STATEMENT

**Land O'Lakes West Bank/Gaza
Mobile Service Units**

PROFORMA PROFIT AND LOSS STATEMENT

CURRENCY EXPRESSED IN
US\$

| Project Year | --- | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------------------------|-----|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Revenues | | 249 | 268 | 307 | 326 | 326 | 326 | 326 | 326 |
| Cost of Goods Sold | | | | | | | | | |
| Raw Materials | | 102 | 110 | 126 | 134 | 134 | 134 | 134 | 134 |
| Utilities | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Field Labor | | 177 | 177 | 177 | 177 | 177 | 177 | 177 | 177 |
| Maintenance | | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Depreciation | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Production Expenses | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Cost of Goods Sold | | 290 | 298 | 313 | 321 | 321 | 321 | 321 | 321 |
| Gross Profit | | -41 | -29 | -7 | 5 | 5 | 5 | 5 | 5 |
| G&A Expenses | | 91 | 98 | 112 | 119 | 119 | 119 | 119 | 119 |
| Royalties | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Operating Profit | | -132 | -128 | -119 | -115 | -115 | -115 | -115 | -115 |
| Financial Expenses | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Interest Income | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Net Profit | | -132 | -128 | -119 | -115 | -115 | -115 | -115 | -115 |
| Taxes | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Net Profit after Taxes | | -132 | -128 | -119 | -115 | -115 | -115 | -115 | -115 |
| Add: Depreciation | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cash Flow from Operations | | -132 | -128 | -119 | -115 | -115 | -115 | -115 | -115 |
| Principal Repayment (Net) | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Net Cash Flow | | -132 | -128 | -119 | -115 | -115 | -115 | -115 | -115 |

ASSUMPTIONS

Land O'Lakes/A.P. Gross
Confidential

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| | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Annual Utilization | 0% | 65% | 70% | 80% | 85% | 85% | 85% | 85% | 85% |
| Average Annual Service Fees | 383 | 383 | 383 | 383 | 383 | 383 | 383 | 383 | 383 |
| Supplies & Materials | 158 | 158 | 158 | 158 | 158 | 158 | 158 | 158 | 158 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Service Labor costs | 177 | 177 | 177 | 177 | 177 | 177 | 177 | 177 | 177 |
| Maintenance (% of equipment costs) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Depreciation (% of investment) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Other Production Expenses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Royalties on Sales | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G&A (% production) | 36.6% | 36.6% | 36.6% | 36.6% | 36.6% | 36.6% | 36.6% | 36.6% | 36.6% |
| Interest Income (previous year balance) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |

INITIAL INVESTMENT

| | | | | | | | | | |
|------------------------|-----|--|--|--|--|--|--|--|--|
| Vehicles and Equipment | 345 | | | | | | | | |
| start up supplies | 0 | | | | | | | | |
| Consulting Services | 0 | | | | | | | | |
| Capitalized Interest | 0 | | | | | | | | |
| Total | 345 | | | | | | | | |

FINANCING

| | | | | | | | | | |
|----------------------------|----|---|---|---|---|---|---|---|---|
| Debt (% of investment) | 0% | | | | | | | | |
| Term of Loan | | | | | | | | | |
| Rate of Interest per annum | 0% | | | | | | | | |
| Amount of Loan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Principal Repayment | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Interest | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

INTEREST INCOME

| | | | | | | | | | |
|-----------------------|--|---|---|---|---|---|---|---|------|
| Net Cash Flow (Basis) | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -115 |
|-----------------------|--|---|---|---|---|---|---|---|------|

Financial IRR (project as a whole) #DIV/0!

| | | | | | | | | | |
|-------------------|----------|------|------|------|------|------|------|------|------|
| Operating Profit | | -132 | -128 | -119 | -115 | -115 | -115 | -115 | -115 |
| Add: Depreciation | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Project Cash Flow | -345,000 | -132 | -128 | -119 | -115 | -115 | -115 | -115 | -115 |

Shareholder ROI #DIV/0!

| | | | | | | | | | |
|---------------------------|------|------|------|------|------|------|------|------|------|
| Cash Flow from Operations | -345 | -132 | -128 | -119 | -115 | -115 | -115 | -115 | -115 |
|---------------------------|------|------|------|------|------|------|------|------|------|

| 9 | 10 | 11 | 12 | 13 | 14 |
|------|------|------|------|------|------|
| 326 | 326 | 326 | 326 | 326 | 326 |
| 134 | 134 | 134 | 134 | 134 | 134 |
| 0 | 0 | 0 | 0 | 0 | 0 |
| 177 | 177 | 177 | 177 | 177 | 177 |
| 10 | 10 | 10 | 10 | 10 | 10 |
| 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 |
| 321 | 321 | 321 | 321 | 321 | 321 |
| 5 | 5 | 5 | 5 | 5 | 5 |
| 119 | 119 | 119 | 119 | 119 | 119 |
| 0 | 0 | 0 | 0 | 0 | 0 |
| -115 | -115 | -115 | -115 | -115 | -115 |
| 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 |
| -115 | -115 | -115 | -115 | -115 | -115 |
| 0 | 0 | 0 | 0 | 0 | 0 |
| -115 | -115 | -115 | -115 | -115 | -115 |
| 0 | 0 | 0 | 0 | 0 | 0 |
| -115 | -115 | -115 | -115 | -115 | -115 |
| 0 | 0 | 0 | 0 | 0 | 0 |
| -115 | -115 | -115 | -115 | -115 | -115 |

42

| | | | | | |
|-------|-------|-------|-------|-------|-------|
| 85% | 85% | 85% | 85% | 85% | 85% |
| 383 | 383 | 383 | 383 | 383 | 383 |
| 158 | 158 | 158 | 158 | 158 | 158 |
| 0 | 0 | 0 | 0 | 0 | 0 |
| 177 | 177 | 177 | 177 | 177 | 177 |
| 3% | 3% | 3% | 3% | 3% | 3% |
| 0% | 0% | 0% | 0% | 0% | 0% |
| 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 |
| 36.6% | 36.6% | 36.6% | 36.6% | 36.6% | 36.6% |
| 0% | 0% | 0% | 0% | 0% | 0% |

| | | | | | |
|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 |

| | | | | | |
|------|------|------|------|------|------|
| -115 | -115 | -115 | -115 | -115 | -115 |
|------|------|------|------|------|------|

| | | | | | |
|------|------|------|------|------|------|
| -115 | -115 | -115 | -115 | -115 | -115 |
| 0 | 0 | 0 | 0 | 0 | 0 |
| -115 | -115 | -115 | -115 | -115 | -115 |

| | | | | | |
|------|------|------|------|------|------|
| -115 | -115 | -115 | -115 | -115 | -115 |
|------|------|------|------|------|------|