

H. D. Am 307

WEST BANK DEVELOPMENT ASSISTANCE

For

Co-operatives and Municipalities

Fiscal Year 1983

TABLE OF CONTENTS

I.	INTRODUCTORY NOTES	
II.	THE INDIVIDUAL PROPOSALS FOR SUBGRANTS	<u>Page</u>
1.	Tulkarm Agricultural Marketing Cooperative Land Reclamation Project	10
2.	Tarqumiya Cooperative Land Reclamation Project #2 for the Southeast Hebron Region	29
3.	West Bank Agricultural Cooperative Mechani- zation Projects #3	44
4.	Wadi Fouqin Agricultural Cooperative Water Management Project	57
5.	Al-Nassaria Cooperative Dairy Facility Project	72
6.	Al-Nahda Cooperative Dairy Facility Project	89
7.	Ramallah Poultry Cooperative Hatchery Project	107
8.	Halhul Municipal Wholesale Fruit and Vegetable Market Project	120
9.	Jericho Municipal Mineral Water Bottling Project	134
10.	Beit Jala Municipal Light Industry Center	147
III.	FINANCIAL PLAN	
IV.	BUDGET SUMMARY	

PROJECT TITLE: West Bank Development
Assistance (Fiscal Year 1983)

PROJECT LOCATION: West Bank

PVO NAME AND LOCATION: American Near East Refugee Aid
Washington, D.C. and East
Jerusalem

HEADQUARTERS: 1522 K Street N.W.
Suite 202
Washington, D.C. 20005

CONTACT PERSON: Peter Gubser
President

DATE OF SUBMISSION TO AID: May, 1983

TOTAL REQUEST: \$2,370,200

I. INTRODUCTORY NOTES

A. Introduction

The individual proposals for subgrants are found in section II of this general proposal.

The individual proposals were prepared in the AID-accepted "Care Multi-Year Planning Project Proposal Format" with slight adjustments which make the Format conform to the needs of these particular proposals.

B. Considerations Raised from ANERA's Previously-Funded Proposals

1. Loans versus Grants

In past years AID reviewers of ANERA's proposals noted that some of the subgrants should have been loans. ANERA staff agrees with this judgement and had definitely been aware of it at the time the subgrants were being developed. Due to local constraints, substantial loans in place of subgrants were and are not possible at this time.

In response to AID comments on previous proposals, ANERA probed broadly in an attempt to find an acceptable means for development loan-making and servicing. In this process, ANERA looked into both internal and external institutions and mechanisms. Despite these efforts, no viable means were found. Upon request, ANERA staff would be pleased to provide AID with details of these efforts. ANERA continues to explore in this area and will keep AID informed of positive developments.

2. Regional Planning

The need for a greater level of regional planning for the West Bank and Gaza has been expressed by Congress and AID officials. ANERA has been involved in such efforts in various ways:

-- ANERA staff closely co-ordinates its activities with other PVOs (both AID and non-Aid funded) working in the area. We attempt to make certain that overlap in programs is minimal, all regions of the area are covered, and all major relevant sectors and functions in the society are addressed, albeit in a very modest fashion. This co-ordination is executed via frequent meetings and continual review of each other's programs.

-- The reader will note the integrated, co-ordinated and complementary nature of a number of the subgrants in the last four years' and this year's proposals. Many of the previous and currently-proposed subgrants build upon each other. Also, as the reader will observe, they mesh with the plans of relevant authorities where appropriate. This pattern will be continued in the coming year.

-- It should be noted that to date, the ANERA staff is not pleased about its inability to promote industrial projects (with the exception of food processing). Although we continue to explore this sector, a mechanism for entering this commercial sector has not yet been found. The Beit Jala project in this proposal is an initial step in this direction, but it is not, as the analysis indicates, as attractive economically as desired.

3. Project Funding

With respect to co-operative projects, our proposed sub-grant is usually in the range of 40-50% of the project's capital costs. This is the level recommended by the regional co-operative directors as well as the agricultural experts. The level is also co-ordinated with other funding sources. From ANERA's experience in the West Bank/Gaza, this level appears to be the critical line between undertaking the project or not undertaking it. With respect to how the farmers come up with their share of the project's capital costs, generally there are two sources. First, most co-operatives are able to obtain long-term, low-interest (1%) project-oriented loans from the Jordan Co-operative Organization. When paid back, these funds (which fed the original loans) are to be made available again as long-term, low-interest loans for cooperative projects. Second, the farmers partially fund the projects by paying share capital to the co-operative. All members are required to pay the same share after a decision to undertake the project has been voted by the co-op's general assembly. When the co-op membership is high, each member's share capital is relatively modest. However, when membership is relatively low, the share is higher. In this case, the farmer may have to borrow from a relative or tap the remittances sent to the West Bank/Gaza by Palestinians working outside.

Funding levels for non-co-operative projects largely stem from (1) negotiations with the potential grantee, (2) agreements with other funders, and (3) the availability of grant funds.

Please note, that in each of the projects, AID would be leveraging an amount at least equivalent to the amount it invests. For some projects the leveraged amount is a multiple of 3 to 4.

6

Many or most of the projects will not occur without AID/ANERA participation.

4. Municipal Projects

The Israeli Civilian Governor for the West Bank gave ANERA a list of municipalities for which he said he would approve any ANERA proposed project. In an attempt to be responsive to these authorities, we are proposing projects with three municipalities on the list. Two of them are quite feasible in a financial and an economic sense. One lacks total feasibility in an economic sense. We include it in any case because of the request by the authorities and the other reasons noted in the project description.

5. Technical Points

The prices or costs stated in the proposal for all items (e.g. fuel, produce, construction, services, labor, equipment, etc.) are all spring 1983 prices (or fall 1982 where relevant). The prices are quoted by merchants and/or agricultural and cooperative departments officials and/or cooperative officers.

With respect to the projects, the reader will note that for most of the projects there is considerable room for elasticity of costs and/or benefits. Thus if input costs of cultivation should take a considerable jump due to, let us hypothesize, a jump in the price of fuel, the project would still be feasible. Conversely, if produce prices dropped, the project would be feasible. This elasticity factor may be observed in the financial B/C ratios for each project as well as the economic B/C ratios and net present worths.

6. Waiver

ANERA hereby requests a waiver so that the procurement provisions of this proposed grant will conform to the procurement provisions of last year's grant, No. AID/NE-G-1708, namely the \$500,000 waiver.

7

7. Grant Level

If the entire proposal cannot be funded, ANERA hereby requests the authority to select those sub-grantees to receive funding. If this proposal is to be added (amended) to the previous grant, ANERA requests authority to select those sub-grants in the proposals to receive funding from the combined funding total of the grants.

C. Conversion Notes

1. 1 hectare = 10 dunums; 1 acre = 4 dunums
2. Israeli currency rapidly declined in value vis-a-vis the U.S. dollar during the past year as these sub-grant proposals were **prepared**. We have tried to use a consistent exchange rate of 40 Israeli shekels (IS40) to one U.S. dollar which is the spring 1983 rate.

D. Implementation Plan

ANERA modus operandi is to work with existing indigenous institutions in the West Bank and Gaza. The proposed FY 1983 ANERA project will have two stages:

- 1) Completion of a Grant Agreement between AID and ANERA.
- 2) Completion of a Sub-grant Agreement between ANERA and each of the Sub-Grantees.

At the signing of the Sub-Grant Agreement between ANERA and each participating institution, the institution will be expected to submit a mutually agreed upon detailed implementation plan for the project, including budget, timetables, staff involvement, sketches of construction anticipated, and other pertinent details.

Implementation Schedule: On the assumption that the FY 1983 ANERA/AID grant agreement will be signed by...August 1, 1983 and that a Federal Reserve Letter of Credit for the full amount of the grant is opened in ANERA's favor and that grant funds are made available* to ANERA (at the latest) by...September 1, 1983, the following schedule is proposed:]

- 1) Sub-grant agreements will be signed by representatives of ANERA and the sub-grantee organizations between September 1, 1983 and December 31, 1983.
- 2) implementation plans and target dates for the use of grant funds will be submitted by sub-grantees to ANERA between...September 1, 1983 and December 31, 1983 and by ANERA to AID by.....January 30, 1984
- 3) ANERA disbursements to sub-grantees (in one or two increments to each) will be completed by...July 31, 1984
- 4) interim evaluations of implementation progress for each sub-grant will be submitted by ANERA to AID on or bySeptember 31, 1984
- 5) sub-grantee projects funded by this grant will be completed by.....December 31, 1984
- 6) a final evaluation report for each sub-grantee project will be submitted by ANERA to AID by.....March 31, 1985
- 7) a final report on the utilization of grant funds will be sent by ANERA to AID by.....March 31, 1985

* Three-quarters of the operation expenditures to be available to ANERA by fall, 1983. See Section III, D below.

II. INDIVIDUAL PROPOSALS FOR SUB-GRANTS

TULKARM REGIONAL AGRICULTURAL COOPERATIVE
MECHANIZATION PROJECT

I. INTRODUCTION

The purpose of this project is to help the Tulkarm cooperative establish a regional mechanized unit to provide land reclamation services to its members and the villagers of the area it serves. At another level, the purpose is to enhance the incomes of the two groups by bringing land currently not arable into productivity via land reclamation. Another intended effect is to encourage some farmers who would otherwise leave to remain on their farms by providing more and improved land for them to cultivate. This project is directly comparable to previous years' ANERA projects in the West Bank.

The beneficiary target groups are two. First, 350 members of the Tulkarm cooperative will receive the services as well as enjoy the benefits of a strengthened cooperative. This number is expected to increase to 600 or more in 2 years. Second, 500 or more non-cooperative farmers in the area would be able to employ the services of the cooperative. It is projected that about 10,000 dunums would be reclaimed over 10 years.

The cooperative's contribution toward the project would constitute 65 percent of the total capital cost; ANERA would contribute 35 percent. Tulkarm is a town located west of Nablus on the green line.

ANERA's official relationship to the project would last one year. The cooperative then would continue on its own indefinitely. It intends to set aside funds regularly so as to be able to replace equipment.

II. PROJECT DESIGN

Statement of Problems

The problem involves non-productivity of land that is difficult to cultivate because of excessive rocks or slopes. The short supply of bulldozers and small orchard tractors available for agricultural work has meant that much of this heavy work is done by hand or with animals. This is both inefficient and costly due to the high cost and scarcity of labor. The inability of the farmers to improve the productivity of their land without mechanization results in an inadequate per capita income from agriculture.

Tables No. 1, 2, and 3 demonstrate the agricultural situation and practices in the project area in terms of land, population, land use, production costs and income.

Table No. 1: Population and Land Area

1) Population	130,000
2) Total Area	410,000 dunums
3) Cultivated Area	338,000 dunums
4) Uncultivable	18,000 dunums
5) Not cultivated, but arable with reclamation	54,000 dunums

12

Table No. 2: Current Land Use

<u>Crop</u>	<u>Area in Dunums</u>
Olives	220,500
Citrus (irrigated)	10,000
Stone Fruits (partly irrigated)	8,500
Almonds	31,100
Vegetables (irrigated)	13,500
Field Crops	54,700
<hr/>	
Total	338,300

Table No. 3: Agricultural Production per dunum, Production Costs and Market Prices

<u>Crop</u>	<u>Production per dunum</u>	<u>Production⁽¹⁾ Costs</u>	<u>Gross Income⁽²⁾ per dunum</u>	<u>Net Income per dunum</u>
Olives	280 kgs=Olives = 70 kgs oil (net)	\$40	\$210	\$170
Citrus irrigated	4,000 kgs.	\$390	\$1000	\$610
Stone Fruits irrigated	2,000 kgs.	\$120	\$750	\$630
Almonds	100 kgs	\$ 40	\$300	\$260
Vegetables irrigated	(3)	\$510	\$1,250 ⁽³⁾	\$740
Field Crops	700 kgs. (incl straw)	\$ 30	\$210	\$180

(1) Production costs include:

- Olives: fertilizing, spraying, pruning, plow, miscl.; the figure is higher than for Tarqumiya because prices for labor etc. are higher.

Table No. 3 continued on next page...

(Table No. 3 cont'd)

- Citrus: spraying, fertilizer, cultivation, irrigation, some labor
- Stonefruits: spraying, fertilizer, cultivation, some irrigation
- Almonds: spraying, fertilizer, cultivation
- Vegetables: spraying, fertilizer, seeds, plowing, irrigation costs, some labor
- Field crops: cultivation, seeds, fertilizer

(2) Prices used are 1982 or 83 where relevant: olive oil - \$3 per kg.; citrus - 10 IS per kg.; stone fruits 15 IS per kg.; almonds - 120 IS per kg.; vegetables see note⁽³⁾; wheat and straw alike - 12 IS per kg.

(3) Production per dunum varies according to the vegetable.

This figure is based on actual production and market prices of cucumbers and tomatoes^{respectively} in the following pattern:

4750 kgs. per dunum @10 IS per kg. = \$1187.5 per dunum

3500 kgs. per dunum @15 IS per kg. = \$1312.5 per dunum

\$2500 ÷ 2 = 1250

The above calculation assumes an equal dunumage of cucumbers and tomatoes.

These tables reveal a relatively low income level. Added to the non-use of potentially cultivable land, these factors combine to result in farm family income which is lower than the realizable potential.

This low income level, aside from the humanitarian concern it involves for the needy, results in the emigration of manpower from the region and deprives the region of surplus capital from self-generated development. The non-productivity of potentially productive land also hinders the farmer in his/her ability to meet the needs of the local and export markets.

Final Goals

The Tulkarm coop intends to establish its machinery unit so that it can cover the land reclamation needs of the region around Tulkarm. The land reclamation plan of the coop runs for 10 years and should be able to reclaim about 10,000 dunums.

The land use pattern for the reclaimed land is somewhat complex. The pattern will be as laid out in Table No. 4. Naturally the ultimate decision makers on this pattern are the farmers. The Table No. 4 estimate is made by the agricultural department authorities based on the nature and location of the land to be reclaimed.

Table No. 4: Expected Land Use Patterns of the Project

<u>Crop</u>	<u>Total No. of Dunums</u>	<u>No. of Dunums reclaimed per yr.</u>	<u>%</u>
1) Olives	4000	400	40
2) Citrus	2000	200	20
3) Stone Fruits	2000	200	20
4) Almonds	1000	100	10
5) Vegetables	500	50	5
6) <u>Field Crops</u>	500	50	5
Total	10,000	1000	100

With respect to items (1), (2), (3), and (4) in Table No. 4, as the farmer reclaims land, typically he/she will plant trees. However, in the first few years, the trees are not productive. To make up for this lack of yearly income generation, the farmer plants vegetables in between the trees and provides them with supplemental irrigation. In this manner, the farmer realizes an income from the reclaimed land in the initial years. The costs and benefits of the initial vegetable production as well as the later citrus olive and stone fruit production is included in Table No. 14, "Computation of Benefit/Cost Ratio and Net Present Worth of the Project." Namely, years 1-5 represent vegetable production and years 6-10 represent tree production.

Table No. 5: Vegetable Infiltration Production

Farmer Costs ⁽¹⁾	\$ 72
Farmer Gross Income	\$322
Farmer Net Income	\$250

(1) Includes plowing, spraying, fertilizer, seeds, supplementary water. Please note that these vegetables are irrigated in a supplementary manner and thus the income is greater than for dry vegetables.

With respect to vegetable and field crop production, the figures in Table No. 5 and the discussion re infiltrated crops do not apply. As in Tables No.5 and 6, item (5) and (6) are

constant throughout the years, but items (1),(2),(3),(4) alter between years 5 and 6.

Table No. 6: Income of 1000 Dunums During First 5 Years of Project - Constant Prices

<u>Crop</u>	<u>No. of Dunums</u>	<u>Production Costs</u>	<u>Gross Income</u>	<u>Income</u>
1)Olives				
2)Citrus				
3)Stone Fruits	Infiltrated 900	\$64,800	289,800	225,000
4)Almonds				
5)Vegetables	50	25,500	62,500	37,000
6)Field Crops	50	1,500	10,500	9,000
Total	1,000	91,800	362,800	271,000

Table No. 7: Income of 1000 Dunums During Second 5 Years of Project - Constant Prices

<u>Crop</u>	<u>No. of Dunums</u>	<u>Production Costs</u>	<u>Gross Income</u>	<u>Income</u>
1) Olives	400	16,000	84,000	68,000
2) Citrus	200	78,000	200,000	122,000
3) Stone Fruits	200	24,000	150,000	126,000
4) Almonds	100	4,000	30,000	26,000
5) Vegetable	50	25,500	62,500	37,000
6) Field Crops	50	1,500	10,500	9,000
Total	1,000	149,000	537,000	388,000

Naturally in Table No. 14, the figures from Tables Nos. 6 and 7 are discounted rather than constant.

Project Activity Targets

Within one year of the project being funded, ANERA's official involvement in the project will be terminated. The equipment will be purchased, the additional staff hired, and the cooperative will then operate the unit indefinitely.

III. PROJECT OVERVIEW AND STRATEGY

This project is part of a West Bank-wide plan for land reclamation through the establishment of regional cooperative machinery units. This project is seen as complementary to the other land reclamation projects in the area, Dhahariya, Dura, Si'ier, Halhul, Nablus, Azzoun, Qalqilia, and Tarqumiya.

Project Impact

Predicting possible positive or negative effects of this project on other than the target groups is problematic. On a very general level, with success the project will contribute to the economic welfare of the immediate community and the West Bank as a whole. By making employment more attractive in the area, demographic changes in the region will be milder. On a specific level, one might predict that the coop's agricultural machine unit might put individual entrepreneurs out of business. This is not the case according to numerous observers of the area as well as the land reclamation requirements noted above. There exists sufficient work for all; currently few entrepreneurs are operating in this field of activity.

JE

The impact of the project on women is essentially neutral. They will benefit from the overall project in the same way men will. The impact on values and traditions is best stated as a slight boost in a process that has already commenced. This is the mechanization/modernization of agriculture. The farmers definitely appreciate the value of appropriate agricultural machinery and realize this will have an impact on their lives, a positive one in their minds.

Project Continuity

ANERA will be officially involved in the project only for one year, the period during which the equipment will be purchased. The cooperative will then operate its machinery unit on its own.

The project's continuity, i.e. the continued operation of the mechanized agricultural unit, is assured in three ways. First, the coop will be covering all administrative costs. Second, the coop will be paid for the services rendered. Third, the coop will set aside an adequate portion of its income from the unit for necessary replacement of equipment. Technically, the equipment is not difficult to operate and repair. Sufficient skilled operators exist in the West Bank.

Project Potential

The need for land reclamation is very high on the West Bank, and hence the demand for machinery services. Consequently,

the replication potential of this project is expected to be very high due to the high proportion of farmers who wish to reclaim land.

Project Constraints

None are foreseen at this time.

Project Summary

- 1) Development -yes
- 2) Training -no
- 3) Poorer elements -yes
- 4) Self-sufficiency -yes
- 5) Self-help/complement local efforts -yes

IV. PROJECT IMPLEMENTATION

Pre-implementation Conditions

The only constraint is obtaining the approval of the military government for the project. The project has been recommended by the cooperative department. Once the GOI approval is obtained the cooperative may implement the project. It should be noted that GOI approved comparable ANERA projects in Tarqumiya and Nablus.

Implementation Plan and Schedule

The first phase is the purchase of the equipment. This the Cooperative Management will do; ANERA will oversee this to insure that proper bidding procedures are observed.

Once the funds are available, this phase will take three months to a year to obtain delivery of all material. The second phase is hiring staff, a matter of a very short time. ANERA will not be officially involved in this phase. The third phase is the operation of the unit which will continue indefinitely. Again, ANERA will not be officially involved in this phase.

With respect to environmental concerns, it should be noted that the proposed project will improve the general quality of agricultural land, by removing rocks, grading fields, terracing farms and opening agricultural and access roads. In addition, newly opened land will be planted with fruit trees, vegetables and forest trees. Implementation of these projects might have the following minor environmental consequences:

- loss of pastures
- damage to archeological sites
- possible changes in the natural drainage system
which might increase erosion
- damage from bulldozers travelling to and from fields

The agricultural cooperative running this project should seek the advice of the archeological department in the region to avoid unnecessary damage to archeological and historical sites. Although this project is developing land that is not now used for grazing animals, the coop should recognize the possibility of future infringements on grazing land. The cooperative should seek the advice of land-use planners and surveyors to avoid negative impact from changing natural

drainage systems. Finally, the coop should follow adequate precautions to avoid damage to infrastructure serviced by bulldozers especially in the grading of new roads.

It is important that the proper operation, maintenance and safety procedures be enforced at the project sites to avoid these problems. The project agreement will require that environmental issues be properly addressed during implementation.

Technical Considerations

Technical considerations will not be a negative constraint, since the machinery is generally commonplace. Operation, repair and maintenance are familiar on the West Bank. With respect to environmental concerns, the coop will hire a qualified agronomist to manage the program and will be under the supervision, where necessary, of the Department of Agriculture and Cooperatives. An ANERA consultant was trained by AID in these matters and will be available for consultation on them.

Procurement

Below is a list of machinery and equipment to be purchased.

Table No. 8: Procurement Requirements

1) Bulldozer 955 Caterpillar	\$ 152,000
2) 2 large tractors 80 H.P.	48,000
3) 4 orchard tractors 60 H.P.	60,000
4) 32 equipment items	140,000
<hr/>	
Total	\$ 400,000

The equipment, above, will be purchased in the West Bank and Israel. Delivery will occur from one month to nine months after the project grant is finalized. The cooperative will make the purchases ANERA will insure that proper bidding procedure is followed when necessary.

Personnel Requirements

Table No. 9: Personnel Requirements

1) Manager (agronomist)		
JD 150/month x 13 months/year		\$ 5,850
2) 8 drivers		
JD 100 each/per month x 13 months/year		31,200
3) Mechanic		
JD 130/month x 13 months/year		5,070
	+ 10%	4,212
<hr/>		
	Total	\$ 46,332

V. PROJECT EVALUATION

The project may be evaluated against the following:

A. Estimated Tangible Benefits

- 1) Increase in the total cultivable area by about 1000 dunums each year (see above).
- 2) Opening of agricultural roads in the project area.
This is one of the more important services, i.e., improvement of farm access.

26

B. Estimated Intangible Benefits

- 1) An increase in agricultural modernization
- 2) A step toward agricultural mechanization
- 3) Increasing or retaining employment opportunities

C. Financial Analysis

1) Table No. 10: Capital Costs

1. Land, 3 dunums x JD 10,000	\$ 90,000
2. Shed for machines 400 sq. meters x JD 20	\$ 24,000
3. Machinery and equipment	\$400,000
+ 10%	\$ 51,000
<hr/>	
Total	\$ 565,400

2) Table No. 11: Operational Costs

1. <u>Bulldozer and Tractors</u> 62,000 x IS 18.5 litre -	\$ 28,675
2. <u>Administration</u> including central cooperative share	46,332
3. <u>Depreciation</u>	
a) Machinery 10%	40,000
b) Shed 10%	2,400
4. <u>Maintenance</u> 2%	8,000
5. <u>Other</u> (5% of the above)	6,270
+ 10%	13,168
<hr/>	
Total	\$ 144,845

3) Table No. 12: Project Income

1. Bulldozer x 9 months x 25 days per month x 10 hours/day x JD 10/h	\$ 67,500
2. 6 tractors x 10 months x 25 days x 10 hours/day x JD 4.5	\$ 202,500
<hr/>	
Total	\$ 270,000

4) Table No. 13: Benefit/Cost Ratio

1. Project estimated income	\$ 270,000
2. Project estimated costs	\$ 144,845
<hr/>	
Benefit/Cost Ratio =	(1.86)

The above analysis indicates the financial soundness of the cooperative's phase of the project or of the machinery unit itself.

D. Economic Analysis

For the economic analysis, we look at the B/C ratio and Net Present Worth for the farmers. Each year, the farmers will reclaim 1000 dunums. Thus, for the purpose of analysis here in Table 14, we shall look at the costs and benefits relating to 1000 dunums of land to be reclaimed and then used for production.

The capital items cited in Table No. 14 for 1000 dunums are:

a) Land reclamation costs which consist of one year's bulldozer income and half the tractor income (Table No. 12) ⁽¹⁾	\$168,750
b) Seedlings and labor to plant seedlings JD 5 + JD 4 = JD 9 per dunum for 900 dunums. ⁽²⁾	<u>\$ 24,300</u>
Total	\$193,050

(1) The other half of the tractor income is applied as a cost in the farmers' cultivation. Initially, the tractors
Notes continue next page...

25

(1) continued

will be partially used on land not reclaimed under this project. Eventually, the entirety of their services would be utilized on the reclaimed land.

(2) What could be considered capital costs for irrigation of the vegetables is included in Table No. 14 in the production costs. Costs here would be the plastic (which has to be replaced each year), tubing and drippers (which must be replaced at varying frequencies, depending on the kind), and water. The costs cited here come from the agricultural department in Tulkarm.

Salvage value is the discounted costs of the land reclamation value in year 11. The depreciation of the land reclamation unit is not a separate item since depreciation at 10% a year is included in a) land reclamation cost. All other figures are from tables found above in the project description. Please note that change in production costs and benefits (income) on year 6 reflects the change from vegetables to fruit on most of the dunumage as the fruit trees reach maturity.

Table No. 14 then shows that for the farmers the B/C ratio is (3.04) and the Net Present Worth after 10 years is \$1,646,840. The two figures indicate the economic feasibility and soundness of the project.

Essentially, then, the project is replicated each year

for ten years until the farmers have reclaimed 10,000 dunums and the machinery unit is fully depreciated. In other words, Table No. 14 is repeated each year, naturally at properly discounted prices.

As a final note, Table 14 also indicates the economic feasibility of the cooperative's mechanized land reclamation unit since it essentially is part of the capital item in the table, but phased over 10 years.

2) Economic Analysis:

Table No.14: Benefit/Cost Analysis and Net Present Worth

Project's Economic Life Years	Capital Item \$	Production Cost \$	Gross Costs \$	Present Worth of costs at 12% discount factor \$	Gross Benefits \$	Present Worth of Benefits at 12% discount rate \$
1	193,050	91,800	284,850	254,371	362,800	323,980
2						
3						
4		367,200	367,200	248,962	1,451,200	983,914
5						
6						
7						
8		745,000	745,000	304,854	2,685,000	1,098,702
9						
10						
Salvation value of reclamation in 11th year						48,431
Total	193,050	1,204,000	1,397,050	808,187	4,498,200	2,455,027

A) Benefit/Cost Ratio at 12% Discount Rate (3.04)

B) Net Present Worth of One Project at 12% Discount Rate = \$1,646,840

27

VI. PROJECT FINANCE

Total Capital Costs	\$ 565,400
Cooperative Contribution	365,400
AID/ANERA Contribution	200,000
<hr/>	
Grant Request from AID	\$ 200,000

TARQUMIYA REGIONAL AGRICULTURAL COOPERATIVE
MECHANIZATION PROJECT

I. INTRODUCTION

The purpose of this project is to help the Tarqumiya cooperative expand its regional mechanized unit to provide land reclamation services to its members and the residents of the area around Hebron town and the villages of Taffuh and Beit Kahel. At another level, the purpose is to enhance the incomes of the two groups by making that part of their land currently not arable into productive land via land reclamation. Another intended effect is to encourage some farmers who would otherwise leave to remain on their farms by providing more and improved land for them to cultivate. This project is directly comparable to previous years' ANERA projects in the West Bank.

The beneficiary target groups are two. First, since ANERA helped the Tarqumiya coop establish a land reclamation unit four years ago, the coop has virtually doubled in size. It now has 1250 members and thus greater demand for reclamation. Of this number, about 125 are in the project area and only receive olive pressing services. It is expected that from the project area another 125 or more will join the coop within a year of the initiation of the project. Non-coop members would be served by the project as well. It is projected that about 10,000 dunums will be reclaimed over 10 years.

The cooperative's contribution toward the project would constitute 50 percent of the total capital cost; ANERA would contribute 50 percent. The area to be served surrounds Hebron city.

ANERA's official relationship to the project would last one year. The cooperative then would continue on its own indefinitely. It intends to set aside funds regularly so as to be able to replace equipment.

II. PROJECT DESIGN

Statement of Problems

The problem involves non-productivity of land that is difficult to cultivate because of excessive rocks or slopes. The short supply of bulldozers and small orchard tractors available for agricultural work has meant that much of this heavy work is done by hand or with animals. This is both inefficient and costly due to the high cost and scarcity of labor. The inability of the farmers to improve the productivity of their land without mechanization results in a low per capita income from agriculture.

Tables Nos. 1,2, and 3 demonstrate the agricultural situation and practices in the project area in terms of land use, production costs and income.

Table No. 1: Hebron Area Land Use in Dunums

	Hebron	Taffuh	Beit Kalel
Grapes	24,890	2,156	1,200
Olives	5,730	100	70
Fruit Trees	8,000	2,000	720
Nonarable, but reclaimable	7,000	4,500	2,300

Table No. 2: Production Costs - Hebron Area per Dunum

	Plowing	Spraying	Pruning	Fertilizing	Other	Total
Grapes	\$15	12	9	6	6	48
Olives	\$15	0	9	6	3	33
Fruits	<u>\$15</u>	<u>9</u>	<u>9</u>	<u>6</u>	<u>6</u>	<u>45</u>
Total	45	21	27	18	15	

Average cost of cultivation \$42 per dunum per year.

Table No. 3: Average Income per Dunum

	Grapes	Olives	Stone Fruits
Production per dunum	2.5 tons	280 kg.=70kg oil	2 tons
Market price	\$240/ton	\$3000/ton of oil	\$288/ton
Gross Income/Dunum	\$600	\$210	\$576

Average Gross Income per dunum $\$1386 \div 3 = 462/\text{dunum}$

<u>Production Costs</u> <u>per Dunum</u>	Grapes	Olives	Stone Fruits
	\$ 48	\$33	\$ 45

(cont'd from Table No. 3: Average Income per Dunum)

Average Gross Costs per dunum = \$42/dunum⁽¹⁾

Average net income per dunum = \$420⁽¹⁾

(1) For the sake of conservative forward estimates, this table assumes that reclaimed land will be planted equally in grapes, olives and stone fruits.

The non-use of potentially cultivable land results in farm family income which is lower than the realizable potential. This low income level, aside from the humanitarian concern it involves for the needy, results in the emigration of manpower from the region and deprives the region of surplus capital from self-generated development. The non-productivity of potentially productive land also hinders the farmer in his/her ability to meet the needs of the local and export markets.

Final Goals

The Tarqumiya cooperative intends to expand its machinery unit so that it can cover the land reclamation needs of the region around Hebron city, Taffuh, and Beit Kahel. The land reclamation plan of the cooperative runs for 10 years and should be able to reclaim about 10,000 dunums.

As the farmer reclaims land, typically he/she will plant trees and vines. However, in the first few years, the trees and vines are not productive. To make up for this lack of yearly income generation, the farmer plants vegetables in between the vines and trees and provides them with supplemental irrigation. In this manner, the farmer realizes an income from the reclaimed

land in the initial years. The costs and benefits of the initial vegetable production as well as the later grape, olive and stone fruit production is included in Table No. 10 "Computation of Benefit/Cost Ratio and Net Present Worth of the Project" Namely, years 1-5 represent vegetable production and years 6-10 represent vine and tree production.

Table No. 4: Vegetable Infiltration Production

Farmers Costs ⁽¹⁾	\$ 72
Farmer Gross Income	\$322
Farmer Net Income	\$250

(1) Includes plowing, spraying, fertilizer, seeds, supplementary water. Please note that these vegetables are irrigated in a supplementary manner and thus the income is greater than for dry vegetables.

Project Activity Targets

Within one year of the project being funded, ANERA's official involvement in the project will be terminated. The equipment will have been purchased, the additional staff hired, and the cooperative will then operate the unit indefinitely.

III. PROJECT OVERVIEW AND STRATEGY

This project is part of a West Bank-wide plan for land reclamation through the establishment of regional cooperative machinery units. This project is seen as complementary to the

other land reclamation projects in the area, Dhahariya, Dura, Si'ier, Halhul, Nablus, Azzoun, Qalqilia, and Tulkarm.

Project Impact

Predicting possible positive or negative effects of this project on other than the target groups is problematic. On a very general level, with success the project will contribute to the economic welfare of the immediate community and the West Bank as a whole. By making employment more attractive in the area, demographic changes in the region will be milder. On a specific level, one might predict that the coop's agricultural machine unit might put individual entrepreneurs out of business. This is not the case according to numerous observers of the area as well as the land reclamation requirements noted above. There exists sufficient work for all; currently few entrepreneurs are operating in this field of activity.

The impact of the project on women is essentially neutral. They will benefit from the overall project in the same way men will. The impact on values and traditions is best stated as a slight boost in a process that has already commenced. This is the mechanization/modernization of agriculture. The farmers definitely appreciate the value of appropriate agricultural machinery and realize this will have an impact on their lives, a positive one in their minds.

Project Continuity

ANERA will be officially involved in the project only for one year, the period during which the equipment will be purchased. The cooperative will then operate its machinery unit on its own.

The project's continuity, i.e. the continued operation of the mechanized agricultural unit, is assured in three ways. First, the cooperative will be covering all administrative costs. Second, the coop will be paid for the services rendered. Third, the coop will set aside an adequate portion of its income from the unit for necessary replacement of equipment. Technically, the equipment is not difficult to operate and repair. Sufficient skilled operators exist in the West Bank.

Project Potential

The need for land reclamation is very high on the West Bank, and hence the demand for machinery services. Consequently, the replication potential of this project is expected to be very high due to the high proportion of farmers who wish to reclaim land.

Project Constraints

None are foreseen at this time.

Project Summary

- 1) Development -yes
- 2) Training -no
- 3) Poorer elements -yes
- 4) Self-sufficiency -yes
- 5 Self-help/complement local efforts -yes

IV. PROJECT IMPLEMENTATION

Pre-implementation Conditions

The only constraint is obtaining the approval of the military government for the project. The project has been recommended by the cooperative department. Once the GOI approval is obtained the cooperative may implement the project. It should be noted that GOI approved a comparable ANERA project for the Tarqumiya cooperative four years ago and approved two complementary projects in subsequent years, including one 1982.

Implementation Plan and Schedule

The first phase is the purchase of the equipment. This the Cooperative Management will do; ANERA will oversee this to insure that proper bidding procedures are observed. Once the funds are available, this phase will take three months to a year to obtain delivery of all material. The second phase is hiring staff, a matter of a very short time. ANERA will not be officially involved in this phase. The third phase is the operation of the unit which will continue indefinitely. Again, ANERA will not be officially involved in this phase.

With respect to environmental concerns, it should be noted that the proposed project will improve the general quality of agricultural land, by removing rocks, grading fields, terracing farms opening agricultural and access roads. In addition, newly opened land will be planted with fruit trees, vegetables and

forest trees. Implementation of these projects might have the following minor environmental consequences:

- loss of pastures
- damage to archeological sites
- possible changes in the natural drainage system which might increase erosion
- damage from bulldozers travelling to and from fields

The agricultural cooperative running this project should seek the advice of the archeological department in the region to avoid unnecessary damage to archeological and historical sites. Although this project is developing land that is not now used for grazing animals, the coop should recognize the possibility of future infringements on grazing land. The cooperative should seek the advice of land-use planners and surveyors to avoid negative impact from changing natural drainage systems. Finally, the coop should follow adequate precautions to avoid damage to infrastructure serviced by bulldozers especially in the grading of new roads.

It is important that the proper operation, maintenance, and safety procedures be enforced at the project sites to avoid these problems. The project agreement will require that environmental issues be properly addressed during implementation.

Procurement

Below is a list of machinery and equipment to be purchased.

Table No.5: Procurement Requirements

<u>Procurement Requirements</u>	<u>Costs Estimates</u>
1) Bulldozer, Caterpillar 955	\$ 152,000
2) 1 large tractor 80 HP	22,000
3) 3 small tractors 47 HP	45,000
4) 20 items of equipment	43,100
5) 2 trailers 3 tons capacity	10,780
+ 10%	27,288
<hr/>	
Total	\$ 300,168

The project does not require land purchase or construction of a storage shed because the cooperative will use the already extant facilities in the south Hebron district center at Al-Hijri. The equipment, above, will be purchased in the West Bank and Israel. Delivery will occur from one month to nine months after the project grant is finalized. The cooperative will make the purchases. ANERA will insure that proper bidding procedure is followed when necessary.

Personnel Requirements

No ANERA personnel will be directly involved in the project. The coop will provide its own personnel for the unit as follows:

Table No. 6: Personnel Requirements

<u>Personnel Requirements</u>	<u>Cost Estimates</u>
1) Manager (agronomist) JD 150 x 13 months	\$ 5,850
2) 4 drivers JD 100 x 13 months	15,600
+ 10%	2,145
<hr/>	
Total	\$ 23,595

V. PROJECT EVALUATION

The project may be evaluated against the following:

A. Estimated Tangible Benefits

- a) Increase in the total cultivable area by about 1000 dunums each year (see above).
- b) Opening of agricultural roads in the project area. This is one of the more important services, i.e., improvement of farm access.

B. Estimated Intangible Benefits

- a) An increase in agricultural modernization
- b) A step toward agricultural mechanization
- c) Increasing or retaining employment opportunities

C. Financial Analysis

1) Capital Costs

Table No. 7: Capital Costs Estimates

a) Equipment	\$ 300,168
<hr/>	
Total	\$ 300,168

Note: Land and buildings are not required. The Cooperative will house the machinery unit at its South Hebron branch center in Al-Hijri.

2) Operation Costs

Table No. 8: Operational Costs Estimates

a) Administration		\$ 23,595
b) Fuel and oil for bulldozer and tractors 46,333 liters/year x IS 18.5		21,430
c) Depreciation 10%		30,017
d) Maintenance 2%		6,003
e) Miscellaneous 5%		4,052
	+ 10%	8,510
<hr/>		
Total		\$ 93,607

CP

3) Project IncomeProject Income EstimatesTable No. 9: Income Estimates (March 1983 prices)

1) Bulldozer x 7 months/year x 25 days/month x 10 hours/day x JD 10/hour	\$ 52,500
2) 4 tractors x 10 months/year x 25 days/month x 10 hours/day x JD 4.5/hour	\$135,000
<hr/>	
Total Income	\$187,500

4) Benefit/Cost Ratio

1) Project income	\$ 187,500
2) Project costs	93,607

B/C ratio (2.01)

The above analysis indicates the financial soundness of the cooperative's phase of the project or of the machinery unit itself.

D. Economic Analysis

For the economic analysis, we look at the B/C ratio and Net Present Worth for the farmers. Each year, the farmers will reclaim 1000 dunums. Thus, for the purpose of analysis here in Table 10, we shall look at the costs and benefits relating to 1000 dunums of land to be reclaimed and then used for production. The capital items cited in Table No. 10 for 1000 dunums are:

a) Land reclamation cost which is one year's project income (Table No. 9)	\$187,500
b) Terracing 18 JD per dunum	54,000
c) Seedlings and labor to plant seedlings JD 5 + JD 4 = JD 9	27,000
<hr/>	
Total	\$268,500

Salvage value is the discounted costs of the land reclamation value in year 11. The depreciation of the land reclamation unit is not a separate item since depreciation at 10% a year is included in a) land reclamation cost. All other figures are from previous tables (see Tables Nos. 2,3, and 4). Please note that change in production costs on year 6 reflects change from vegetables to fruit as the fruit trees reach maturity.

Table No. 10 then shows that for the farmers the B/C ratio is (3.69) and the Net Present Worth is \$1,574,612. The two figures indicate the economic feasibility and soundness of the project.

Essentially then the project is replicated each year for ten years until the farmers have reclaimed 10,000 dunums and the machinery unit is fully depreciated. In other words, Table No. 10 is repeated each year, naturally at properly discounted prices.

As a final note, Table 10 also indicates the economic feasibility of the cooperative's mechanized land reclamation unit since it essentially is part of the capital item in the table, but phased over 10 years.

Table No. 8: Benefit/Cost Analysis and Net Present Worth

Project's Economic Life Years	Capital Item \$	Production \$	Gross Costs \$	Present Worth of costs at 12% discount factor \$	Gross Benefits \$	Present Worth of Benefits at 12% discount rate \$
1	268,500	72,000	340,500	304,066	322,000	287,546
2						
3		288,000	288,000	195,264	1,288,000	873,264
4						
5						
6						
7						
8		210,000	210,000	85,932	2,310,000	945,252
9						
10						
<u>Salvage value of reclamation in 11th year</u>						
Total		570,000	838,500	585,262	3,920,000	2,159,874

A) Benefit/Cost Ratio at 12% Discount Rate (3.69)

B) Net Present Value of the Project at 12% Discount Rate = \$1,574,612

43

VI. PROJECT FINANCE

Total Capital Costs	300,168
Cooperative Contribution	150,168
AID/ANERA Contribution	150,000
<hr/>	
Grant Request from AID	150,000

WEST BANK AGRICULTURAL SERVICES PROJECTS #3

I. INTRODUCTION

This proposal includes seven projects, each attached to an agricultural cooperative in the West Bank. All are focused on the provision of mechanized services to the cooperatives' members and non-member patrons. This is a complementary project to previous years' projects to provide machinery for a total of seven other cooperatives, mostly in the Hebron District. The new projects will take place in the following villages and their cooperatives.

Table No. 1: General Data

<u>Village</u>	<u>Population</u>	<u>Location</u>	<u>Area (Dunums)</u>
A. Bethlehem Region:			
1) Obeidia	14,000	12 Km from Ramallah	12,000
2) Nahalin	2,000	20 Km from Bethlehem	8,000
3) Jourt el Shama'a	1,800	15 Km from Bethlehem	6,000
B. Nablus Region:			
4) Assira Al-Qiblia	1,500	14 Km from Nablus	20,000
5) Yassuf	2,000	15 Km from Nablus	6,500
6) Barta'a	2,000	27 Km from Jenin	6,000
7) Nazla Sharqia	2,000	20 Km from Tulkarm	7,000

The beneficiaries of this project are two. First, the Cooperative members will benefit from use of farm machinery and from the reactivated coops. Second, the 24,800

residents of these 7 villages will be able to use the machinery unit. As to respective shares in the capital costs of the projects, ANERA would bear 43% and the cooperatives, 57%.

ANERA involvement in the project would last approximately one year. Subsequently, the respective cooperatives would continue to execute them indefinitely.

II. PROJECT DESIGN

Statement of Problems

A major problem in the area served by these coops is low farmer income derived from the land as observed by West Bank agricultural experts. As a consequence of this problem, dramatic demographic shifts are caused. Specifically, around 50% of the labor force - mostly the young - no longer work on the farms and turn to jobs in the East Bank, Israel and other parts of the West Bank. A contributing cause to the low farm income is the lack of access to needed machinery for cultivation and expansion of the agricultural area. While these projects and others like them will not halt the world-wide trend of farm population leaving the rural areas, it will likely have the effect of slowing the demographic shift to a more normal (in comparison to the world) rate which will have less drastic effects on the economy and society.

Final Goals

The final goal of this proposed project would be to assist the farmers of the seven villages to raise the productivity of

agriculture through mechanization and, hence, improve income derived from the land.

The benefits of the projects may be outlined as follows:

- improving the means of production
- improving productivity
- decreasing operational costs
- slowing the dramatic demographic shift
- raising family income derived from the land

The villages' land on which the mechanized units would work, the area of cultivation, and the crops cultivated are as follows:

Table No. 2: Agricultural Data

	Cultivated Area (Dunums)	Grapes	Olives	Stone Fruits	Summer Crops
A. Bethlehem Region					
Obeidia	8,000	-	3,000	-	5,000
Jourt el Shama'a	2,300	1,000	100	200	1,000
Nahalin	4,000	2,000	1,000	300	700
B. Nablus Region					
Assira Al-Qiblia	5,500	500	2,500	-	2,500
Yassuf	6,000	-	2,000	500	3,500
Barta'a	6,000	-	4,900	100	1,000
Nazla Sharqia	4,000	-	3,000	200	800
	35,800	3,500	16,500	1,300	14,500

Project Activity Targets

Within one year of the projects being funded, ANERA's official role in the projects will be terminated. The equipment will

have been purchased, staff hired, and the mechanized units made an operating division of the coops. The cooperatives will then operate the units indefinitely.

III. PROJECT OVERVIEW

Project Development and Strategy

The cooperatives have individually proposed their respective projects. These, in turn, have been recommended to ANERA by the West Bank Cooperative Departments.

As to strategy, these projects neatly mesh with the FY78, FY79, FY80 and FY82 land reclamation projects throughout the West Bank. It is similar to previous years' projects with other cooperatives in the Hebron district.

Project Impact

This project is essentially neutral to any group outside of the aforescribed beneficiary group. With respect to women, the project is essentially neutral. As to impact on social and cultural values, the project just underlines a trend already started, i.e. agricultural modernization.

Project Continuity

ANERA will be officially involved in this project for only one year, the implementation period. Subsequently, the coop will carry out the project. ANERA would provide only part of the capital costs and no operating costs, thus insuring continuity. The feasibility study, below, indicates the economic

feasibility of the project.

Project Potential

Given sufficient capital, the project could be replicated.

Project Constraints

None are foreseen at this time.

Project Summary - Five AID General Criteria

1. Development - yes
2. Training - no
3. Poor elements -yes
4. Self-sufficiency - yes
5. Self-help/complement local efforts - yes

IV. PROJECT IMPLEMENTATION

Pre-Implementation Conditions

The project is recommended by the Coop Department. All that remains is the Military Government's approval which hopefully will be forthcoming in short period. A number of the coops were recently registered for the purpose of the projects. Thus it is anticipated that the approval will be readily forthcoming.

Implementation Plan and Schedule

In the first phase, the Coop will purchase the equipment. ANERA staff will oversee this to insure that proper bidding procedures are observed. Once the funds are available, this phase will take three months to a year to obtain delivery of all material. The second phase is hiring tractor drivers, a matter of very

short time. ANERA will not be officially involved in this phase. The third phase is the operation of the units which will continue indefinitely. Again, ANERA will not be officially involved in this phase.

Technical Considerations

As noted, this project is designed to help the cooperatives establish agricultural equipment and services units. All the machinery to be purchased is relatively commonplace. Many West Bankers are familiar with its operation and repair. As such, technical considerations are not a negative constraint.

With respect to environmental concerns, they are minimal since new land is not being opened. The local Departments of Agricultural will oversee the operations to help minimize any environmental constraints. Also, an ANERA consultant recently was trained by AID in these matters and he will oversee the projects as well.

Procurement Requirements

Table No. 3: Procurement Requirements

<u>Cooperative</u>	<u>No. of Tractors</u>	<u>No. of Equipment Items</u>
Obeidia	2 large	18
Nahalin	1 large	10
Jouret al-Shama'a	1 large	10
Assira al Qiblia	2 (1 large, 1 small)	18
Yassuf	1 large	10
Barta'a	2 large	18
Nazla Sharqia	<u>2 (1 large, 1 small)</u>	<u>18</u>
	11	102

Table No. 4: Estimated Cost of Equipment

9 large tractors	\$23,000 each	\$ 207,000
2 small tractors	\$15,000 "	30,000
9 trailers (for large tractors)	\$3600 ea.	32,400
4 water tanks (" " ")	\$3000 ea.	21,000
86 items such as ploughs, harrows, discs, threshers etc.		<u>231,000</u>
		\$ 521,400

Personnel Requirements

Each cooperative will hire 1 or 2 tractor drivers, depending on the number of tractors it has from the project.

V. PROJECT EVALUATION

A. Benefits

- Lowering the cost of mechanized services for the farmers
- Raising the productivity of the land
- Increase in farm modernity
- Increase farmer self-sufficiency

B. Financial Analysis

Table No. 5: Capital Costs Estimates

1) Sheds excluding Barta'a and Assira Al-Qiblia about 20m x 6 x JD 60/sq.m x 5 sheds	\$ 108,000
2) Equipment	521,400
+ 10 %	62,940
<u>Total</u>	<u>\$ 692,340</u>

2) Operation CostsTable No. 6: Operation Costs Estimates

a) Administration	
11 drivers x JD 100 x 13 months/year	\$ 42,900
b) Fuel and oil	
45,000 litre/year x IS 18.5/liter	20,812

Table 6 cont'd next page...

(Table 6 cont'd)

c) Depreciation		
1. Building	2%	\$ 2,160
2. Equipment	10%	52,140
d. Maintenance	4% (of investment) ⁽¹⁾	20,856
e) Miscellaneous	5%	6,943
	+ 10%	<u>14,581</u>
Total		\$ 160,393

(1) This % is higher than for the land reclamation units' proposals (Tarqumiya and Tulkarm) because unlike those projects, these small coops will not hire a mechanic.

3) Project Income

Table No. 7: Project Income Estimates

11 Tractors, x 10 months/year x 25 days/month
x 10 hours/day x JD 4.5/hour

Total	\$ 371,250
-------	------------

4) Benefit/Cost Ratio

Project Income Estimates	\$ 371,250
Project Cost Estimates	<u>160,393</u>
B/C Ratio	(2.31)

The ratio demonstrates that the project is financially sound, feasible and profitable.

C. Economic Analysis

Table No. 8: Current Gross Production Costs

Types of Crops	Grapes	Olives	Stone Fruit	Field Crops
Costs per dunum	\$50	\$40	\$120	\$30
No. of dunums	3,500	16,500	1,300	14,500
Total costs	<u>\$175,000</u>	<u>\$660,000</u>	<u>\$156,000</u>	<u>\$435,000</u>

Total all dunums \$1,426,000

Table No. 9: Current Gross Income per Dunum

Type of Crop	Grapes	Olives	Stone Fruits	Field Crops
Income per dunum	\$500	\$210	\$500	\$100
No. of dunum	3500	16,500	1300	14,500
Total Income	<u>\$1,750,000</u>	<u>\$3,465,000</u>	<u>\$650,000</u>	<u>\$1,450,000</u>
Total all dunums	\$ 7,315,000			

The project is designed to enhance net income by diminishing farmers' production costs and enhancing their incomes. The units' income equates with the farmers' projects' operation costs in Table No. 10. However, by operating such a unit on their own, the farmers will be lowering their production costs by effectively 15%. Thus from the total \$1,426,000 gross production costs in Table No. 8, we subtract out \$436,765⁽¹⁾ of production costs for Table No. 10 and substitute 85% of that figure in the operations cost column, i.e., \$371,250 which is equal to the income of the mechanical unit, see Table No. 7. Thus the total operating and production costs to the farmer as a result of the project will be \$371,250 plus \$989,239.

With respect to farmers' gross income, by operating their own machinery unit, it is estimated that productivity (and gross income) will increase by 10%. Thus the figure in Table No. 9 of 7,315,000 will increase to \$8,046,500 in Table No. 10.

(1) This amount represents that portion the farmers currently pay for plowing/cultivation services that would be replaced by the project at a lower cost.

Not incidentally this production increase pattern has been commonly found when farmers can control the plowing and other operations directly rather than just hire out the job commercially to someone over whom they have little or no control.

Table No. 10 : Computation of Benefit/Cost Ratio and Net Present Value of the Project

Years	Capital Costs	Operation Costs	Production Costs	Total Costs	Present Worth of Total Costs at 12% Discount Rate	Total Benefits	Present Worth of Total Benefits at 12% Discount Rate
	\$	\$	\$	\$	\$		\$
1	692,340	371,250	989,239	2,052,829	1,833,176	8,046,500	7,185,524
2							
3							
4							
5							
6		3,341,250	8,903,151	12,244,401	6,473,207	72,418,500	38,285,247
7							
8							
9							
10							
11	Salvage Value 80% of buildings					86,400	24,797
	692,340	3,717,000	9,892,390	14,297,230	8,306,383	86,551,400	45,495,568

1) B/C Ratio at 12% Discount Rate = (5.48)

2) Net Present Worth at 12% Discount Rate = \$37,189,185

Table No. 10 shows that at a 12% discount rate over 10 years the project will have a B/C ratio of (5.48) and a net present worth of \$37,189,185. The two indicators demonstrate the feasibility, soundness, and profitability of the project.

In the other agricultural projects in this proposal, a strict economic comparison of "if the project occurred" versus "if it did not" is not valid because they involve either opening new land which is totally new income (in such cases, the comparison in essence is "zero" versus "the project") or overcoming problems which must be overcome for the farmer to stay in business, i.e., the dairy projects and the hatchery project. In this project, however, one can compare the extant operation versus the proposed operation under this project. Drawing from the data in Tables Nos. 8 and 9, Table No. 11 indicates the economics of the extant operation over 10 years at a 12% discount rate.

Table No. 11: Extant Operation's Economics

Years	Total Costs	At 12% Discount	Total Benefits	At 12% Discount
1-10	\$ 14,260,000	8,058,326	\$ 73,150,000	41,337,065

1) B/C Ratio at 12% Discount (5.12)

2) Net Present Worth at 12% Discount \$33,278,739

Table No. 12 compares the future with and without the project in economic terms.

Table No. 12: Comparison of the Farmers' Operations With and Without the Project

	<u>Without Project</u>	<u>With Project</u>
B/C Ratio at 12% Dicount	5.12	5.48
Net Present Worth at 12% Discount	\$33,278,739	\$37,189,185

Table No. 12 indicates that in terms of the B/C ratio and net present worth over 10 years at a 12% discount rate the project is feasible, sound, and worth the capital investment of \$692,340.

VI. PROJECT FINANCE

Project Capital Cost	\$ 692,340
Cooperatives' Share	392,340
AID/ANERA Share	300,000
<hr/>	
Request from AID	\$ 300,000

Title: Wadi Foukin Agricultural Cooperative -
Agricultural Development Project

I. Introduction

The purpose of this project is to help Wadi Foukin cooperative establish a modern irrigation network for the farmers of the cooperative and the village. At another level, the purpose of the project is to enhance the incomes of the villagers and coop members by adding to the land currently under cultivation through the provision of irrigation services to this new land area. In essence, the project will help conserve the farmers' water so that the extant or current flow from the villages' wells can be used on approximately twice as much land as is now under irrigation. Another intended effect is to encourage some farmers who would otherwise leave to remain on their farms by providing additional irrigation services on more land for them to cultivate.

The beneficiary target group is the village's population, 120 families or about 1000 people. It is projected that under this project, about 500 dunums or 0.5 dunums per capita will be newly cultivated and newly irrigated.

The cooperative's contribution toward the project would be 63% of the total capital cost; ANERA would contribute 37%. Wadi Foukin is a village located in the Bethlehem District, virtually on the green line between the West Bank and Israel.

In 1948 it lost 3000 dunums of the village land to Israel. The remainder is or will be utilized in the following manner.

Table No. 1: Wadi Foukin Land Use

1) Total area	3000 dunums
2) Stone fruits	1000 dunums
3) Irrigated area (currently)	500 dunums
4) Increase in irrigated area (after project)	500 dunums
5) Not presently arable	1000 dunums

ANERA's official relationship to the project would last one year. The cooperative would then continue on its own indefinitely.

II. Project Design

Statement of Problems

Problems to be addressed by this project are as follows:

1. Wadi Foukin has 7 flowing springs which produce 86 cubic meters of water per hour. However, because of antiquated and inefficient development of the springs, only 53 cu. m/h can currently be used.
2. The irrigation system for the currently irrigated 500 dunums is essentially based on a technology employed since Roman times: open canal systems and water catchment pools.
3. The villagers possess 500 dunums in al-Fawwar valley (at the end of the Wadi Foukin valley) which could be irrigated and tilled but is virtually unused because sufficient extra water and a delivery system do not exist.

4. The per capita income from the land is relatively low as per table 2.

Table No. 2: Per capita income from irrigated agriculture in Wadi Foukin

1) No. of dunums irrigated	500 dunums
2) Population	1000 persons
3) Per person share	0.5 dunum
4) Dunum productivity	\$1200/year
5) Production costs	(-)\$ 564/dunum/year
6) Net income per capita	\$ 636/2 = \$313/year

This low income level, aside from the humanitarian concern it involves for the needy, results in the emigration of manpower from the region and deprives the region of surplus capital for self-generated development. The nonproductivity of potentially productive land also hinders the farmer in his/her ability to meet the needs of the local and export markets.

Final Goals

The final goals of the project are to provide the village and farmers with a more efficient system to handle their irrigation water so that they may cultivate an additional 500 dunums of irrigated land. Bringing the new land under cultivation will have the effect of raising the income of the farmers and increasing the production of vegetables. The goals would appear as follows:

1. develop the springs so that the total water flow of 86 cu. m./hr. may be utilized.

2. Develop a modern system of irrigation water distribution via the use of PVC (plastic) pipes, drip irrigation and storage reservoirs so that the farmer may use less water per dunum and deliver the water over a larger area.
3. Steps 1 and 2 will result in sufficient water conservation so that 500 currently unused additional dunums of land may be brought under irrigated cultivation.
4. Increase per capita income levels as indicated in Table 3.

Table No. 3: Income effect of the project

1. Total increase in irrigated area	500 dunums
2. Gross income expected (\$1200 per dunum)	\$600,000
3. Production costs (\$564) and water fees (\$150), each per dunum	\$357,000
4. Net added income	\$243,000
5. Per capita increase	\$ 243

It should be noted that Table No. 3 represents the minimal expected increase. Two other factors will contribute to a greater increase. First, using the more modern irrigation system, the farmer usually produces more per dunum than via traditional irrigation. Depending on the modern system, the increase can be 50% to 250%. Second, an attendant project the cooperative plans to undertake simultaneously is the establishment of a small nursery (cost about \$60,000 investment capital). Via this nursery, the cooperative plans to produce higher quality seedlings (vegetable) than the farmers currently grow for themselves which in turn should result in enhanced and more valuable production. For the sake of relying on conservative estimates,

these two items are not factored into the farmer's profits. His current production and costs are the basis for Table 3.

Project Activity Targets

Within one year of the project being funded, ANERA's official involvement in the project will be terminated. The equipment will have been purchased and installed and the cooperative will have acquired the staff to run the system. The coop will then operate it indefinitely.

III. Project Overview and Strategy

This project falls in our general strategy of attempting to improve agricultural systems in the West Bank, primarily relying on the cooperative infrastructure. Thus it is seen as complementary to ANERA's other agricultural cooperative projects.

Under a previous AID grant, ANERA made a subgrant to the Wadi Foukin cooperative for the partial funding of the purchase of a tractor and farm implements. This project has been completed and an interim evaluation was submitted in spring 1983. Final evaluation will be forthcoming shortly.

The Mennonite Central Committee has been active in the village, teaching local farmers drip irrigation techniques. Those farmers, it is expected, will serve as demonstrators of this agricultural method in the area. The Mennonite Central Committee plans to maintain activity in the area.

Project Impact

Predicting possible positive or negative effects of this project on other than the target groups is problematic. On a very general level, with success the project will contribute to the economic welfare of the immediate community and the West Bank as a whole. By making employment more attractive in the area, demographic changes in the region will be milder.

The impact of the project on women is essentially neutral. They will benefit from the overall project in the same way men will. The impact on values and traditions is best stated as a boost in a process that has already commenced. This is the modernization of agriculture. The farmers definitely appreciate the value of appropriate agricultural systems and realize this will have an impact on their lives, a positive one in their minds.

Project Continuity

ANERA will be officially involved in the project only for one year, the period during which the equipment will be purchased. The cooperative will then operate the irrigation system (and nursery) on its own.

The project's continuity, i.e. the continued operation of the irrigation system, is assured in three ways. First, the coop will be covering all administrative costs. Second, the coop will be paid for the services rendered. Third, the coop will set aside an adequate portion of its income from the system for necessary replacement of equipment. Technically,

the system is not difficult to operate and repair. Sufficient skilled operators exist in the West Bank.

Project Potential

In areas with naturally flowing water where the farmers are using the flow for irrigation purposes, the demand for modern distribution systems is high because of the higher potential production and the possibility of expanding the amount of land under irrigated production.

Project Constraints

None are foreseen at this time.

Project Summary

- 1) Development - yes
- 2) Training - no
- 3) Poorer elements - yes
- 4) Self-sufficiency - yes
- 5) Self-help/complement local efforts - yes

IV. PROJECT IMPLEMENTATION

Pre-implementation Conditions

The only constraint is obtaining the approval of the military government for the project. The project has been recommended by the cooperative department. Once the GOI approval is obtained the cooperative may implement the project. It should be noted that GOI has approved an earlier AID/ANERA project with the Wadi Foukin Agricultural Cooperative.

Implementation Plan and Schedule

The first phase of the project is to construct the modern irrigation system covering the old land under irrigation, but also bringing under irrigated cultivation the currently inproductive land. To be constructed are:

- a) two reservoirs in the valley to collect the flow of the springs;
- b) two reservoirs on the hills. These are much larger than (a). The water is pumped up the hills so that gravity will create enough natural pressure allowing drip irrigation systems to be used without pumps and thus saving the farmers considerable fuel or energy expense;
- c) purchase of four generators and pumps to pump the water;
- d) purchase and laying out PVC pipe;
- e) setting up a small nursery (a separate, but attendant project noted above).

The second phase is hiring staff, a matter of a very short time. ANERA will not be officially involved in this phase. The third phase is the operation of the system and nursery which will continue indefinitely. Again, ANERA will not be officially involved in this phase.

With respect to environmental concerns, it should be noted that currently unused land will be planted with vegetables using irrigation systems. Implementation of the system might have the following minor environmental consequences:

65

- loss of pastures
- damage to archeological sites
- possible changes in the natural drainage system which might increase erosion

The agricultural cooperative running the system should seek the advice of the archeological department in the area to avoid unnecessary damage to archeological and historical sites. Although these projects are developing land that is not now used for grazing animals, the coop should recognize the possibility of future infringements on grazing land. The cooperative should seek the advice of land-use planners and surveyors to avoid negative impact from changing natural drainage systems.

It is important that the proper operation, maintenance and safety procedures be enforced at the project site to avoid these problems. The project agreement will require that environmental issues be properly addressed during implementation.

Technical Considerations

Technical considerations will not be a negative constraint, since the machinery is generally commonplace. Operation, repair and maintenance are familiar on the West Bank. With respect to environmental concerns, the coop will hire a qualified agronomist to manage the program and will be under the supervision, where necessary, of the Department of Agriculture and Cooperatives. An ANERA consultant was trained by AID in these matters and will be available for consultation on them.

Procurement RequirementsTable No. 4: Procurement Requirements

1) PVC pipes 3" for main line Length: 4300 meters x JD 5	\$ 64,500
2) PVC pipes 2" for side lines Length: 3000 meters x JD 5	45,000
3) PVC (Ls) and (Ts) 3" Length: 1500 meters x JD 5	22,500
4) Manholes and other PVC Ls and Ts 2" Length: 1000 meters x JD 5	15,000
5) Reservoir lines 800 meters PVC, 2"x JD 5	12,000
6) 4 generators, 2 x 40 HP, 2 X 20 HP	<u>60,000</u>
Total:	<u>219,000</u>

The pipes and generators will be purchased in the West Bank and Israel. Delivery will occur 1-2 months after the grant is finalized. The cooperative will make the purchases. The cooperative will also procure spring development and the construction of reservoirs. For prices, see below. ANERA will insure that proper bidding procedure is followed when necessary.

Personnel Requirements

No ANERA personnel will be directly involved in the project. The cooperative will provide its own personnel for the system as follows:

Table No. 5: Personnel Requirements

1) Manager (agronomist)		
JD 150 x 13 months/year		\$ 5,850
2) Mechanic and maintenance worker		
JD 100 x 13 months/year		\$ 3,900
3) One fee collector		
JD 50 x 13 months/year		\$ 1,950
	+ 10%	\$ 1,170
	Total	\$12,870

In addition, 2 laborers will be hired for the separate nursery project. The Manager will spend part of his time overseeing that project.

V. PROJECT EVALUATION

1) Financial Analysis

A) Capital Costs

Table No. 6: Capital Costs

a) Reservoirs, concrete		
2 x 300 cu.m./JD 88	\$158,400	
2 x 100 cu.m./JD 88	\$ 52,800	
Subtotal (reservoirs)	\$211,200 ⁽¹⁾	----- \$211,000
b) Development of springs		\$ 60,000
c) PVC lines, 10,600 meters		\$159,000
d) Generators		\$ 60,000
	+ 10%	<u>49,000</u>
	Total	\$539,000

(1) Rounded figure

B) Operation CostsTable No. 7: Operation Costs

a) Personnel		\$ 12,870
b) Maintenance (1)		
- Generators 2%		1,200
-PVC 0.5%		735
-Reservoirs 0.5%		1,055
c) Depreciation		
-Generators 10%		6,000
-PVC 5%		7,350
-Reservoirs 2%		4,220
d) Fuel & oil		
20,000 litre x IS 18.5		
40 (\$1.00 = 40 IS)		9,250
+ 10%		4,268
Total		\$ 46,948

(1) This is based on best estimate of local, qualified experts

C) Projects IncomeTable No. 8: Project Income

Water Fees	
1000 dunums at JD 50 per dunum/year	\$150,000
Total	\$150,000

D) Benefit/Cost RatioTable No. 9: Benefit/Cost Ratio

a) Project Income Estimates	\$150,000
b) Project Cost Estimates	\$ 47,000
c) B/C Ratio (3.19)	

Table No. 9 indicates that the project is financially profitable and feasible.

67

2) Economic Analysis

Table No. 10: Computation of B/C Ratio of the Project on a
Per Capita Basis in Wadi Foukin

A. Benefits (additional, i.e., over and above costs already borne)		
(1) Per capita share in new land	0.5 dunums	
(2) Gross income one dunum	\$1,200	
(3) Gross income per capita	\$ 600	
B. Costs (additional)		
(1) Production costs on 0.5 dunums = \$564/2	\$282	
(2) Project Income = Irrigation costs =		
\$75 per 0.5 dunums		\$ 75
Total		\$357
(3) B/C Ratio = (1.68)		

The ratio indicates that in terms of the individual, the project will be profitable for the farmer. The profit or benefit over cost is 68% or (1.68) income units to each (1) unit of cost. It is worth recalling as noted in the "Final Goals" section that if the farmer uses more advanced farming techniques, which inter alia are made possible by this project, he will realize a high B/C ratio as well as a high absolute return per dunum. Equally in "Table No. 11, Computation of Benefit/Cost Ratio and Net Present Value of the Project", both the B/C ratio and the Net Present Value would be more favorable. However, for the purposes of conservative analysis, we are using the lowest yeild estimate based on the farmers' present practises.

Table No. 11 : Computation of Benefit/Cost Ratio and Net Present Value of the Project

Years	Capital Costs	Operation Costs	Production Costs	Total Costs	Present Worth of Total Costs at 12% Discount Rate	Total Benefits	Present Worth of Total Benefits at 12% Discount Rate
	\$	\$	\$	\$	\$	\$	\$
1	\$539,000	0	0	539,000	481,327	0	0
(2-10)	0	422,532	6,426,000	6,848,532	3,620,613	10,800,000	5,709,600
(11)	60,000	46,948	714,000	820,948	235,612	1,200,000	344,400
(12-21)	0	469,480	7,140,000	7,609,480	1,237,301	12,000,000	1,951,200
Salvage Value	= 10% of initial investment of each period					59,900	5,570
Total	\$ 599,000	938,960	14,280,000	15,817,960	5,574,853	24,059,900	8,010,770

From Table 11, we find (a) the Benefit/Cost Ratio at the 12% discount rate to be (B/C) = (1.44) and (b) the Net Present Value of the Project at the 12% discount rate to be \$2,435,917. Both indicators indicate the project is both economically feasible and profitable.

VI. PROJECT FINANCE

Total Capital Costs	\$ 539,000
Cooperative Contribution	339,000
AID/ANERA Contribution	200,000
<hr/>	
Grant Request from AID	\$ <u>200,000</u>

AL-NASSARIA LIVESTOCK COOPERATIVE

DAIRY PRODUCTS

I. INTRODUCTION

The purpose of this project is to provide partial funding to Al-Nassaria Livestock Cooperative to build and equip a dairy factory that will process milk and milk products for sale to the residents of the Nablus area. The project is intended to respond to two basic needs: the needs of the local population for a regular supply of healthy dairy products, and the needs of the dairy farmers for facilities and channels to produce milk products that will meet new hygienic standards and enable them to stay in business. Table No. 1 provides a breakdown of the population served by the cooperative.

Table No. 1: Cooperative Area

<u>Village</u>	<u>Population</u>
1) Ein Shibli	800
2) Aqrabania	600
3) Sawalma	2,000
4) Malalha	1,200
5) Nassaria	1,500
6) Deir Al-Hatab	2,200
7) Salem	1,200
8) Beit Dajan	3,000
9) Beit Fouriek	4,000
10) Tamoun	3,000
Total	<u>19,500</u>

The majority of the residents of these villages are dependent on livestock and dairy production for half of their income, and they provide the main source of these products for the Nablus area. The cooperative currently has 80 members, and expects this project to expand its membership to 200 very quickly, and to 400 within two years.

The proposed project is part of a larger cooperative plan to establish a supply center for feed, medical and extension services for livestock and a revolving loan fund to help farmers improve their herds, as well as the dairy factory. The ANERA proposal is concerned only with the dairy factory, which will be located in Malalha.

II. PROJECT DESIGN

Statement of Problem

The main problem this project is designed to address is the inability of the dairy farmers to meet new hygienic standards and demands for dairy products by traditional processing methods. The discovery of contamination in traditionally produced cheese, milk, yoghurt, and ghee in 1930, led the Jerusalem Municipality to ban the marketing of these products. Farmers who are unable to up-grade their methods of dairy processing are now in danger of losing a large part of their income from livestock as these standards become generally applied throughout the West Bank. Thus, when considering the feasibility of this project, it should be remembered that there is

virtually an absolute need for the farmers to shift to modern dairy processing methods if the West Bank farmers are to continue providing fresh dairy products to the people.

Although not specifically addressed in this project, a further problem of the farmers is the relatively unproductive variety of milk cows commonly raised. The cooperative plans to purchase a number of higher quality and more productive cows to improve the overall stock, and milk production, of the area.

Finally, this project is intended to generally improve the low income of the majority of these farmers by assuring them a well-managed market for their dairy products.

Final Goals

1) The first goal of the project is to meet new market demands for higher quality dairy products and maintain this important sector of the West Bank economy.

2) This will be accomplished through the establishment of a dairy products factory capable of processing 6-12 tons of milk per day. Table No. 2 demonstrates the demand for dairy products in the Nablus area.

Table No. 2: Demand for Dairy Products in Nablus Region

1) Total population	150,000
2) Average family size	6 persons
3) No. of families	25,000
4) Average family consumption/day	2 liters
5) Total	50 tons/day
6) Other support areas of demand	20

(Table No. 2, cont'd)

7. Total area demand	70 tons
8. Initial production of proposed project	6 tons/day-2/3 of year 12 tons/day-1/3 of year
9. Percent of total	8.6% 2/3 of year 17% 1/3 of year

3) The project plans to be able to provide 8.6% of the area consumption of dairy products during 2/3 of the year, and 17% of the area consumption for 1/3 of the year.

Table No. 3: Cow, Sheep, and Goat Milk Production in the Area

1. No. of Cows - 100% Milkers	3000
2. Average Production per day	10 liters
3. Average Total Production	30 tons
4. Proposed Dairy's Consumption per day	6 tons or 20%
5. No. of Sheep & Goats - Milkers	21,000
6. Average Production per day - 1/3 of year	1.33 liters
7. Average Production 1/3 of year (no other effective milk production)	28 tons
8. Proposed Dairy's Consumption 1/3 of year- per day	6 tons or 21.4%

4) As owners of the cooperative, the farmers will increase their incomes by:

- a) increasing the volume of sales;
- b) increasing the quality of their products which will, in turn, increase their value in the market;
- c) realizing a saving of about 15% which farmers currently pay to merchants and/or commission agents to market their products;
- d) saving additional costs of transport and labor in marketing;
- e) sharing in the cooperative's profits.

(Table No. 4, cont'd)

III. Total Yearly Production

240 days x \$7,035	\$ 1,688,400
120 days x (\$7,253 + \$9,216)	1,976,280
Total	\$ 3,664,680

Table No. 5: Packing Requirements

A. Kilograms to be packed per year	2,066,460
B. Number of Containers needed	
1) ½ kg. containers	4,132,920
2) 4% waste factor	165,316
Total	4,298,236
Rounded Total	4,300,000
C. Price = 1 JD per 100 containers	43,092 JD
	\$ 129,276

III. PROJECT OVERVIEW AND STRATEGY

This project is complementary to similar plans in Al-Nahda in the Bethlehem area, which is also included in this grant proposal. Both projects respond to changing market conditions and needs in order to sustain dairy farmers in the West Bank. As already explained, new hygienic standards being applied throughout the West Bank force farmers either to up-grade their methods in processing dairy products or to go out of business.

Project Impact

This project is expected to have positive impact in several areas. First, it will sustain an important sector of the West Bank economy by enabling dairy farmers to produce products suited to demand and to improve their income from their farms. Secondly, the improved hygienic quality of the dairy products has obvious positive health benefits for the population as a whole. Thirdly, the project proposed a more efficient use of labor -- in processing larger quantities of dairy products in a central facility -- and of resources -- in using all of the raw milk produced without waste or spoilage.

The environmental concerns of this project are minimal. Overall, the improved sanitation and refrigeration will be a clear benefit. The only concerns will be in the construction and site of the facility itself. ANERA will oversee the development of the project to assure these issues are addressed.

Project Continuity

The cooperative expects an increase in its membership from 80 to 200 within a year of project implementation, and anticipates a further increase to 400 within two years. The continuity of the project is assured primarily by the fact that it answers a critical need from the perspective of both farmers and consumers. Additional plans of the cooperative to extend its services to more members, and to include a supply center and revolving loan fund reflect a long-term commitment of the members to enhance this sector of the economy.

71

Project Potential

The replication potential of this project is high given the demand for dairy products and the need of the farmers to meet that demand in the West Bank.

Project Constraints

None are foreseen at this time.

Project Summary

- 1) Development -yes
- 2) Training -no
- 3) Poorer elements -yes
- 4) Self-sufficiency -yes
- 5) Self-help/complement local efforts -yes

IV. PROJECT IMPLEMENTATION

Pre-implementation Conditions

The only constraint is obtaining the approval of the military government for the project. The project has been recommended by the cooperative department. Once the GOI approval is obtained the cooperative may implement the project.

Implementation Plan and Schedule

The first phase is the purchase of the equipment. This the cooperative management will do; ANERA will oversee this to insure that proper bidding procedures are observed. Once the funds are available, this phase will take three months to a year to obtain delivery of all material. During this phase,

the cooperative will buy land and construct the building. The second phase is hiring staff, a matter of a very short time. ANERA will not be officially involved in this phase. The third phase is the operation of the unit which will continue indefinitely. Again, ANERA will not be officially involved in this phase.

Technical Considerations

Technical considerations will not be a negative constraint, since the machinery is generally commonplace. Operation, repair and maintenance are familiar on the West Bank.

Procurement

Below is a list of machinery and equipment to be purchased.

Table No. 6: Procurement Requirements

1) Main refrigerator milk reservoir, 4 tons capacity, to receive the daily deliveries of milk for processing.	\$ 21,000
2) Auxiliary refrigerator milk reservoir, 2 tons capacity to receive the excess in milk deliveries to the factory.	12,000
3) Pasteurizing apparatus, for heating milk under pressure.	45,000
4) Cheese - Container for cheese production	45,000
5) Cheese - Forming press	3,000
6) Yogurt - Container for yogurt production after pasteurization	45,000

Table 6 continues on next page...

(Table 6 cont'd)

7) Separator - for separating cream from milk for butter-making.	\$ 24,000
8) Refrigerator for storing the pro- duction before marketing.	21,000
9) Water boiler	\$ 24,000
10) Truck-container for milk delivery to the factory	\$ 15,000
11) Electric generator 20 KWA	6,000
12) Electric and water installation	9,000
+ 10%	\$ 27,000
<hr/>	
Total Costs	\$297,000

Table No. 7: Personnel Requirements

	<u>Salary/Year</u> <u>US \$</u>
1) Manager, dairy-products specialist JD 150/month x 13 months/year	\$ 5,850
2) Mechanic (special diploma) for maintenance JD 100/month x 13 months/year	3,900
3) Truck driver (group C) for distribution and delivery JD 100/month x 13 months/year	3,900
4) Assistant driver for distribution and delivery JD 80/month x 13 months/year	3,120
5) 4 Laborers JD 70 each month x 13 months/year	10,920
6) 2 Laborers JD 70/month x 4 months/year	1,680
+ 10%	2,937
<hr/>	
Total	\$ 32,307

B. Operation Costs

1) Administration	\$ 32,307
2) Depreciation	
Machinery (10%)	29,700
Building (2%)	1,200
3) Maintenance-2% of all equipment	5,940
4) Rent - 6 stores x JD 200	3,600
5) Plastic bags and containers	129,276
6) Fuel	5,000
7) Utilities	30,000
8) Miscellaneous - 2% of above	4,740
+ 10%	<u>24,176</u>
subtotal	\$ 265,939
Total	<u>\$3,073,940</u>

Table No. 10: Project Income Estimates

(see Table No. for Data)

1. 240 days

a. butter @ \$ 263 per day

b. cheese @ 3,937

c. yogurt @ 1,440

d. lebneh 1,395

\$7,035 x 240 =

subtotal \$ 1,688,400

a. Cow milk

1) butter @ \$ 263 per day

2) yogurt @ \$3,540

3) lebneh @ \$3,450

\$7,253 x 120 =

870,360

Table No. 10 cont'd on next page...

(Table No. 10 cont'd)

b. Sheep and Goat Milk

1. butter @ \$	168 per day	
2. Ghee @	198	
3. 1475 @	<u>8,850</u>	
subtotal	9,216 x 120	<u>\$ 1,105,920</u>
	TOTAL	<u>\$ 3,664,680</u>

4) Table No. 11: Benefit/Cost Ratio

1. Project Income Estimates	\$ 3,664,680
2. Project Costs Estimates	\$ 3,073,940
3. B/C Ratio	(1.19)

B) Economic Analysis

1) Benefit/Cost Ratio for the Farmer

For our purposes here, we shall only look at the cost of keeping cows and goats/sheep during the period they are producing milk to be used in the aforescribed project. All other times the cows and goats/sheep are being kept by the farmers, is considered as a separate project. During these other periods, the farmer admittedly has separate expenses, but also he has separate benefits, namely, milk, baby animals, meat, skins, wool, dung. Thus they may be treated separately and not included in this project.

The above indicates that the farmers milk production phase is feasible and beneficial. The above calculation assumes no pasturage for any animals. If pasturage is available, which it is for some of the animals, the cost to the farmer for food declines.

Table No. 12, "Computation of Benefit/Cost Ratio and Net Present Value of the Project" takes up the dairy project in conjunction with the farmers' milk producing operation. In Table No. 12, Operation cost is cost of operating the dairy processing plant, production cost is the farmers' cost of producing the milk (see above tables), and the benefits are what the cooperative realizes as gross income. Table No. 12 indicates that the overall project has a B/C Ratio of (3.37) and a Net Present Worth of \$14,583,765. Both indicators demonstrate the profitability and feasibility of the project. In sum, the project effectively enhances farmer income. But also and very importantly it helps guarantee that the farmer may stay in the market as the consumer demands dairy (rather than home) processed milk products and as law such as in the Jerusalem area requires dairy processing.

86

Table No. 12: Computation of Benefit/Cost Ratio and Net Present Worth of the Project

Years	Capital Costs	Operation Costs	Production Costs	Total Costs	Present Worth of Total Costs at 12% Discount Rate	Total Benefits	Present Worth of Total Benefits at 12% Discount Rate
	\$	\$	\$	\$	\$	\$	\$
1	434,214	265,939	1,693,874	2,394,027	2,137,866	3,664,680	3,272,559
2							
3							
4							
5							
6		2,393,451	15,244,866	17,638,317	4,009,778	32,982,120	17,436,500
7							
8							
9							
10							
11	Salvage Value (bldg. and land)			----	----	----	22,350
	434,214	2,659,390	16,938,740	20,032,344	6,147,644	36,646,800	20,731,409
	Benefit Cost Ratio at 12% Discount			(3.37)			
	Net Present Worth at 12% Discount			\$14,583,765			

17

VI. PROJECT FINANCE

Capital Costs	\$ 434,214
Coop Share	234,214
AID/ANERA	200,000
<hr/>	
Request from AID	\$ 200,000

AL-NAHDA AGRICULTURAL COOPERATIVE
DAIRY PRODUCTS

I. INTRODUCTION

The purpose of this project is to provide partial funding to Al-Nahda Livestock Cooperative to build and equip a dairy factory that will process milk and milk products for sale to the residents of the Bethlehem area. The project is intended to respond to two basic needs: the needs of the local population for a regular supply of healthy dairy products, and the needs of the dairy farmers for facilities and channels to produce milk products that will meet new hygienic standards and enable them to stay in business. Table 1 provides a breakdown of the population served by the cooperative.

Table No. 1: Cooperative Area

<u>Village</u>	<u>Population</u>
1) Al-Sawahra tribes	45,000
2) Abu-Deis area	10,000
3) Bethany area	10,000
4) Anata area	3,000
5) Sour Baher area	7,000
6) Eastern slopes (Beni Ka'b tribe)	1,000
Total	76,000

Approximately 1600 families in this area are partially or wholly dependent on animal husbandry for their livelihood, and they serve a consumer population of 180,000. The cooperative

expects to expand its membership to 200 within the first year of the project implementation, doubling the number to 400 within two years.

The proposed project is part of a larger cooperative plan to establish a supply center for feed, medical and extension services for livestock and a revolving loan fund to help farmers improve their herds, as well as the dairy factory. The ANERA proposal is concerned only with the dairy factory, which will be located in Abu Deis.

The total cost of the project will be \$435,000 of which AID/ANERA would contribute \$200,000 or 46% and the coop \$234,640 or 54%.

II. PROJECT DESIGN

Statement of Problems

The main problem this project is designed to address is the inability of the dairy farmers to meet new hygienic standards and demands for dairy products by traditional processing methods. The discovery of contamination in traditionally produced cheese, milk, yogurt and ghee in 1980, led the Jerusalem Municipality to ban the marketing of these products. Farmers who are unable to up-grade their methods of dairy processing are now in danger of losing a large part of their income from livestock as these standards become generally applied throughout the West Bank. Thus, when considering the feasibility of this project, it should be remembered that there is virtually

an absolute need for the farmers to shift to modern dairy processing methods if the West Bank farmers are to continue providing fresh dairy products to the people.

Although not specifically addressed in this project, a further problem of the farmers is the relatively unproductive variety of milk cows commonly raised. The cooperative plans to purchase a number of higher quality and more productive cows to improve the overall stock, and milk production, of the area.

Finally, this project is intended to generally improve the low income of the majority of these farmers by assuring them a well-managed market for their dairy products.

Final Goals

- 1) The first goal of the project is to meet new market demands for higher quality dairy products and maintain this important sector of the West Bank economy.
- 2) This will be accomplished through the establishment of a dairy products factory capable of processing 6-12 tons of milk per day in the first stage. Table No.2 demonstrates the demand for dairy products in the Bethlehem-Jerusalem-Ramallah area.

Table No. 2: Demand for Dairy in Bethlehem-Jerusalem-Ramallah Area

1. Total Population	180,000
2. Average Family Size	6

Cont'd on next page...

(Table No. 2 cont'd)

3. No. of Families	30,000
4. Average family consumption/day	2 liters
5. Total demand	60 tons
6. Initial production of proposed unit	6 tons/day 2/3 of yr 12 tons/day 1/3 of yr
7. Percent of total	10% 2/3 of yr 20% 1/3 of yr

3) The project plans to be able to provide 10% of the area consumption of dairy products during 2/3 of the year, and 20% of the area consumption for 1/3 of the year.

Table No. 3: Cow, Sheep, and Goat Milk Production in the Area

1. No. of Cows - 100% Milkers	1500
2. Average Production Daily	10 liters
3. Average Total Production	15 tons
4. Proposed Dairy's Consumption per day	6 tons or 40%
5. No. of Sheep and Goats - Milkers	30,000
6. Average Production per day 1/3 yr	1.33 liters
7. Average Production 1/3 of year (no other effective production)	40 tons
8. Proposed Dairy's Consumption 1/3 of year per day basis	6 tons or 15%

4) As owners of the cooperative, the farmers will increase their incomes by:

- a) increasing the volume of sales;
- b) increasing the quality of their products which will, in turn, increase their value in the market;

- c) realizing a saving of 15% which farmers currently pay to merchants and/or commission agents to market their products;
- d) saving additional costs of transport and labor in marketing ; and
- e) sharing in the coop's profits.

(1)

(Table No. 4, cont'd)

III. Total Yearly Production

240 days x \$7,035 \$ 1,688,400

120 days x (\$7,253 + \$9,216) 1,976,280

Total	\$ 3,664,680
-------	--------------

Table No. 5: Packing Requirements

A. Kilograms to be packed per year 2,066,460

B. Number of Containers needed

1) ½ kg. containers 4,132,920

2) 4% waste factor 165,316

Total 4,298,236

Rounded Total 4,300,000

C. Price = 1 JD per 100 containers 43,092 JD

\$ 129,276III. PROJECT OVERVIEW AND STRATEGY

This project is complementary to similar plans in Al-Nahda in the Bethlehem area, which is also included in this grant proposal. Both projects respond to changing market conditions and needs in order to sustain dairy farmers in the West Bank. As already explained, new hygienic standards being applied throughout the West Bank force farmers either to up-grade their methods in processing dairy products or to go out of business.

Project Impact

This project is expected to have positive impact in several areas. First, it will sustain an important sector of the West Bank economy by enabling dairy farmers to produce products suited to demand and to improve their income from their farms. Secondly, the improved hygienic quality of the dairy products has obvious positive health benefits for the population as a whole. Thirdly, the project proposed a more efficient use of labor -- in processing larger quantities of dairy products in a central facility -- and of resources -- in using all of the raw milk produced without waste or spoilage.

The environmental concerns of this project are minimal. Overall, the improved sanitation and refrigeration will be a clear benefit. The only concerns will be in the construction and site of the facility itself. ANERA will oversee the development of the project to assure these issues are addressed.

Project Continuity

The cooperative expects an increase in its membership from 80 to 200 within a year of project implementation, and anticipates a further increase to 400 within two years. The continuity of the project is assured primarily by the fact that it answers a critical need from the perspective of both farmers and consumers. Additional plans of the cooperative to extend its services to more members, and to include a supply center and revolving loan fund reflect a long-term commitment of the members to enhance this sector of the economy.

9/16

Project Potential

The replication potential of this project is high given the demand for dairy products and the need of the farmers to meet that demand in the West Bank.

Project Constraints

None are foreseen at this time.

Project Summary

- 1) Development -yes
- 2) Training -no
- 3) Poorer elements -yes
- 4) Self-sufficiency -yes
- 5) Self-help/complement local efforts -yes

IV. PROJECT IMPLEMENTATIONPre-implementation Conditions

The only constraint is obtaining the approval of the military government for the project. The project has been recommended by the cooperative department. Once the GOI approval is obtained the cooperative may implement the project.

Implementation Plan and Schedule

The first phase is the purchase of the equipment. This the cooperative management will do; ANERA will oversee this to insure that proper bidding procedures are observed. Once the funds are available, this phase will take three months to a year to obtain delivery of all material. During this phase,

the cooperative will buy land and construct the building. The second phase is hiring staff, a matter of a very short time. ANERA will not be officially involved in this phase. The third phase is the operation of the unit which will continue indefinitely. Again, ANERA will not be officially involved in this phase.

Technical Considerations

Technical considerations will not be a negative constraint, since the machinery is generally commonplace. Operation, repair and maintenance are familiar on the West Bank.

Procurement

Below is a list of machinery and equipment to be purchased.

Table No. 6: Procurement Requirements

1) Main refrigerator milk reservoir, 4 tons capacity, to receive the daily deliveries of milk for processing.	\$ 21,000
2) Auxiliary refrigerator milk reservoir, 2 tons capacity to receive the excess in milk deliveries to the factory.	12,000
3) Pasteurizing apparatus, for heating milk under pressure.	45,000
4) Cheese - Container for cheese production	45,000
5) Cheese - Forming press	3,000
6) Yogurt - Container for yogurt production after pasteurization	45,000

Table 6 continues on next page...

(Table 6 cont'd)

7) Separator - for separating cream from milk for butter-making.	\$ 24,000
8) Refrigerator for storing the pro- duction before marketing.	21,000
9) Water boiler	\$ 24,000
10) Truck-container for milk delivery to the factory	\$ 15,000
11) Electric generator 20 KWA	6,000
12) Electric and water installation	9,000
+ 10%	\$ 27,000
<hr/>	
Total Costs	\$297,000

Table No. 7: Personnel Requirements

	<u>Salary/Year</u> <u>US \$</u>
1) Manager, dairy-products specialist JD 150/month x 13 months/year	\$ 5,850
2) Mechanic (special diploma) for maintenance JD 100/month x 13 months/year	3,900
3) Truck driver (group C) for distribution and delivery JD 100/month x 13 months/year	3,900
4) Assistant driver for distribution and delivery JD 80/month x 13 months/year	3,120
5) 4 Laborers JD 70 each month x 13 months/year	10,920
6) 2 Laborers JD 70/month x 4 months/year	1,680
+ 10%	2,937
<hr/>	
Total	\$ 32,307

V. PROJECT EVALUATIONA) Financial Analysis1) Capital CostsTable No. 8: Capital Costs Estimates

1) Land	\$ 30,000
2) Building	60,000
3) Machinery	297,000
4) Miscellaneous (consultancy, licence etc..) 2% of the above	7,740
+ 10%	39,474
<hr/>	
Total	\$434,214

2) Operational CostsTable No. 9: Operation Cost Estimate

A. Raw Material

1) Raw Milk

a) Sheep/Goat 6 tons/day x 400 JD/ton
x 120 days \$ 864,000

b) Cow 6 ton/day x 300 JD/ton
x 360 days \$1,944,000

subtotal

\$2,808,000

B. Operation Costs

1) Administration	\$ 32,307
2) Depreciation	
Machinery (10%)	29,700
Building (2%)	1,200
3) Maintenance-2% of all equipment	5,940
4) Rent - 6 stores x JD 200	3,600
5) Plastic bags and containers	129,276
6) Fuel	5,000
7) Utilities	30,000
8) Miscellaneous - 2% of above	4,740
+ 10%	<u>24,176</u>
subtotal	\$ 265,939
Total	<u>\$3,073,940</u>

Table No. 10: Project Income Estimates

(see Table No. for Data)

1. 240 days

a. butter @ \$ 263 per day

b. cheese @ 3,937

c. yogurt @ 1,440

d. lebneh 1,395

\$7,035 x 240 =

subtotal

\$ 1,688,400

a. Cow milk

1) butter @ \$ 263 per day

2) yogurt @ \$3,540

3) lebneh @ \$3,450

\$7,253 x 120 =

870,360

Table No. 10 cont'd on next page...

101

(Table No. 10 cont'd)

b. Sheep and Goat Milk

1. butter @ \$ 168 per day

2. Ghee @ 198

3. 1475 @ 8,850subtotal 9,216 x 120 \$ 1,105,920

TOTAL \$ 3,664,680

4) Table No. 11: Benefit/Cost Ratio

1. Project Income Estimates \$ 3,664,680

2. Project Costs Estimates \$ 3,073,940

3. B/C Ratio (1.19)

B) Economic Analysis

1) Benefit/Cost Ratio for the Farmer

For our purposes here, we shall only look at the cost of keeping cows and goats/sheep during the period they are producing milk to be used in the aforescribed project. All other times the cows and goats/sheep are being kept by the farmers, is considered as a separate project. During these other periods, the farmer admittedly has separate expenses, but also he has separate benefits, namely, milk, baby animals, meat, skins, wool, dung. Thus they may be treated separately and not included in this project.

105

The above indicates that the farmers milk production phase is feasible and beneficial. The above calculation assumes no pasturage for any animals. If pasturage is available, which it is for some of the animals, the cost to the farmer for food declines.

Table No. 12, "Computation of Benefit/Cost Ratio and Net Present Value of the Project" takes up the dairy project in conjunction with the farmers' milk producing operation. In Table No. 12, Operation cost is cost of operating the dairy processing plant, production cost is the farmers' cost of producing the milk (see above tables), and the benefits are what the cooperative realizes as gross income. Table No. 12 indicates that the overall project has a B/C Ratio of (3.37) and a Net Present Worth of \$14,583,765. Both indicators demonstrate the profitability and feasibility of the project. In sum, the project effectively enhances farmer income. But also and very importantly it helps guarantee that the farmer may stay in the market as the consumer demands dairy (rather than home) processed milk products and as law such as in the Jerusalem area requires dairy processing.

Table No. 12: Computation of Benefit/Cost Ratio and Net Present Worth of the Project

Years	Capital Costs	Operation Costs	Production Costs	Total Costs	Present Worth of Total Costs at 12% Discount Rate	Total Benefits	Present Worth of Total Benefits at 12% Discount Rate
	\$	\$	\$	\$	\$		\$
1	434,214	265,939	1,693,874	2,394,027	2,137,866	3,664,680	3,272,559
2							
3							
4							
5							
6		2,393,451	15,244,866	17,638,317	4,009,778	32,982,120	17,436,500
7							
8							
9							
10							
11	Salvage Value (bldg. and land)			----	----	----	22,350
	434,214	2,659,390	16,938,740	20,032,344	6,147,644	36,646,800	20,731,409
	Benefit Cost Ratio at 12% Discount			(3.37)			
	Net Present Worth at 12% Discount			\$14,583,765			

-105-

105

VI. PROJECT FINANCE

Capital Costs	\$ 434,214
Coop Share	234,214
AID/ANERA	200,000
<hr/>	
Request from AID	\$ 200,000

RAMALLAH POULTRY COOPERATIVE
HATCHERY PROJECT

I. INTRODUCTION

The purpose of the project is to help the Ramallah Poultry Cooperative establish a major hatchery in the West Bank to provide chicks for the poultry industry in the region. Via the project, the West Bank/Gaza poultry growers would be better assured of a quality supply of chicks, the lack of which is a chronic problem. ANERA has undertaken one previous project with this coop, a chicken feed mill, which is quite successful.

The beneficiary target groups are the two hundred coop members plus 200 non-member patrons of the cooperative as well as the people of the West Bank. The coop members produce eggs and meat suitable to the local taste because of the kind of food supplied by the cooperative and the method of distribution. The West Bank population prefers this kind of egg and meat to imported supplies. It is projected that the coop's project would produce 2,320,000 chicks per year or a little less than 50% of the current demand.

The cooperative's contribution toward the project would constitute 63% of the total capital cost; ANERA would contribute 37%. Ramallah is located north of Jerusalem.

ANERA's official relationship to the project would be one

year. The coop would then continue on its own, operating the hatchery at a profit.

II. PROJECT DESIGN

Statement of Problems

First, the supply of chicks to West Bank/Gaza poultry growers, whether for meat or eggs, has been inconsistent at best. The supply originates solely in Israel; importation from more distant sources is prohibitively expensive due to import taxes. Over the years the consistency of supply problem has been chronic. A recent example is that from June 1982 through February 1983 virtually no chicks moved from Israel to West Bank/Gaza growers, This caused farmers, in turn, to curtail their egg and meat production. And some had to close their farms.

Second, the quality of chicks available in the West Bank/Gaza is neither consistent nor high. Israeli growers classify chicks "A", "B", and "C". Israeli growers will not use the low quality "C" category chicks, but unscrupulous West Bank merchants do sell them in the West Bank. Due to the chronic problem of the chick supply in the West Bank, the local growers do buy them, sometimes being aware of the low quality, sometimes not being so aware. The other side of this problem is the insufficient supply (and inconsistent supply) of grade "A" and "B" chicks in the West Bank which the farmers would prefer to purchase.

Third, these consistency and quality problems have variously forced some farmers to close their poultry farms while others have curtailed their size so that severe supply shocks could be better absorbed.

(It should be noted that the supply inconsistency from Israel arises from the pressures of the world egg and chick market on Israeli suppliers. Thus, it has been known for world suppliers to dump eggs and/or chickens in Israel, temporarily lowering the Israeli demand for chicks which in turn frees up chicks for the West Bank market. On the other hand, when Israeli poultry growers land large contracts on the world market, the Israeli growers buy up all the chicks on the market, thus depriving the West Bank/Gaza growers of a supply. In this context, the Israeli Poultry Board assists the Israeli farmers by helping to insure them a guaranteed supply of chicks. This project, then, is designed to help soften this buffeting and allow West Bank/Gaza poultry growers to stay in business on an economic scale.)

Final Goals

First, one of the goals is to establish a hatchery which would produce approximately 2,300,000 chicks per year for the West Bank/Gaza market.

Second, such a project would help overcome the inconsistency of supply because it would meet about 50% of the current demand. It is anticipated that if a consistent (and quality) supply of chicks could be established in the West Bank/Gaza Strip,

this will make the industry more attractive. Then, on the one hand, extant growers will increase their size and, on the other, new operations will be established. There is adequate demand for such increases. West Bank/Gaza growers only meet one quarter to one third of the demand at the current levels of production.

Third, the quality control to be exercised by the coop's hatchery will increase the profit margin of the farmer as well as the meat percent of the chicken to the benefit of the consumer.

Fourth, as noted in the second point above, the growers will not be as seriously buffeted by supply questions and thus will not close or curtail their farms as often as they do currently.

Project Activity Targets

Within one year of the project being funded, ANERA's official involvement in the project will be ended, the project will at that time be an ongoing concern.

III. PROJECT OVERVIEW AND STRATEGY

This project is seen as the first stage in establishing a secure and quality-controlled supply of chicks to West Bank/Gaza poultry farmers. It is anticipated that the project's success will stimulate the poultry industry in the area, creating additional demand for quality chicks.

The project is complementary to a previous, quite successful

AID/ANERA project with the Ramallah Poultry Cooperative which was focused on the establishment of a chicken feed mill.

Project Impact

Predicting possible positive or negative effects of this project on other than the target groups is problematic. On a very general level, with success the project will contribute to economic welfare of the immediate community and the West Bank as a whole. By making employment more attractive in the area, demographic changes in the region will be milder. On a specific level, one might predict that the coop's hatchery might put individual entrepreneurs out of business. This is not the case. Only one other, very small hatchery exists. It is located in Hebron. Not incidentally, it was opened only six months ago after securing a license from the Israeli civilian administration in the West Bank. The Ramallah coop anticipates supplying this commercial enterprise with fertilized eggs.

The impact of the project on women is essentially neutral. They will benefit from the overall project in the same way men will. The impact on values and traditions is best stated as a slight boost in a process that has already commenced; that is, the mechanization/modernization of farming operations. The farmers definitely appreciate the value of appropriate poultry technology and realize this will have a positive impact on their lives.

Project Continuity

ANERA will be officially involved in the project only for one year, the period during which the project will be set up. The cooperative will then operate the hatchery on its own.

The project's continuity, i.e. the continued operation of the hatchery is assured in three ways. First, the coop will be covering all administrative costs. Second, the coop will be paid for the chicks. Third, the coop will set aside an adequate portion of its income from the unit for necessary replacement of equipment. Technically, the hatchery requires certain skills and animal husbandry. Sufficient skilled people in this area exist in the West Bank and the coop will draw from them.

Project Potential

As noted above, the project is designed to meet about half the current chick demand. Thus the other half is a potential. In addition, an assured quality supply of chicks will stimulate growth of the poultry industry and thus more demand.

Project Constraints

None are foreseen at this time.

Project Summary

1) Development -yes

(Project Summary cont'd)

- 2) Training -no
- 3) Poorer elements -yes
- 4) Self-sufficiency -yes
- 5) Self-help/complement local efforts -yes

IV. PROJECT IMPLEMENTATION

Pre-implementation Conditions

The only constraint is obtaining the approval of the Israeli civilian authority in the West Bank for the project. The project has been recommended by the cooperative department. Once the GOI approval is obtained the cooperative may implement the project. It should be noted that GOI has approved a previous project for this cooperative and a comparable facility for a commercial enterprise in Hebron.

Implementation Plan and Schedule

The first phase is the purchase of the equipment and building the hatchery. This the Cooperative Management will do; ANERA will oversee this to insure that proper bidding procedures are observed. Once the funds are available, this phase will take three months to a year to obtain delivery of all material. ANERA will not be officially involved in this phase. The third phase is the operation of the unit.

Technical considerations are not a constraint as noted above.

With respect to environmental concerns, the project will not present problems. The normal procedures for cleanliness and waste disposal will be followed.

Procurement

Table No. 1 demonstrates the procurement requirements.

<u>Table No. 1: Procurement Requirements</u>	<u>Price Estimates</u>
a) 8 Units for Laying Hens	\$ 92,000
b) 2 Hatching Units	23,000
c) Cooling Unit	7,000
d) Alarm system	2,000
e) Electric generator, 200 KWA with extension and electric system	65,000
f) Air conditioner and ventilation system	21,000
g) Egg storage equipment	6,800
h) Dipping installation for parent stock	9,600
i) Incinerator	2,250
j) Movable equipment	12,630
<u>Total</u>	<u>\$ 241,280</u>

Personnel Requirements

The Coop will provide the following personnel for the project:

Table No. 2: Personnel Requirements

1) 3 agricultural engineers (Poultry Specialists) JD 180/month each x 13 months/year	\$ 21,060
2) 20 laborers JD 100/month each x 13 months/year	\$ 78,000
<u>Total</u>	<u>\$ 99,060</u>

V. PROJECT EVALUATION

A. Benefits

1. Creation of an assured supply of chicks, somewhat overcoming the buffeting caused by the world market.
2. Creation of a quality-controlled supply of chicks, helping the poultry growers escape the practices of unscrupulous merchants.
3. Stimulation of the West Bank/Gaza poultry industry.

B. Financial Analysis

1. Capital Costs

Table No. 3: Capital Costs Estimates

a) Land	\$ 30,000
b) Building 30 m x 26 m x 80 JD/meter	187,200
c) Equipment	241,280
d) Chicks distribution vehicles, specially designed, air conditioned	150,000
+ 10%	60,848
Total	\$ 669,328

2. Operation Costs

Table No. 4: Operation Costs Estimates

a) Parent Stock 18,000 chickens x JD 1	\$ 54,000
b) Feed for parent stock - 18,000 chicks (raising chicks from 1 day to 200 days old) 200 days x 1.8 tons x JD 100/ton pre-production period ⁽¹⁾	108,000
(Table 4 cont'd next page)	

(Table No. 4 cont'd)

c) Feed for parent stock (280 days) - 18,000 chicks-during egg production cycle of their lives 280 x 3.24 tons x JD 100/ton production period ⁽¹⁾	\$ 272,160
d) Medical care	15,000
e) Administration	99,060
f) Depreciation	
1. Building 2%	3,744
2. Equipment 10%	24,128
3. Vehicle 10%	15,000
g) Maintenance 2% (building, equipment, vehicle)	11,570
h) Fuel and utilities	45,000
i) Other, 5% of above	32,383
+ 10%	<u>68,004</u>
Total	\$ 748,050

(1) We realize the period noted here exceeds a year. The cost of (b), if one wishes, may be divided into a \$50,000 payment for 120 day old chickens and a \$58,000 cost of raising the chickens for an added 80 days to bring them to the laying stage. The cost of 120 day old parent stock equals the cost of the last 30 days because chickens eat more as they grow.

3) Project Income

Table No. 5: Project Income Estimates

a) No. of chickens - 18,000 of which 2000 are male	16,000
b) Per hen production of chicks	145
c) Chick price = JD 0.15	\$ 0.45
<hr/>	
Sub-Total	\$1,044,000
Salvage Value of parent stock - meat 18,000 x JD 0.30	16,200
<hr/>	
Total Income	\$1,060,200

4) Benefit/Cost Ratio

a) Estimated income	\$ 1,060,200
b) Estimated costs	\$ 748,050
<hr/>	
c) B/C Ratio =	(1.42)

The B/C ratio of 1.42 indicates a clear profitability and feasibility of the project in financial terms.

C. Economic Analysis

Table No. 6 presents the economic analysis. As is demonstrated, at a 12% discount rate the B/C ratio is (1.23) and the net present value after 10 years of operation is \$1,020,069. Both indicators again demonstrate the feasibility and soundness of the project.

2) Economic Analysis:

Table No. 6: Benefit/Cost Analysis and Net Present Worth

Project's Economic Life Years	Capital Item \$	Operation Costs \$	Gross Costs \$	Present Worth of costs at 12% discount factor \$	Gross Benefits \$	Present Worth of Benefits at 12% discount rate \$
1	669,328	--	669,328	597,709	--	--
2						
3						
4						
5						
6						
7		7,480,500	7,480,500	3,773,912	10,602,000	5,348,709
8						
9						
10						
11	<u>Salvage Value - Building yr. 11</u>				149,760	42,981
	669,328	7,480,500	8,149,828	4,371,621	10,751,760	5,391,690

A) B/C Ratio at 12% Discount Rate = (1.23)

B) Net Present Value of the Project at 12% Discount = (\$1,020,069)

VI. PROJECT FINANCE

Total Capital Cost	\$ 669,328
Ramallah Poultry Coop	419,328
AID/ANERA	250,000
<hr/>	
Grant Request from AID	\$ 250,000

/11

Title: Halhul Municipal Wholesale Fruit and Vegetable Market

I. INTRODUCTION

The purpose of this project is to help the Halhul Municipality construct a wholesale fruit and vegetable market that would enable the municipality to regulate the sale of produce, improving the incomes of both individual farmers and the municipal government.

Located 6 km north of Hebron, Halhul has a population of 10,000 and serves as the principal marketplace for produce grown in the surrounding villages. The traditional market has been only loosely controlled by the municipality, which rents the space to private commission agents, who make independent arrangements with merchants and farmers regarding the prices of the products and the commission. This loose system results in abuse of both the municipal regulations and the farmers, which a more tightly managed municipal market is expected to alleviate. Additionally, the old marketplace straddles the busy main street in Halhul, where early morning crowds obstruct traffic and lead to frequent accidents.

The following table indicates the number of people served by the Halhul markets:

Table No. 1: Agricultural Market Area of Halhul

<u>Village</u>	<u>Population</u>	<u>Distance from Halhul</u>	<u>Cultivated Area/Dunum</u>
Halhul	10,000	0	15,000
Beit Ummar	5,000	4 Km North	15,000
Si'ier	6,000	4 Km East	25,000
Al-Shuoukh	10,000	5 Km East	5,000
Other ⁽¹⁾	<u>15,000</u>	6 - 10 Km	<u>35,000</u>
	41,000		95,000

The table indicates that the proposed project will serve about 4000 farm families who cultivate an area of 95,000 dunums.

(1) Sourif, Nuba, Kharas, Taffuh, Beit Kahel, Beit Aula etc...

The new market will be located in the middle of the town of Halhul and will include 24 shops on the main level, and a cool storage area, offices and equipment on the lower level. The municipality also plans to add a mosque, clinic and municipal offices. The ANERA proposal is concerned only with the market.

The total cost of the project is \$1,354,320. ANERA's proposed contribution is \$250,000

II. PROJECT DESIGN

Statement of Problems

The major problem with the existing market stems from

the widely scattered nature of the wholesale agricultural business in the Halhul area. The municipality has authority to regulate only business transacted within the municipal borders. Independent commission agents or merchants who make arrangements with farmers outside the city limits thereby escape existing regulations designed to assure fair prices for the farmer and municipal income from the sales.

The laws of the municipality allow it to collect 4% of the value of sold products as fees, 2% each from the buyer and the seller. In cases in which the commission agent acts as an export merchant as well, he may purchase produce from the farmer at his farm and transport it directly to other areas, thereby avoiding doing his business in the municipal market and avoiding paying the taxes. In other cases, the commission agent acts as a middleman between the farmer and the merchant in the municipal market. By doing business outside of the marketplace, the agent is able to keep both the farmer and the merchant ignorant of the actual market or fair price of the product -- paying a very low price to the farmer and demanding a much higher one from the merchant.

In economic terms, the situation described above translates into a minimal income for the municipality from taxes on the sale of produce. During 120 marketing days in 1982/83, the municipality's 4% fee amounted to only \$18,500, or \$154 per day. The proposed project will significantly improve this income, as is demonstrated in Table 5 of this proposal.

Final Goals

The final goals of the project are:

- 1) To generate income for the municipality by assuring open agreements on market prices for produce and accurate collection of municipal fees;
- 2) To establish a reliable and competitive pricing system by:
 - a) centralizing all transactions between commission agents, farmers and merchants within a single marketplace,
 - b) establishing open, market-sensitive communication between farmers and merchants;
- 3) To assure farmers of competitive prices for their produce;
- 4) To encourage grading of agricultural produce to achieve the best possible prices; and
- 5) To extend the wholesale marketing year from the current 5 months (June through October) to a full 12 months through the use of the cooling facility -- enabling merchants to keep produce fresh and to regulate the quantity available in the market.

Project Activity Targets

The market will be an operating concern about one year after the grant is made. The Municipality has guarantees for the balance of the funds and also owns the needed land. The refrigeration unit will be imported; the other materials are locally available. ANERA's role will be completed after the

building is completed. The municipality will then carry on indefinitely.

The cycle of the market, once built and running, will be based on heavy handling of stone fruit in early summer followed by grapes from mid summer through the winter of the following year. Some vegetables will be handled throughout. From a tonnage standpoint, the wholesale market will handle about 370 tons of fruits and vegetables per day for about 120 days. In addition, the cool storage section of the market will operate for an additional 120 day period.

III. PROJECT OVERVIEW

Project Development

This project was originally proposed by ANERA, approved and funded by AID in 1978. The municipality was not able to proceed at that time due to disapproval of the project by the Israeli authorities. That approval has now been granted by Israeli authorities to the Municipality and to ANERA.

Project Impact

The impact of this project, as described elsewhere, is primarily economic. In addition to the obvious benefit to the municipal budget enabling the city to improve its services, access to a well run market will give the region's farms a fair alternative to their current, exploitive relationships with commission agents. Women are expected to benefit from these improvements as much as men.

An additional positive impact of the project will be the environmental improvements in the new market over the existing facility. As mentioned before, the old market straddles a congested street, leading to frequent accidents. As a single structure in the center of town, the new market will be safer and less disruptive of traffic. Refrigeration and storage facilities will reduce spoilage of produce. The market will be constructed to ensure proper drainage.

Project Continuity

ANERA will be officially involved in the project only for one year, the period during which the market will be constructed. The Municipality will then operate the project on its own.

The project's continuity will be assured in two ways. First, the Municipality will operate the project, employ the staff and cover all administrative and maintenance costs. Second, the project will be a high income generating project which will strengthen financial capacity of the Municipality to assure the continuity of the project.

Project Constraints

None are foreseen at this time. The project has been approved by the Israeli civilian administration on the West Bank as well as funding authorities in the area.

Project Summary

- | | | |
|----------------|---|-----|
| 1) Development | - | yes |
| 2) Training | - | no |

(Project Summary cont'd)

- 3) Poorer elements - yes
- 4) Self-sufficiency - **yes**
- 5) Self-help/complement local efforts - yes

IV. PROJECT IMPLEMENTATION

Implementation Plan and Schedule

The Municipality will open bidding on the implementation stages and will employ an engineering company to supervise the implementation as soon as our grant agreement is signed. The Municipality has been informed that AID funds may not be used on a cost-plus basis; they must be used in a standard bid fashion. The Municipality accepts this requirement. The first phase will be the construction of the building and purchase of equipment; ANERA staff will oversee this to ensure that proper bidding procedures are observed. This will take about 9 months. (The municipal offices and mosque will be constructed during the same period, but ANERA/AID funds are not involved in those aspects of the project.) The operation of the project will continue indefinitely. Again, ANERA will not be officially involved in this phase.

Procurement Requirements

The 24 shops including the cooling area will be rented to the commission agents who will also rent the cooling equipment. The Municipality will only run the weighscale (see project income and capital costs below).

Personnel Requirements

The Municipality will employ additional staff to run the wholesale market as follow:

1) Administrative Director	
JD 150/month x 13 months/year	\$ 5,850
2) Inspector of agricultural products	
JD 100/month x 13 months/year	\$ 3,900
3) 2 fee-collectors	
JD 80 each x 13 months/year	\$ 6,240
4) Watchman	\$ 3,900
5) 2 cleaning laborers	
JD 80/month x 13 months/year	\$ 6,240
Total	\$ 26,130

V. PROJECT EVALUATIONA) Financial Analysis

The project may be evaluated against the following:

1) Capital Costs

<u>Table No. 3: Capital Costs Estimates</u>	<u>U.S.\$</u>
a) Land	
8 dunums x JD 10,000	240,000
b) Excavation and levelling	
2000 cu.m., JD 6 per cu. meter	36,000
c) Cool storage area	
600 sq.m., JD 80 per meter	144,000
d) Finishing works - cooling stores	
600 sq.m., JD 40 per meter	72,000
e) Market stores	
1600 sq.m., JD 100 per meter	480,000

(Table No. 3 cont'd)

	<u>U.S.\$</u>
f) Offices and other stores 380 sq.m., JD 80 per meter	91,200
g) Roads 1800 meter, JD 5 per meter	27,000
h) Wall around the area 400 meters, JD 30 per meter	36,000
i) Installations: cooling insulation, refrigeration unit, weigh scale	<u>105,000</u>
	1,231,200
+ 10%	123,120
<hr/>	
Total	1,354,320

2) Operation CostsTable No. 4: Operation Costs Estimates

a) Personnel JD 8710	\$ 26,130
b) Water and electricity - JD 2000	6,000
c) Depreciation (3.33%) ⁽¹⁾ of Investment Costs	45,100
d) Maintenance (1.5%) ⁽¹⁾ of Investment Costs	20,315
+ 10%	9,755
<hr/>	
Total	\$107,300

(1) Based on best estimates of local qualified engineers.

3) Project IncomeTable No. 5: Income Estimates

a) 4% of market value of agricultural produce		
370 tons/day has a value of \$96,800		
4% = \$3,872 x 120 days ⁽¹⁾	=	\$ 464,640
b) Rent		
24 shops x JD 300 per year	=	21,600
c) Weigh scale		
6200 trucks x JD 0.60 per truck	=	11,100
c) Cooling		
87 tons/day grapes		
<u>40</u> tons other fruits and vegetables		
127 tons/day x 120 days x JD 0.50	=	<u>22,860</u>
	Total	\$ 520,200

(1) Please note that in the 1982/83 marketing season, only \$18,500 was collected. This proposal projects collection of all of the 4% fees due the Municipality. If only half were collected, as the Benefit/Cost ratios indicate, the project is still quite feasible, especially if one were to calculate the benefit to the individual farmer of having access to a much more open market where he will be able to realize a higher and fairer return on his products.

4) Benefit/Cost Ratio

Estimated Income		\$ 520,200
Estimated Costs		\$ 107,300
B/C Ratio	=	(4.85)

The benefit cost ratio indicates a net annual income margin of (4.85) against each cost unit which indicates a very high income generating power of the project, its profitability and financial feasibility.

B) Economic Analysis

The project's economic feasibility is obtained in the following calculation (Table No. 6).

The table assumes a straight-line depreciation over a project's economic life of 30 years, whereas only some of the installations are replaced in the tenth and again in the twentieth years.

2) Economic Analysis:

Table No. 6: Benefit/Cost Analysis and Net Present Worth

Project's Economic Life Years	Capital Item \$	Operation Costs \$	Gross Costs \$	Present Worth of costs at 12% discount factor \$	Gross Benefits \$	Present Worth of Benefits at 12% discount rate \$
1	1,354,320	107,300	1,461,620	1,305,018	0	0
2-9	0	858,400	858,400	475,919	4,161,600	2,303,179
10	150,000	107,300	257,300	82,844	520,200	167,192
11-19	0	965,700	965,700	184,082	4,681,800	890,840
20	150,000	107,300	257,300	26,674	520,200	53,831
21-30	0	1,073,000	1,073,000	62,848	5,202,000	304,160
Total:	\$ 1,654,320	\$ 3,219,000	\$ 4,873,320	\$ 2,137,385	\$ 15,085,800	\$ 3,719,202

A) Benefit/Cost Ratio at 12% Discount Rate = $\frac{\$3,719,202}{\$2,137,385} = (1.74)$

B) Net Present Worth of the Project
at 12% Discount Rate = $\$3,719,202 - \$2,137,385 = \$1,581,817$

121

- 1) The Table indicates a positive B/C Ratio of 1.74 units of income against each unit of costs. This is quite an acceptable ratio since the running costs of the project are the administrative costs which are relatively minimal. The operational costs include the depreciation item at 3.33% of total investment items.
- 2) The net present value of the project demonstrates the ability of the project to add about \$1.5 million dollars to the national income over the life of the project, which adds to the justification of the project's feasibility from economic perspective.
- 3) It should be remembered that a non-calculated benefit of the project is a fairer market value for the farmers' product. For example, if the farmers just earn an additional increment equal to the municipality's tax, the farmers' benefit would be about \$450,000 per year. If they realize 10% above the tax increment, the amount would ^{be} \$1,125,000 per year. In essence, then, another way to measure the project would be to run the farmers costs and benefits through Table No. 6. We have not taken this step, however, because of the difficulty of establishing an acceptable estimate. Also, the extant method of analysis fully shows the economic feasibility of the project.

VI. PROJECT FINANCE

Total Costs	\$ 1,354,320
The Municipality's Costs	\$ 1,104,320
ANERA/AID contribution	\$ 250,000
<hr/>	
ANERA grant request from AID:	\$ 250,000

Title: Jericho Municipality - Mineral Water Bottling Project

I. INTRODUCTION

At one level the purpose of this project is to provide partial funding to the Jericho Municipality so that it may establish a mineral water bottling facility. The historical town of Jericho possesses one of the finest mineral water springs, Ein Sultan, which currently provides the town and its environs with drinking and irrigation water. The proposed project would consume only a tiny portion of the spring's excess water flow.

At a second level, the project will provide the municipality with additional income for its municipal services. The projected income from the project would cover approximately 20% of the current municipal budget. The town provides services to about 14,000 residents as well as numerous tourists.

A third effect of the project would be to slightly increase employment in the area through the project's direct hiring of individuals. In addition, marketing of the water will make Jericho better known, i.e., it will have an advertising effect hopefully to the benefit of Jericho's economy through stimulating the tourist industry.

The beneficiary target groups are as mentioned above:

(1) the population of the town of Jericho through provision of

services, direct hiring, and stimulation of industry (i.e., tourist) and (2) the tourists who also benefit from the municipal services.

The Jericho Municipality will contribute about 72% of the funding from its own resources and ANERA would contribute about 28%.

Jericho is located in the Jordan Valley, a few kilometers north of the Dead Sea.

ANERA's official relationship to the project would last one year. The Municipality then would continue on its own indefinitely.

The following two tables respectively present a summary of Ein Sultan's water flow and use and a summary of the capital costs of the proposed project.

Table No. 1: Ein Sultan water production and usage.

Total production	620 m ³ /hour
Total use	510 m ³ /hour
Irrigation	62.5 m ³ /hour
Surplus I	47.5 m ³ /hour
Proposed project utilization	1.5 m ³ /hour
Surplus II	46 m ³ /hour

Table No. 2: Project Capital Costs

	<u>Costs</u> <u>US \$</u>
a) Designs, studies and supervision	\$ 30,000
b) Land 2½ dunums	75,000
c) Building, 30x30 sq. meter at JD81 per sq. meter	219,000
d) Installations, (electric, water...)	30,000
e) Equipment (delivered)	445,000
+ 10%	79,900
Total	\$878,900

II. PROJECT DESIGN

Statement of Problems

The major problem facing the Jericho municipality is its limited financial base. Before the 1967 war, the municipal government served and collected taxes from a population of 55,000. Due to the war and migration of the population to the East Bank, Jericho's population has been reduced to 14,000, while its geographic size and infrastructure remain the same. It now attempts to serve this area with only 30% of the taxes and fees it collected before 1967.

In addition to the loss of population and taxes, Jericho's role as a tourist spot, winter resort and agricultural market has declined. The prosperous members of the community -- those able to invest in the development of the town -- have moved to Jerusalem and Ramallah. Employment opportunities for the remaining residents are very limited.

The mineral water of the Ein Sultan springs represents the greatest, and least utilized resource of the municipality. Water from

the springs, which are owned by the municipality, is classified as first grade mineral water and would be competitive in an export market. It's high quality and built-in recognition factor as coming from the biblical town of Jericho should enhance the marketability of this mineral water.

Final Goals

The final goals of the project are:

- 1) To build the financial resources of the Municipality. The project is expected to generate \$170,000 net income per year.
- 2) To strengthen municipal services through the expanded budget from revenue from the factory, thereby promoting re-development of the tourist industry and investment in hotels, restaurants, markets, transportation and other facilities.
- 3) To enable the municipality to finance a second planned project involving the replacement of open irrigation canals with a modern irrigation system. This would improve the productivity of cultivated land, and extend the system to land that is not currently irrigated.

Project Activity Targets

Within one year of the project being funded, ANERA's official role in the project will be over. The building will have been constructed, equipment purchased and staff hired; the municipality will run the factory indefinitely. Of the 15,000-1.5 liter bottles produced a day, about 10% will be

marketed in the West Bank and Gaza. The rest will be exported to the countries of the Arabian Peninsula (via Jordan).

III. PROJECT OVERVIEW AND STRATEGY

This project was originally planned under the Jordanian administration in the mid-sixties, but was not implemented before the 1967 war. In the mid-seventies a group of West Bank entrepreneurs tried to revitalize the plan, but were unable to establish a private industry on municipally owned property.

The project is complementary to the proposed FY 82 Land Reclamation project with the Jericho Marketing Cooperative, which would open new land for cultivation.

Project Impact

This project is expected to have a direct, positive effect on the general development of the Jericho area. Increased revenue for the municipal budget will greatly increase its ability to provide services to the area. Development of the mineral water industry and extension of the irrigation system will create new jobs and attract new residents, which will, in turn, promote construction and commerce. Women will benefit from these developments alongside men.

From an environmental perspective, the proposed project poses no problems. The factory will make better use of a currently underutilized resource, without causing any future depletion of supply. In the project design, consideration will be given to

accessways, drainage, or potential congestion of traffic that the factory might cause. An ANERA consultant trained in these issues will work with the municipality.

Project Continuity

ANERA will be officially involved in the project only for one year, the period during which the equipment will be purchased. The municipality will then operate the factory on its own. The project's continuity is assured in three ways: The municipality's long-standing interest in developing these springs; the financial benefits to the community as a result of the project; and the simple maintenance and operation of the equipment. The municipality will set aside an adequate portion of the income from the factory for necessary replacement of equipment. The same equipment is used in plastic factories in Bethlehem and Ramallah, and scientific personnel familiar with water quality issues are available at the Arab College of Nursing.

Project Potential

As discussed earlier in this proposal, this project will have a broad, positive effect on the development of the entire Jericho area. However, we do not anticipate replicating one exactly like it. Income generating projects for municipalities, though, are a priority for us.

Project Constraints

None are foreseen at this time.

Project Summary

- 1) Development -yes
- 2) Training -no
- 3) Poorer elements -yes
- 4) Self-sufficiency -yes
- 5) Self-help/Complement local efforts -yes

IV PROJECT IMPLEMENTATIONPre-Implementation Conditions

The only constraint would be obtaining GOI approval. As Jericho was one of eight municipalities which GOI recommended for ANERA projects, approval of this project is expected.

Implementation Plan and Schedule

The first phase is the purchase of the equipment. This the Municipality will do; ANERA staff will oversee this phase to insure that proper bidding procedures are observed. Once the funds are available, this phase will take three months to a year to obtain delivery of all material. Also during this phase, the coop will buy land and construct a 900 m² building. The second phase is hiring staff, a matter of a very short time.

(Implementation Plan and Schedule cont'd)

ANERA will not be officially involved in this phase. The third phase is the operation of the unit which will continue indefinitely. Again, ANERA will not be officially involved in this phase.

Procurement Requirement

The equipment consists of a complete full-automatic production line which includes:

Table No. 3: Equipment

	<u>Costs (estimates)</u>
1) Bottle production equipment	\$ 360,000
2) Filling equipment	30,000
3) Auxiliary equipment: labelling, water reservoir, filtering, weighscale, etc.	30,000
4) Electric installations	20,000
5) Hand tools	5,000
+ 10%	44,500
<hr/>	
Total	\$ 489,500

Personnel RequirementsTable No. 4: Personnel

	<u>Costs/Year</u>
1) Director JD 150 x 13 month/year	JD 1,950
2) Accountant JD 120 x 13 month/year	JD 1,560
3) Secretary JD 80 x 13 month/year	JD 1,040
4) 12 laborers 12 x JD 100 x 13 m/y	JD 15,600
<hr/>	
Total	JD 20,150

V. PROJECT EVALUATION1) Financial AnalysisA) Capital CostsTable No. 5: Capital Costs Estimates

	<u>Costs US\$</u>
a) Designs, studies and supervision	\$ 30,000
b) Land 2½ dunums	75,000
c) Building, 30x30 sq. meters at JD 81 per sq. mt.	219,000
d) Installations, (electric, water...)	30,000
e) Equipment (Cif)	445,000
+ 10%	79,900
<hr/> Total	<hr/> \$878,900

B) Operation CostsTable No. 6: Operation Costs Estimates (first year)

1) Electricity - JD 400/month	\$ 14,400
2) Fuel and oil - JD 200/month	7,200
3) Administration and labor	60,450
4) Depreciation	
a) Equipment 10%	44,500
b) Building 2%	4,380
5) Maintenance 2% (bldg, installations & equip.)	13,894
6) Raw Materials (PVC)	
a) Production capacity of the line	
b) 1100 bottles/per hr. of 61 gr. weight 10 hr/day - 6 day/wk - 52 week/year	
c) Bottles weight =	209.4 tons
+ 5% waste =	10.5 tons
<hr/> Total need	<hr/> 220 tns/year
d) Price/per ton (Cif) = \$1500	
e) Cost of raw material =	\$330,000

7) Transportation Costs

- a) Total production = 3,432,000 bottles/year
 b) Truck load = 7,000 bottles
 c) No. of shipments = 490 truck loads/year
 d) Transportation per shipment = JD 100
 e) Transportation costs = JD 49,000 = \$ 147,000

8) Packing

- a) One carton contains 16 bottles
 b) Price of one carton = 50 fils (JD 0.05)
 c) Total packing costs =
 $3,432,000 \div 16 \times 3(0.05) = 32,175$

9) Miscellaneous (interest and others)

- 5% of the above 32,699
 + 10% 68,669

Total \$ 755,369

C) Project IncomeTable No. 7: Project Income Estimates

- a) Total production 3,432,000 bottles
 b) Sale price for wholesale agents = JD 0.09/bottle

 c) Total income \$ 926,640

D) Benefits/Costs/Ratio - Financial

- a) Estimated income \$ 926,640
 b) Estimated costs \$ 755,196
 c) B/C Ratio (1.23)

The ratio indicates a profitability margin of 23% which indicates profitability of the operation and feasibility of the project. In other terms, the project will net about \$170,000 per year

2) Economic Analysis:

Table No. 8: Benefit/Cost Analysis and Net Present Worth

Project's Economic Life Years	Capital Item \$	Operation ¹ & Maintenance Cost \$	Gross Costs \$	Present Worth of costs at 12% discount factor \$	Gross Benefits \$	Present Worth of Benefits at 12% discount rate \$
1	878,900	701,428	1,580,301	1,410,983	926,640	827,357
2	0	701,428	701,428	559,174	926,640	738,712
3	0	701,428	701,428	499,263	926,640	659,564
4	0	701,428	701,428	445,770	926,640	588,897
5	0	701,428	701,428	398,009	926,640	525,800
6	0	701,428	701,428	355,365	926,640	469,465
7	0	701,428	701,428	317,290	926,640	419,165
8	0	701,428	701,428	283,295	926,640	374,254
9	0	701,428	701,428	252,942	926,640	334,156
10	0	701,428	701,428	225,841	926,640	298,353
<u>Salvage Value (80% of building costs)</u>						175,200
Total				\$4,747,932		\$5,410,923

(1) exclude depreciation because depreciation factored in by previous capital item column

A) Benefit Cost Ratio (B/C) = (1.14)

B) Net present worth (B-C) = \$ 662,991 after 10 years

mf

- a) The table indicates an economic discounted B/C ratio of (1.14) which assures an acceptable profitability for the project. The analysis is based on the assumption that no additional investment is expected to be made within the 10 year economic life of the equipment. A total replacement of the equipment will be made in the eleventh year. At the end of 10 years the building will have a salvage value of \$175,000 or 80% of its value when constructed (buildings depreciate by 2% per year - see operation cost estimates - i.e., 20% in 10 years). The amount is not subject to discounting procedures because of its value increase over the period as a result of price increases. It is dealt with as savings from building costs in year (11). The discount rate of 12% has been chosen to represent the average Jordanian interest rates of capital investment.
- b) The discounted Net Present Value of over \$600,000 after 10 years also demonstrates the profitability and feasibility of the project.
- c) Please note that the \$171,000 income of the project is about 20% of the municipality's annual budget. As such, the project will contribute substantially to that budget and enhancement of municipal services.

VI. PROJECT FINANCE - CAPITAL COSTS

1) Total Project	\$ 878,900
2) Jericho Municipality	628,900
3) AID/ANERA contribution	250,000
<hr/>	
Grant Request from AID	\$ 250,000

BEIT JALA MUNICIPALITY INDUSTRIAL ZONE PROJECT

I. Introduction

The proposed project would assist the Municipality of Beit Jala in constructing a building to house a number of small industries currently or soon to be operating in the city. The purposes of the project are three. First, the project would help generate funds for the budget of the Municipality so that it may in turn provide superior services for its residents. Second, by providing superior facilities for light industries, the Municipality hopes to generate new businesses and keep businesses from moving out of its tax base. Third, the project will address a serious environmental problem, by removing the industries from their currently unorganized siting and placing them in a zoned area. This will remove noise, smell, and traffic pollution from residential and commercial areas.

The project will be located in the town of Beit Jala, population 5000, which is located near Bethlehem south of Jerusalem. The project would cost \$326,700, of which the Municipality would bear \$176,700 or 54% and ANERA would bear 46%.

ANERA would be involved in the project for one year while the building is being constructed. After completion, the Municipality would run the project indefinitely.

II. Project Design

Statement of Problems

- 1) As with many of the municipalities on the West Bank, the Beit Jala Municipality is chronically short of budgetary and capital funds.
- 2) Light industry in the West Bank and Gaza Strip is in a generally underdeveloped state, as indicated, inter-alia, in the Meron Benvenisti study "The West Bank and Gaza Data Base Project Pilot Study Report," Agency for International Development (pp. 11-22). One of the problems, it is here contended, is the lack of an adequate infrastructure for such light industry. Beit Jala mirrors this more general picture.
- 3) The extant light industry is spread throughout the town in an unorganized fashion. Thus, many shops are located in residential and commercial areas. A result of this problem is environmental degradation, namely, noise pollution, odor pollution, and traffic congestion in non-industrial areas.
- 4) Many of the shops are illegally located (with respect to extant zoning laws), but the municipality is unable to enforce the regulations because the affected industries do not have alternate, legal locations to which they could move.

As background, the light industry picture in Beit Jala is represented in Table No. 1.

Table No. 1: Types of light industry in Beit Jala

<u>Type</u>	<u>No.</u>
1) Carpenters and olive wood factories	30
2) Mechanical Shop	9
3) Blacksmitheries	20
4) Metal Workshops	10
Total	69

Final Goals

- 1) To generate about \$17,000 of revenue for the municipality which approximates 7% of the municipality's operating or service budget.
- 2) To help alleviate some of the environmental problems by concentrating industry in one location and assisting the process of moving industry out of residential and commercial zones.
- 3) To stimulate the growth of light industry by providing a more attractive infrastructure for its growth.
- 4) To help the Municipality enforce its own zoning regulations.

Project Activity Dates

Within one year of the project being funded, ANERA's official involvement in the project will be terminated. The building will have been constructed and the shops rented. The

Municipality then will manage the building and collect rents indefinitely.

III. Project Overview and Strategy

This project reflects our continuing emphasis on assisting municipalities in their efforts to enhance revenues for their budgets as well as to improve the provision of municipal services. Previous examples are: Halhul Wholesale Fruit and Vegetable Market, El-Bireh Slaughter House, Hebron Library Gaza Sewers, and the Jericho Water Bottling Facility.

In addition, this project focuses on the need to stimulate light industry, an area of increased interest of the PVOs and local planners.

Project Impact

Predicting possible positive or negative effects of this project ^{on} other than the target groups is problematic. On a very general level, with success the project will contribute to the economic welfare of the immediate community and the West Bank as a whole. By making employment and the establishment of light industries more attractive in the area, demographic changes in the region will be milder.

The impact of the project on women is essentially neutral. They will benefit from the overall project in the same way men will. The impact on values and traditions is best stated as

a slight boost in a process that has already commenced. Growth of light industry has already started; this project would just help continue and hopefully help improve the process.

The environmental effects of this project are positive. Overall, the improved facilities are expected to alleviate the existing noise, pollution and congestion, as mentioned already. The only concerns will be in the construction and site of the building itself. An ANERA consultant trained in these matters will oversee the development of the project to ensure that these issues are addressed.

Project Continuity

ANERA will be officially involved in this project for only one year, the period during which the building will be constructed. The project's continuity will be assured by the rents it produces. They will be considerably greater than the costs of managing and maintaining the building.

Project Potential

Replication potential is great. Improved industrial zones for light industry are in demand by the people and industries. For example, both Ramallah and El-Bireh have active industrial parks and some towns have industrial buildings similar to the one described in this project. In addition, all the municipalities

suffer cash flow problems and would like to have income generating projects.

The major constraint to replication is the availability of capital. If this constraint can be surmounted, replication would be ensured.

Project Constraints

None are foreseen at this time.

Project Summary - Five AID General Criteria for MESRF Grants

- 1) Development - yes
- 2) Training - no
- 3) Poorer elements - yes
- 4) Self-sufficiency - yes
- 5) Self-help/complement local efforts - yes. For details see above and the budget, below.

IV. Project Implementation

The Israeli Civilian Governor recommended that ANERA undertake a project in Beit Jala. Presumably official approval will be forthcoming in an expeditious manner.

Implementation Plan and Schedule

The first phase is the construction of the building. This the municipality management will do; ANERA staff will oversee this to ensure that proper bidding procedures are observed. Once the funds are available, this phase will take

one year to complete. The second phase is the renting of the shops to light industries and collecting rents. Again, ANERA will not be officially involved in this phase.

Technical Considerations

Construction of the building and providing utilities is quite straightforward. They are not constraints.

As noted, the building will help improve environmental conditions in Beit Jala.

Procurement Considerations

The Municipality will procure the construction of the building. ANERA will ensure that proper bidding procedures are followed.

Personnel Requirements

The minimal requirements of managing the industrial building will be handled by municipality staff.

V. Project Evaluation

A. Intangible Benefits - Not Quantified

The project may be evaluated against the following:

- 1) Its alleviation of environmental problems.
- 2) Its stimulation of light industry.

B. Tangible Benefits

- 1) Generation of income for the Municipality in the amount of about \$17,000 per year.

2) Table No. 2 Capital Cost Estimates

1. Land	\$ 40,000
2. Building 925 m ² x 80 JD per meter	222,000
3. Utility Installations	10,000
4. Road	25,000
+ 10%	<u>29,700</u>
Total	\$ 326,700

3) Table No. 3 Operation Cost Estimates

1. Administration	\$ 200
2. Depreciation 2% (excluding land)	5,140
3. Maintenance 0.3% (excluding land)	770
+ 10%	<u>611</u>
Total	\$ 6,721

4) Table No. 4 Project Income Estimates

1. No. of shops 18	
2. Yearly rent per shop	400 JD
3. Various municipal fees on business and industries	<u>50</u>
Total	\$24,300

5) Benefit/Cost Ratio - financial

Project Income	\$24,300
Project Cost	6,721
B/C Ratio	(3.6)

6) Benefit/Cost Ratio - Economic:

See Table No. 5 below.

2) Economic Analysis:

Table No. 5 : Benefit/Cost Analysis and Net Present Worth

Project's Economic Life Years	Capital Item \$	Operation Costs \$	Gross Costs \$	Present Worth of costs at 12% discount factor \$	Gross Benefits \$	Present Worth of Benefits at 12% discount rate \$
1	326,700	0	326,700	291,743	0	0
2-30		194,909	194,909	48,156	704,700	174,109
31 salvage value						8,705
	<u>326,700</u>	<u>194,909</u>	<u>521,609</u>	<u>339,899</u>	<u>704,700</u>	<u>182,814</u>

Note: Using this form of analysis,
both the B/C Ratio and
Net Present Worth are
negative

155

Comments on Feasibility

1. The project is financially feasible for the Municipality because of its sources of funding which charge no interest. As such, it will generate income for the Municipality as well as the other benefits discussed earlier.
2. If 12% interest were charged on the total capital for the project, the project would not be financially feasible.
3. However, this project may be compared to a municipal project in the U.S. Thus in the U.S., the law allows municipalities to borrow from the public at very concessional rates. The current rate is about 4.5%. At such a rate, if Beit Jala municipality were paying interest on the capital, the project would be financially feasible.
4. The following exemplifies the above.

1) Operation Costs	\$ 6,721
2) 4.5% on \$326,700	14,702
	<hr/>
Total Costs	\$ 21,423
Total Income	\$ 24,300
B/C Ratio	(1.13)

5. For the above reasons, the project is not economically

feasible in economic terms using the quantified measures at a 12% discount rate. However, the non-quantifiable measures argue for the project: environmental enhancement, zoning, quality of life, stimulation of light industry. The same arguments are made for U.S. municipal projects and the U.S. law which allows them to raise exceptionally concessional funds.

6. As noted, a project with the Beit Jala Municipality is recommended by the Israeli Civilian Governor. In our judgement, it behooves all concerned to be responsive, where possible and acceptable, to such recommendations.

VI. Project Finance

Total Capital Costs	\$326,700
Municipal Contribution	176,700
<u>AID/ANERA Contribution</u>	<u>150,000</u>
Grant Request from AID	\$150,000

III. FINANCIAL PLAN

A. Gross Budget

1. Subgrants	\$ 2,150,000
2. Administration/Project Dvlpmt.	220,200
TOTAL	\$ 2,370,200

B. ANERA/AID Administration/Project
Development Budget Breakdown -

Twelve Months

Salaries	\$ 85,000
Payroll Taxes & Employee Benefits	10,000
Professional and Contract Service	7,000
Occupancy	13,200
Office Supplies & Equipment	1,500
Telephone & Telegraph	3,500
Postage, Shipping & Storage	500
Travel - Local (West Bank & Gaza) and International	17,500
Development Research	--
Miscellaneous	2,000
TOTAL DIRECT EXPENSES	140,200
Washington Indirect	80,000
TOTAL	220,200

- C. About 65% of the above would be expended by the East Jerusalem office
- D. Three quarters of the subgrant expenditures should be available to ANERA upon the opening of the Federal Reserve Letter of Credit in favor of ANERA, that is on September 1, 1983. This requirement is made necessary by the nature of the subgrants because the large majority are for the provision of equipment or capital expenditures. This equipment must be purchased at the initial stages of each of the projects in order for them to be properly initiated and executed and the capital expenditures are similar.

IV. BUDGET SUMMARY

A. Subgrants

1. Tulkarm Agricultural Marketing Land Reclamation Project	\$ 200,000
2. Tarqumiya Cooperative Land Reclamation Project #2 for the South East Hebron Region	150,000
3. West Bank Agricultural Cooperative Mechanization Projects #3	300,000
4. Wadi Fouqin Agricultural Cooperative Water Management Project	200,000
5. Al-Nassaria Cooperative Dairy Facility Project	200,000

V. PROJECT EVALUATIONA) Financial Analysis1) Capital CostsTable No. 8: Capital Costs Estimates

1) Land	\$ 30,000
2) Building	60,000
3) Machinery	297,000
4) Miscellaneous (consultancy, licence etc..) 2% of the above	7,740
+ 10%	39,474
<hr/>	
Total	\$434,214

2) Operational CostsTable No. 9: Operation Cost Estimate

A. Raw Material

1) Raw Milk

a) Sheep/Goat 6 tons/day x 400 JD/ton
x 120 days \$ 864,000

b) Cow 6 ton/day x 300 JD/ton
x 360 days \$1,944,000

subtotal \$2,808,000

6. Al-Nahda Cooperative Dairy Facility Project	\$ 200,000
7. Ramallah Poultry Cooperative Hatchery Project	250,000
8. Halhul Municipal Wholesale Fruit and Vegetable Market Project	250,000
9. Jericho Municipal Mineral Water Bottling Project	250,000
10. Beit Jala Municipal Light Industry Center	150,000
Subtotal	\$ 2,150,000
B. Administration	\$ 220,200
TOTAL	<u>\$ 2,370,200</u>

HEADQUARTERS:
1522 K Street, N.W., #202
Washington, D. C. 20005
202-347-2558
Cable: ANERAID



AMERICAN NEAR EAST REFUGEE AID

MIDDLE EAST OFFICE:
29 Nablus Road
P.O. Box 19982
East Jerusalem
via Israel

March 9, 1983

Kathryn Y. Cunningham
Grant Officer
Regional Operations Division/NE
Office of Contract Management
Agency for International Development
Department of State
Washington, D.C. 20523

Dear Ms. Cunningham:

In response to your request for an illustrative budget for two ANERA subgrantees, Al-Jieb Regional Agricultural Cooperative and the Za'atara Livestock Cooperative, please find below an explanation of the equipment to be purchased by the cooperatives with the help of AID/ANERA funds. Please note that these figures are extracted from the budget included in the grant proposals presenting the total cost of each project.

Al Jieb

1 Bulldozer, Caterpillar D92	\$ 130,000
3 Crop field tractors	\$ 70,000
Total	<u>\$ 200,000</u>

Za'atara

Wall, building	\$ 63,000
Shed, pipes, asbestos sheet	\$ 60,000
Water reservoir, metallic	\$ 5,000
Feed Containers, wood & iron stakes	\$ 15,000
Total	<u>\$ 143,000</u>

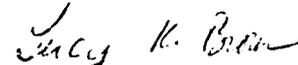
ANERA projects are jointly funded by ANERA and the subgrantee institution, with ANERA/AID funds covering 50% or less of the total project cost. ANERA/AID funds are designated for capital costs of the project as allowable by the AID Standard Provisions. The subgrantee covers operational and remaining capital costs through its own

102

sources. It should be noted that ANERA has consistently followed this method of funding in all of its grants; and that these figures have already been approved by AID.

If you require further explanation of these figures, please do not hesitate to let me know. Thank you.

Sincerely,



Lucy K. Brown
Vice President

cc: ✓Bernie Salvo, NE Tech