

PD-ABT-984

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

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

**QUARTERLY REPORT**

**FOR APRIL - JUNE 2000**

**Submitted by**

**Land O'Lakes, Inc.**  
**P.O. Box 64406**  
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**July 27, 2000**

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

**Quarterly Report**

**For April - June 2000**

Dates of project:	June 30, 1997 – November 30, 2000
Total estimated federal funding:	\$1,700,000
Total spent through June 2000:	\$1,609,018
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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 Arabeih 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.

Based on review of the monitoring and evaluation system, the project has generated **increased family income of roughly \$1500 per family over the last year as a result of the Land O'Lakes project.** In many cases, the project has doubled project participants income. See Monitoring and Evaluation in Section V of this report.

## II. Implementation and Challenges Encountered

This report covers the period of April - June 2000. The following is a summary of activities for the last quarter:

**Extension:** During this period, extension visits reached 316 farmers owning over 180,000 sheep and goats. The month of May is the peak season for cheese and meat production and a time when the sheep and goats are moved up to the green hills for grazing. June is the seasonal heat cycle for sheep and goats in the West Bank, so farmers are concerned about their rams' health and feeding the ewes to guarantee a high rate of conception among their herds. Agents addressed issues such as:

- hygienic methods of on-farm cheese processing
- farm record-keeping
- increasing milk and meat production through nutrition
- flushing the ewes
- controlling external and internal parasites

Land O'Lakes began a Farmer-to-Farmer project in West Bank during the past quarter. The new program coordinates closely with this project to enhance its effectiveness. Here are some contributions by Farmer-to-Farmer volunteers in the past quarter:

- Dr. James Thompson advised dairy farmers on feedlots for ruminants and provided management recommendations to improve practices at the farm level. He gave a workshop about feeding in all stages of a ewe's life: gestation, milking, mating, and fattening.
- Vern Meyer instructed in farm construction and suitable designs for farm buildings, taking into consideration the local climate.
- Lynn Dreyer conducted an assignment with The Palestinian General Federation for Breeders and Animal Wealth in Palestine. He evaluated their present situation and helped them develop a working business plan.
- James Kalscheur, a specialist in meat-cutting, assisted the Al-Quisi slaughter house in Tulkarm. He visited also several meat markets in Nablush, Ramallah and Hebron, where he made several suggestions, such as using hot water to clean the meat shops, putting the grinders in the refrigerator, etc. He promised to send posters of meat cuts to help their customers identify cuts of meats.
- Tom Jones worked with the Ghosheh Food Industry Company in Jericho. The company works in meat processing, especially sausages. The goal of the assignment was to improve the current products and to produce new types of products to increase profitability. He provided information about spices and flavors used in meat processing, which should help management in reducing the cost of inputs.

### **Women's Component:**

The women's extension component reached 108 women in 15 villages, primarily for institution-building. The organizations involved were the Nweimeh Young Women's Cooperative, the Marda Women's Club and the Tamoun Women's Cooperative. The activities and discussion focused on how women can take a leading role in starting projects to improve their income, manage their institutions, and how to add a training program to improve skills.

For more on the women's component, see the Cooperative and Community Development section below.

### **Improved Genetics:**

The revolving ram program has concluded and all rams have been sold. In June, the project field agents focused on following up with the farmers who had bought the rams.

### **Cooperative and Community Development:**

Beginning in this quarter, two other Land O'Lakes projects have begun work in the West Bank: Cooperative Development Program (CDP) and the WorldWide Farmer-to-Farmer programs, both funded out of USAID/BHR/PVC. All three programs are coordinating efforts closely to assist cooperatives in the West Bank.

The Nweimeh Young Women's Cooperative (NYWC) is located in the Nweimeh village near Jericho and has 28 women members. They have opened two bank accounts: 1) the first one for the membership fees and 2) the second one for an income-generating beekeeping project. The \$400 generated from harvesting honey will be saved and used as capital for the cooperative. Through meetings with the Land O'Lakes CDP coordinator and the IFAD coordinator, IFAD has offered to deposit \$3000 to add to the \$500 already in the bank, as a loan for equipment. The general assembly of the cooperative will meet to decide whether to accept the loan and, if accepted, to negotiate the terms.

The Marda Center for Sustainable Development is a women's association started by a local Palestinian NGO, Ma'an, that has gained the trust of the women in eight villages: Deir Balot, Yasouf, Alzawiah, Kufer Edeek, Skaka, Broqeen, Kefl Elhares and Deir Esta. A Farmer-to-Farmer volunteer and two Land O'Lakes project staff members succeeded in convincing them to gather their efforts and ideas in order to share them with each other and to cooperate on a project. The women did not hesitate to form a cooperative, the central cooperative to be in Marda and cooperatives in the other villages to be branches with independent projects. Read the impact report in Appendix B for more on the cooperative.

The Tamoun Women's Cooperative, established in February 1997, is located in an area well known for high-quality olives. Land O'Lakes staff and a Farmer-to-Farmer volunteer met with the board and discussed the future plans that can be implemented by the cooperative and various constraints that face it. Marketing issues are major constraints for any product produced by the members. The board members expressed willingness to cooperate with Land O'Lakes programs

in the future. Land O'Lakes staff have visited the group several times, studying the possibilities for it to address gender issues in future institution capacity-building. They recognize that Tamoun village can lead the gender issue for the other villages around it.

### **Innovative Farms:**

Using innovative farms in the project area as an example for other farmers, the field agents have implemented an extension program for the project clients. The agents observe that other farmers imitate the practices demonstrated in the innovative farms, especially when they see by their own eyes and touch with their own hands the difference between the herds raised at the innovative farms and at their own farms. During the past quarter, the innovative farms continue to influence fellow West Bank farmers. Read the impact report entitled "Innovative Farm Leads Neighbors" in Appendix B.

### **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.

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

### **IV. Changes to Project Plan**

The project was to terminate on July 1, 2000. USAID has granted an un-funded extension of the project through November 30 in order to complete its assistance objectives.

## 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 July 1998-June 1999 (FY1999) and July 1999 and June 2000 (FY 2000):

1. Additional income of \$509 per family from increased meat production. Meat produced increased 4% between FY1999 and FY2000. This increase represents a \$509,152 increase in income for program participants or approximately \$509 per family.
2. \$376 per family from decreased mortality. Live births decreased 2%. However, even though fewer lambs were born, more lambs actually survived, as mortality rate decreased by 34%. This decrease represents a \$376,380 increase in income for participants or approximately a \$376 increase per family.
3. \$617 per family raised as a result of increased milk sales. Milk production surged 26%. This increase represents additional income of \$617,640 for program participants or \$617 per family.
4. **The above represents an increased family income of roughly \$1500 per family over the last year as a result of the Land O'Lakes project.** In many cases, the project has doubled project participants' income. The farmers are using the additional income to: 1) purchase rams to improve the herd's genetic base and product, 2) add some selected ewes to the flock; 3) purchase health insurance for their families; and 4) institute some improvements in their milk sanitation and cheese processing systems.

Land O' Lakes, Inc.

Accelerating Rural Economic Growth in the West Bank

Multibase Time Series Analysis

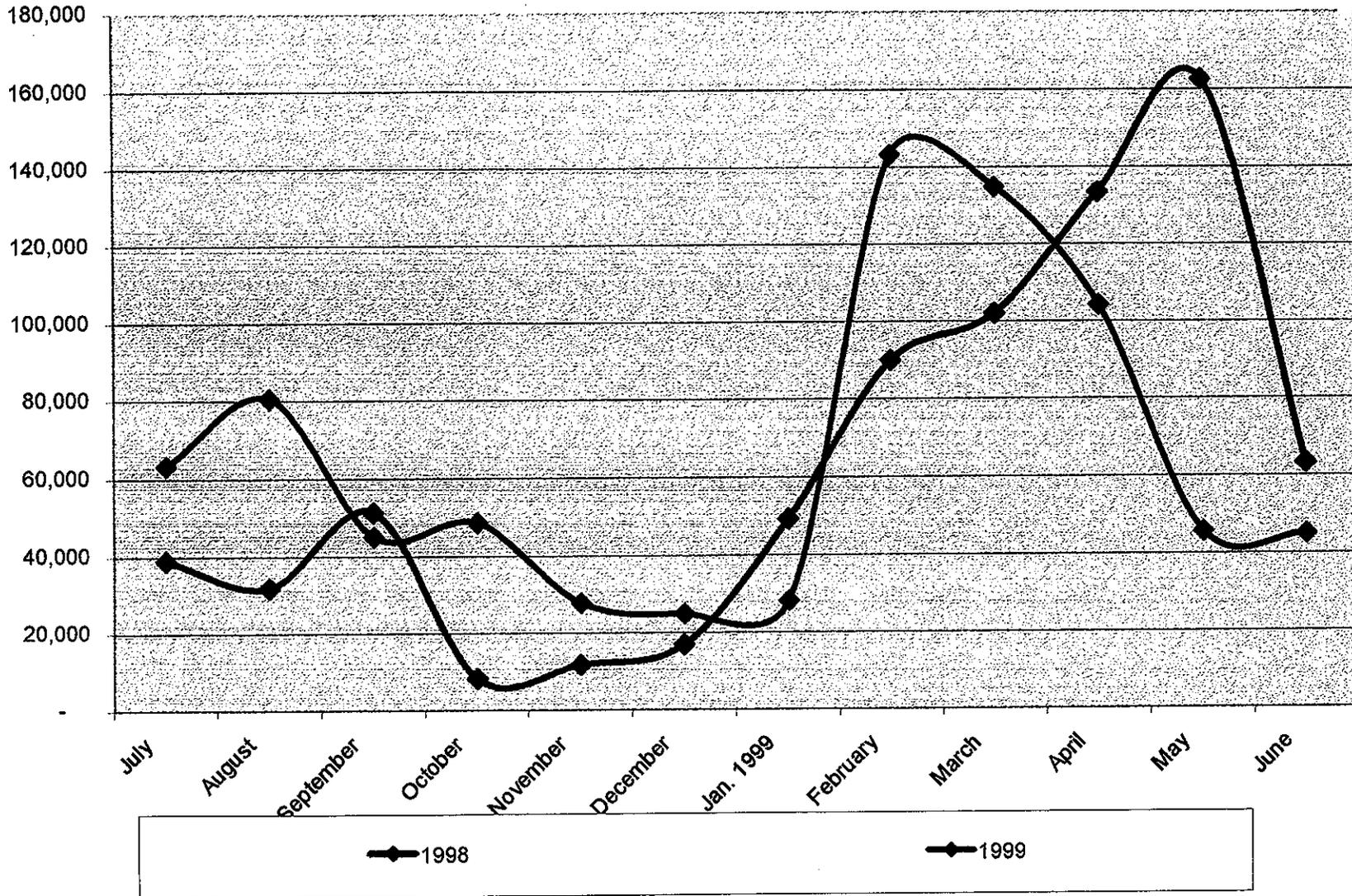
**TOTAL COMPILATION**

	SHEEP & GOATS											
	Meat Produced (kilos)	Live Births	Mortality	Spontaneous Abortion	Losses Due to Disease	Wool Produced (kilos)	Milk Produced (litres)	Milking Animals	Average Yield (litres)	Size of Herd		
										Sheep	Goats	Total
July	39,009	332	130	47	202	736	73,036	7175	10.2	7286	11558	18844
August	31,877	153	45	104	171	1	42,105	4255	9.9	5134	11175	16309
September	51,339	518	49	132	131	-	9,058	603	15.0	1632	11112	12744
October	8,103	2,306	198	103	62	2	8,495	865	9.8	1874	11403	13277
November	11,642	6,984	264	166	115	-	24,410	2107	11.6	3167	12252	15419
December	16,851	6,167	482	172	131	8	83,290	6628	12.6	8674	10629	19303
Jan. 1999	49,238	6,134	706	253	177	-	165,200	11843	14.2	14680	10604	25284
February	89,892	4,606	577	133	86	-	207,840	15064	13.8	15470	10598	26068
March	102,037	2,696	311	77	92	-	262,390	18189	14.4	18419	10598	29017
April	133,474	1,495	247	23	109	11,902	243,370	19351	12.6	18073	9914	27987
May	162,519	1,350	100	31	67	14,451	201,980	17690	11.4	16504	9864	26368
June	63,278	968	149	43	52	1,546	137,467	11087	12.4	11551	21665	33216
<b>Subtotal FY 1999</b>	<b>759,259</b>	<b>33,709</b>	<b>3,258</b>	<b>1,284</b>	<b>1,395</b>	<b>28,646</b>	<b>1,458,641</b>	<b>114657</b>	<b>147.9</b>	<b>122464</b>	<b>141372</b>	<b>263836</b>
<b>Annual Average</b>	<b>63,272</b>	<b>2,809</b>	<b>272</b>	<b>107</b>	<b>116</b>	<b>2,387</b>	<b>121,553</b>	<b>9555</b>	<b>12.3</b>	<b>10205</b>	<b>11781</b>	<b>21986</b>
July	63,250	424	20	16	48	-	73,181	6055	12.1	15195	10803	25998
August	80,413	518	11	70	95	250	40,580	3296	12.3	4042	9538	13580
September	45,125	886	35	143	69	-	16,060	1139	14.1	2073	9589	11662
October	48,653	2,949	117	121	49	-	14,653	890	16.5	1836	9257	11093
November	27,710	7,203	351	184	87	-	36,945	2183	16.9	3056	9236	12292
December	24,892	8,461	483	186	88	-	91,970	5516	16.7	8636	9240	17876
Jan. 2000	28,180	5,894	486	182	154	-	185,105	10788	17.2	11298	9178	20476
February	143,190	3,044	405	29	121	2	248,350	16660	14.9	16970	9106	26076
March	134,740	1,689	116	27	70	-	347,120	22242	15.6	22347	8984	31367
April	104,120	615	36	38	23	9,588	363,960	20678	17.6	20758	8966	29724
May	45,700	409	25	26	41	10,313	274,760	16689	16.5	16906	8933	25839
June	45,108	862	66	132	73	2,130	180,235	10393	15.4	9352	10267	19162
<b>Subtotal FY 2000</b>	<b>791,081</b>	<b>32,954</b>	<b>2,151</b>	<b>1,154</b>	<b>918</b>	<b>22,283</b>	<b>1,852,919</b>	<b>116529</b>	<b>185.7</b>	<b>132469</b>	<b>113097</b>	<b>245145</b>
<b>Annual Average</b>	<b>65,923</b>	<b>2,746</b>	<b>179</b>	<b>96</b>	<b>77</b>	<b>1,857</b>	<b>154,410</b>	<b>9710.75</b>	<b>15.5</b>	<b>11039.08333</b>	<b>9424.75</b>	<b>20428.75</b>
<b>Total +/-</b>	<b>(31,822)</b>	<b>755</b>	<b>1,107</b>	<b>130</b>	<b>477</b>	<b>6,363</b>	<b>(394,278)</b>	<b>(1,872)</b>	<b>(38)</b>	<b>(10,005)</b>	<b>28,275</b>	<b>18,691</b>
<b>Percent +/-</b>	<b>4%</b>	<b>-2%</b>	<b>-34%</b>	<b>-10%</b>	<b>-34%</b>	<b>-22%</b>	<b>27%</b>	<b>2%</b>	<b>26%</b>	<b>8%</b>	<b>-20%</b>	<b>-7%</b>

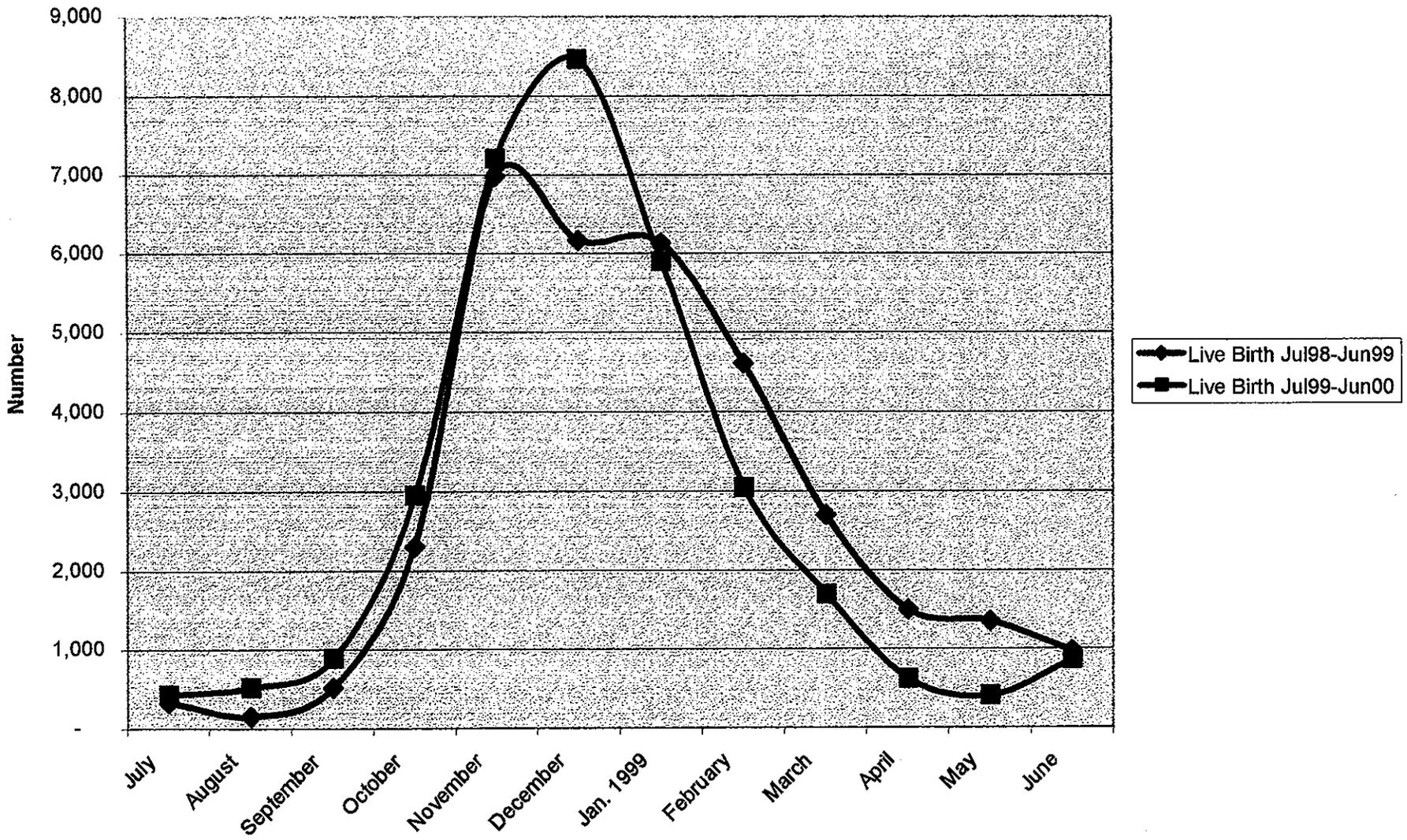
Accelerated Economic Growth in the West Bank  
Grant No. PCE-G-00-97-00047-00  
Land O'Lakes, Inc.

### Meat Produced 1998 vs. 1999

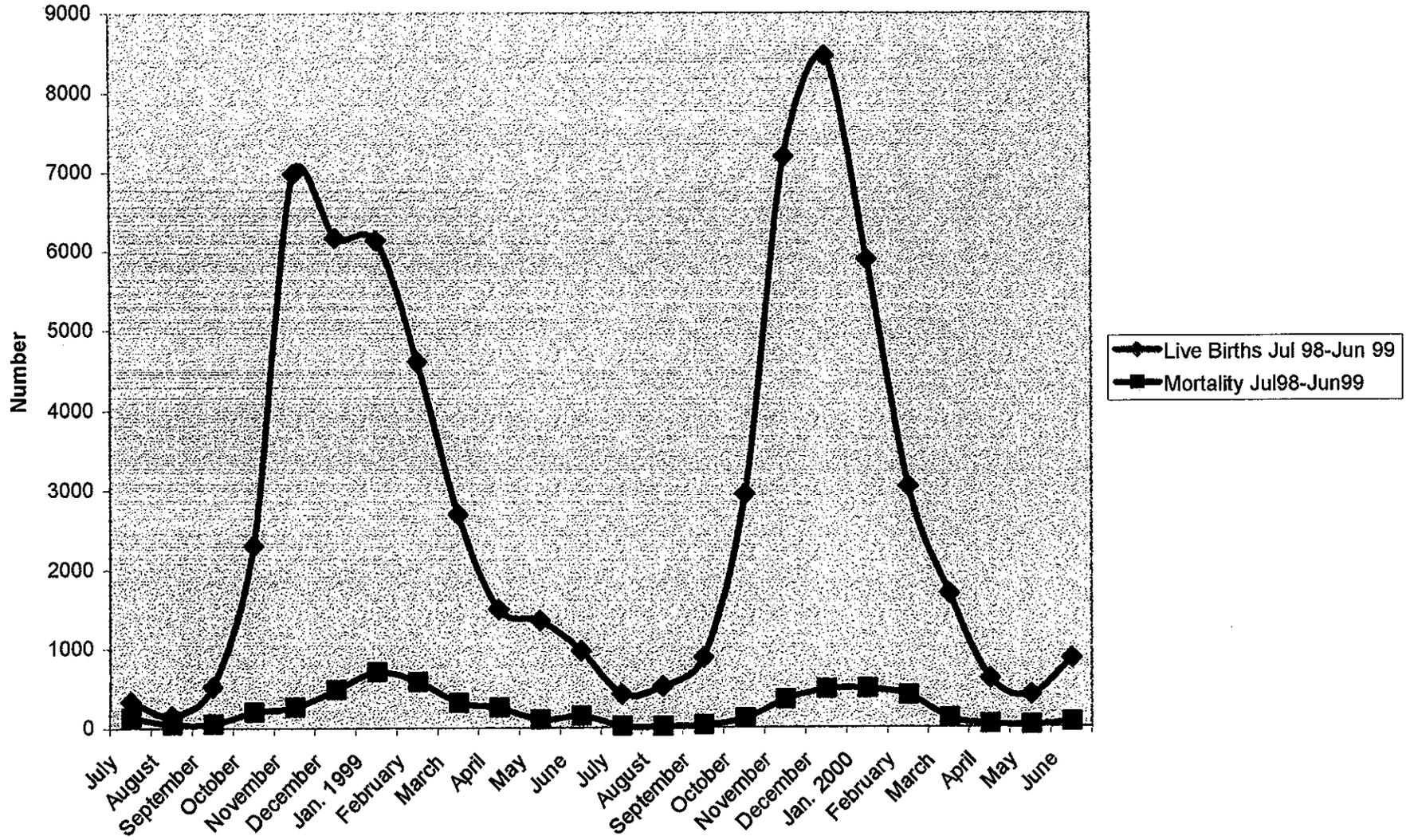
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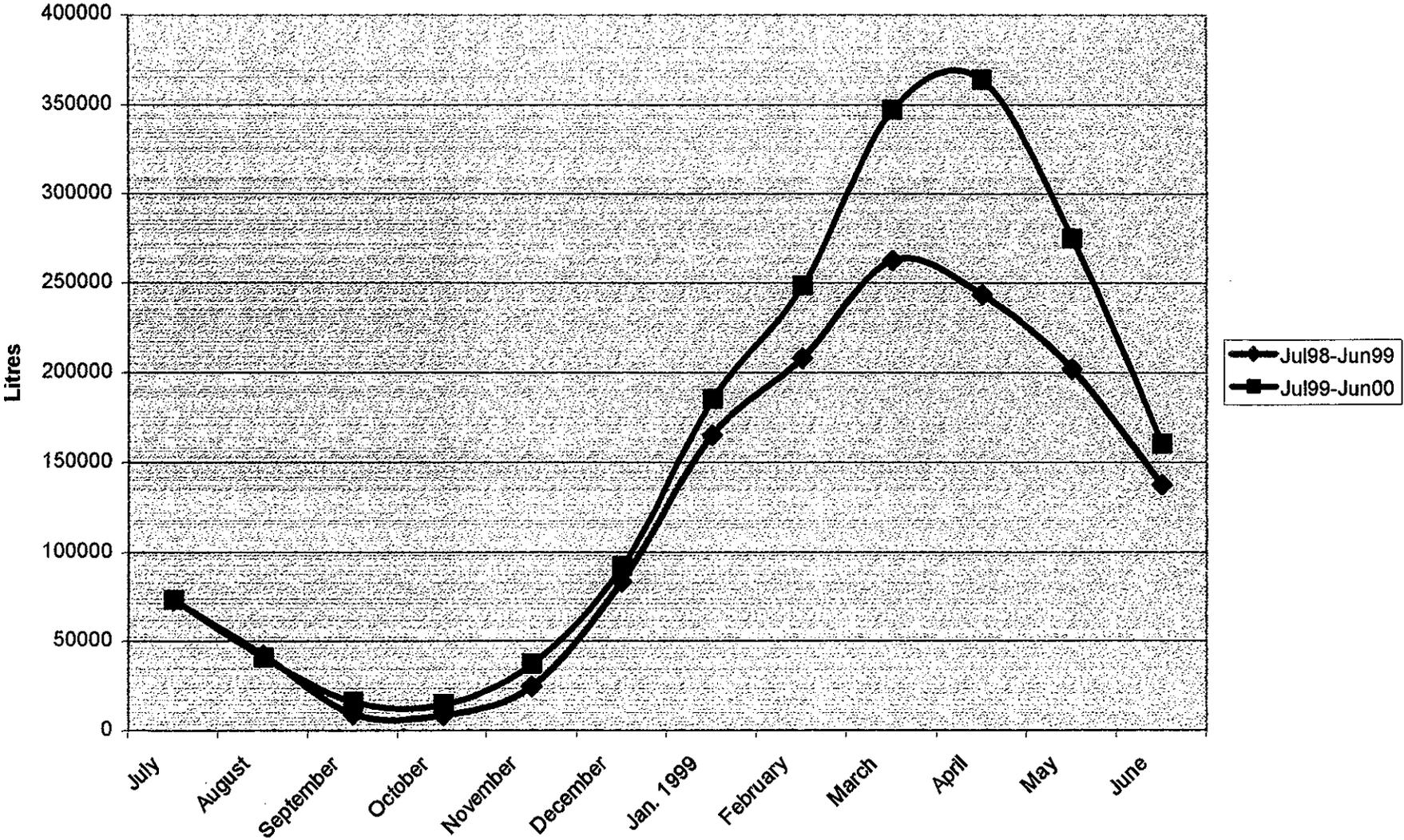
### Live Births FY98 v. FY 99



### Live Births vs. Mortality Rate

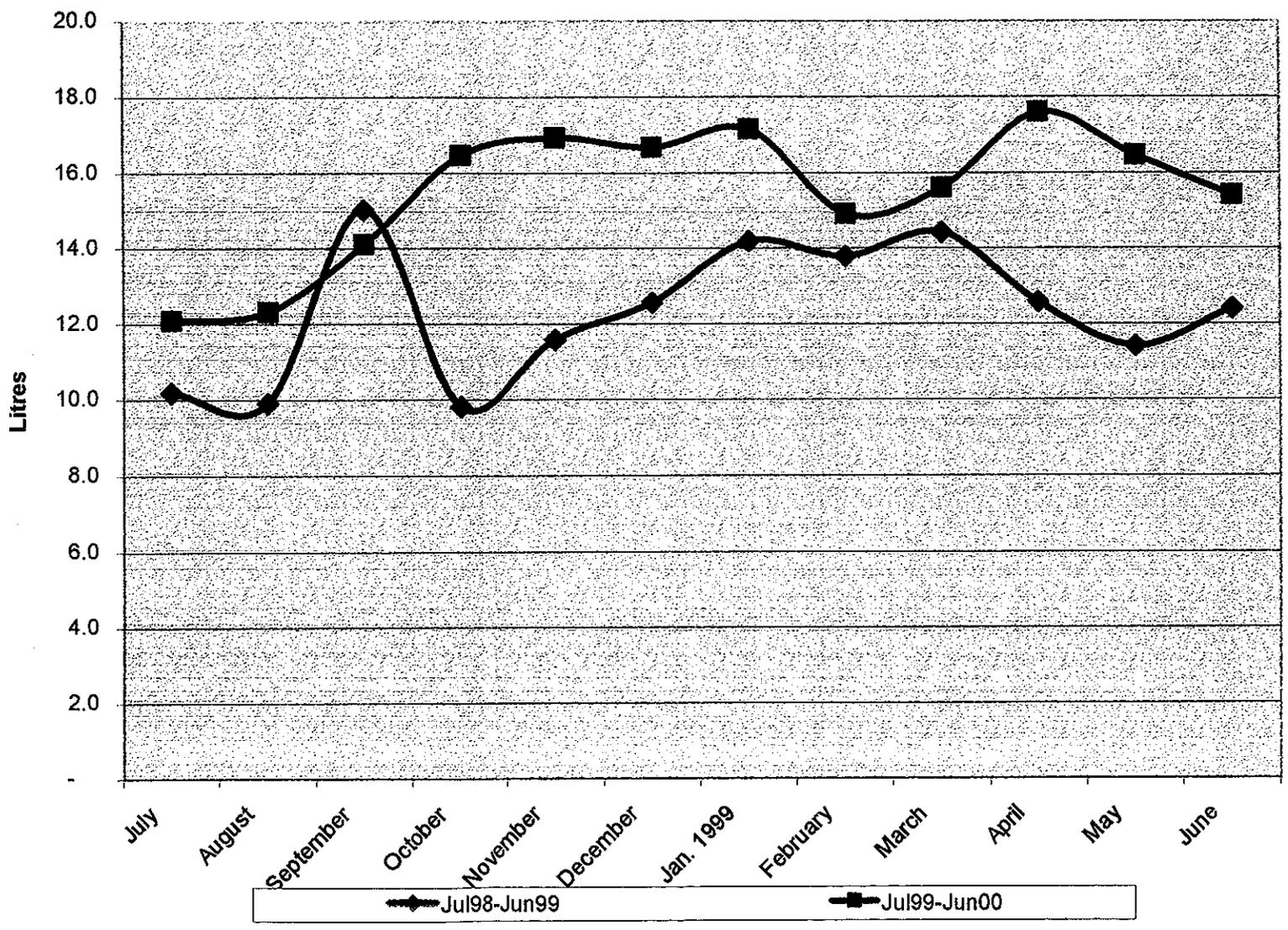


# Milk Produced



Accelerated Economic Growth in the West Bank  
Grant No. PCE-G-00-97-00047-00  
Land O' Lakes, Inc.

### Avg Milk Yield



## **VI. Plans for Next Quarter**

A project audit and final project evaluation will be conducted during September/October. Extension activities will continue and conclude as originally proposed in the extension request.

# **APPENDIX B**

## **Impact Reports**

**Women's Cooperative Established**

Marda village, located thirty kilometers north of Nablus, is the center of eight other villages: Scaca, Der Balot, Yasof, Broqen, Kofer Aldek, Der Estea, Alzawiah, and Kefl Elhares. About 1400 people live in this village, working on farms or raising livestock or both. The Marda Center for Sustainable Development is located in the center of Marda village. The strategic location of the center and the village itself gives it the advantage of easing communication with all of Marda's women and the women from surrounding villages. The center provides the people of the area with many services such as training courses and workshops.

Land O'Lakes started visiting the Marda center in early May 2000, meeting many times with the director of the center, Mr. Nasfat, and the staff. During a meeting arranged by the center, the women of Marda shared their objectives and goals for the center. In turn, Land O'Lakes talked to them about cooperatives, women institution-building, and financial independency. The idea of establishing a central cooperative in Marda was suggested, one that would accept the membership of all interested women from the villages nearby.

In an important meeting held May 16, women delegates from the villages discussed the idea of establishing a central women's cooperative as the best way to achieve financial independence. The first aim for establishing such a cooperative is to increase women's and families' incomes, in addition to improving women's role in society. Land O'Lakes gave them many examples, such as the experience of Nweimeh cooperative. At the same meeting, they formed a subcommittee to continue the legal procedures for establishing a cooperative. They asked Land O'Lakes to provide them with a feasibility study for raising fifteen (15) sheep.

✓ **Marda Center is key contact for co-op discussions**

✓ **Land O'Lakes promotes idea of forming a women's cooperative**

✓ **Village women decide to establish a cooperative and begin legal process to do so.**

**Innovative Farm Leads Neighbors**

Ain Al Soltan is a refugee camp four kilometers north of Jericho with about 3,000 people. Eighty percent (80%) of them are Bedouin and earn their living entirely from agriculture – both animal and plant production. Mr. Ibraheem Khamees is a 40-year-old farmer there who owns 50 head of sheep and 30 head of goats. Mr. Ibraheem is one of the key persons in his community; he is the ex-chairman of the Jericho Livestock Cooperative.

At the beginning of this project's interventions in May 1998, his farm management practices were poor. The traditional way of raising animals had led the farm to a high animal mortality rate and low milk production. Twenty percent (20%) of the animals were not productive. Mr. Ibraheem was educated on the following:

- Nutrition quality and quantity
- Salt blocks
- Milk replacer
- Isolation of pregnant animals and newborns

Step by step, Mr. Ibraheem improved the management of the farm by instituting these practices. As he is a key person in his community, his farm was selected as a site for an innovative farm. Land O'Lakes paid for 50% of the costs, and he contributed the other 50%. The innovative farm helped him decrease the mortality rate from 20% to 5%. Also, meat production has increased.

Convinced of the importance of culling, he replaced 20% of his flock in order to make it more productive and profitable. When the other neighbor farmers saw the results of the innovative farm and how good management can increase profitability, they imitated his innovative farm, and each of them now shows the impact of good farm management.

✓ **Bedouin farmer has 50 sheep and 30 goats.**

✓ **Extension agent identifies areas for improvement**

✓ **Ibraheem and Land O'Lakes partner to establish an innovative farm.**

✓ **Mortality rate decreases from 20% to 5%.**

✓ **Innovative farm serves as model for neighbor farmers**

**Increased Milk Production,  
Reduced Mortality Rate**

Abed Alhamid Jbran (Abu Jbran), is a farmer from Der Dibwan village, ten kilometers east of Ramallah. He is a 65-year-old man with about 160 head of sheep and 14 head of goats who raises his animals in the traditional way of the Bedouins. In winter, he moves east of Der Dibwan, which means that he moves to Jericho city because it is warmer; in summer he moves west of Der Dibwan, beside Ramallah city, which is colder. One of the project extension agents began work with Mr. Jbran at the beginning of the agent's work with Land O'Lakes. At first, the farm situation was bad in many aspects: poor ventilation, poor nutrition, no mineral block, poor feeders and drinking vessels, a weak vaccination program, old ewes (no culling system), and no isolation places. All of this led the agent to conclude that the farmer had poor production in terms of both quantity and quality.

The agent helped him to identify these problems and then assisted him through several visits, providing Land O'Lakes calendars and lamb-rearing booklets and discussing the importance of the information. Mr. Jbran improved the nutrition, ventilation, feeders, drinking vessels, and vaccination program. He made isolation rooms for lambing ewes, used iodine for disinfection, and introduced a healthy way of discarding carcasses, placenta, fetuses, etc. The farmer began to experience the benefit of applying the guidance he obtained through the extension program. Day by day he became increasingly cooperative -- not only he but also his three sons, who have their own farms. They were very interested in following in their father's footsteps.

The agent put Mr. Jbran on the list of farmers monitored on a monthly basis. The results were recorded on a monthly data input sheet. After two years, the milk production increased 130% and mortality rate was reduced by 60%. Because of this, the farmer was totally convinced of the importance of improvements and of extension work. These results are some of the most important objectives of the "Accelerating Economic Growth in the West Bank" program.

✓ **Traditional Bedouin farmer has 160 sheep and 14 goats.**

✓ **Farmer institutes many improved farm management practices**

✓ **His 3 sons follow his lead.**

✓ **In 2 years, milk production increases 130%; mortality rate is reduced by 60%.**

**Farmer Maher Decreases Animal Losses, Increases Profits**

Abu Maher is a 62-year-old man from Frosh Beit Dajan village, nineteen kilometers to the east of Nablus city. He has spent his entire life raising sheep and goats. He has 155 head of sheep and goats on his farm and is willing to do whatever he needs to buy pharmaceuticals for his animals. He follows good management practices in the feeding and vaccination programs, but other areas suffer from poor management. Unfortunately, his animals suffer a great deal from pneumonia and low fertility rates. Last year he spent about \$350 for treating these problems, but the medicines and drugs he bought were useless and did not give the expected results. He lost 13 lambs and 8 adult ewes due to pneumonia alone, a loss of about \$3400.

Through visits to Abu Maher's farm, the Land O'Lakes extension agent found no pathogenic reasons for the high death rate. It was a matter of insufficient shade and poor ventilation. The agent advised Mr. Maher to expand the shade places to provide enough space for all the animals, especially lambs, to improve the ventilation inside farm, and to provide pure and clean water all the time. This year the death rate due to pneumonia decreased to 3 lambs and 2 ewes. This means that Abu Maher decreased his losses and increased his yearly profit by \$2500.

✓ **Farmer's animals plagued by pneumoina and low fertility rates.**

✓ **Improved shade, ventilation, and water leads to fewer animal losses.**

✓ **Yearly profit increases by \$2500**

**Good Management Leads to More Profit**

Saleh Daraghmeh is from Tubas City; Tubas stands between Nablus to the south and Jenin to the north. The Tubas lands expand east to the east bank of the Jordan Valley. Mr. Daraghmeh is 38 years old and has about 50 head of sheep and 9 head of dairy cows. The farm is the main source of family income and has helped nine surviving members of his family. Farmer Daraghmeh is concentrating on the farming role inherited from his father. He has found that this business gives him more profit than any other kind of work he has had before.

The project extension agent began visiting him in February 1999. At that time, he had good sheep and dairy cows with high productivity in meat and milk, but he wanted to improve on the farm management. The agent identified some areas for improvement:

- Sheep and cows kept together in small barracks
- No record-keeping
- No milking machine for the cows
- Hay kept in the sun, which led to leaching of the nutritive value.

Consequently, the agent worked with him to add new barracks near the old ones in order to have separate places for the animals. He had land near the farm to establish a place for the hay, so he could have a place to store the feed. This decreases the cost of feed in the dry season, which is very expensive.

The other thing he worked on was ear-tagging and record-keeping for the sheep. He bought ear tags from the market, and the agent helped him to put them on the sheep and lambs.

The agent showed him how to keep records for productivity, rams, nutrition, and the financial records for the farm. After several visits, farmer Darghmeh began implementing the system for his farm.

✓ **Farmer aims to improve on his already good management.**

✓ **New barracks built; record-keeping begun; ear-tagging instituted; new hormonal synchronization system for ewes.**

✓ **Cost of feed decreases.**

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The farmer began using the synchronization system, using sponges and hormones, and the ultrasound machine to know the situation on his farm. He used this system for 30 sheep. After two months, he used the ultrasound (pregnancy test) on his sheep, and discovered that he had a 90% success rate for fertility.

✓ **Fertility rate of sheep is 90%.**

In lambing season, he started using milk replacer for the new lambs after colostrum feeding. This led to more profit on his farm and more cheese production.

A new milking machine saves time and effort, decreases disease on the farm, and improves the sanitation of the milk.

As a result of the farmer's and the agent's hard work, the farmer is now using the record-keeping system, milk replacer, a synchronization system, and a milking machine.

**Farmer Increases Flock from 2 to 25,  
Increases Profits 15-Fold**

Mazen Salami, a 42-year-old man from Beit Lead village (15 kilometers west of Nablus city), became a sheep owner in the village after having run different types of businesses in different places, such as poultry and stone-cutting. His flock consisted of only two sheep. This was due to the little experience he had in raising sheep. After the Land O'Lakes agent worked with him, it took him less than one year to expand his two-sheep flock to 25 head of sheep.

This impact story started for Mr. Mazen when one of the Land O'Lakes' extension agents met him at his home, which is close to the agent's best friend's house. Mazen inquired about his job with Land O'Lakes, about the project's interventions in farm management, and the profit that the farmers get from such projects. The agent explained how interventions on reducing mortality rate, using milk replacement, and introducing improved genetics (the Awassi rams program) were very successful. Mazen decided to expand his business. The agent kept visiting him, giving him brochures on sheep-raising and other information. He was given guidance on how to treat newborn animals with disinfectants, the importance of isolating the newborns from the older animals, the proper way of feeding the ewes in different stages, and control of external and internal parasites. Such activities led to a healthy and highly productive flock.

He became one of the biggest and best organized farmers in the village spite the fact that he spends his days at the stone-cutting factory. The key is that his wife is in charge of the daily activities of the farm. Cheese revenues, the primary product of the farm, increased from \$10 to \$150 in the milking season, which means that revenues from cheese increased 15-fold within one year.

✓ **Farmer begins with only two sheep – expands to 25 sheep.**

✓ **Cheese revenues increase 15-fold in one year**