

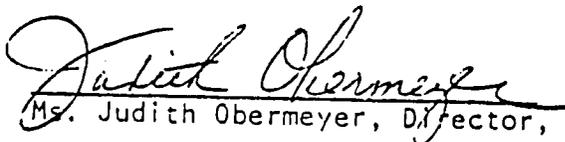
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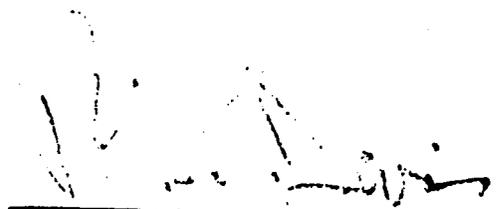
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Proposal to the  
Agency for International Development  
for Supplemental Funding  
of the Gaza Strip and West Bank Program  
of the Community Development Foundation.

Submitted in July 1982



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## I. General Introduction

The Community Foundation is an affiliate of Save the Children, Inc., a private non-profit development assistance agency which was established in 1932 and is presently based in Westport, Connecticut. Save the Children/Community Development Foundation has dedicated its efforts for nearly a half-century to assisting self-help programs among socially and economically disadvantaged communities in Africa, the Middle East, Asia, Latin America and North America.

The subject of this proposal is an application to the United States Agency for International Development for grant funding which will supplement the amount it has granted to the Community Development Foundation for the period from July 1, 1981 to December 31, 1982. The Agency for International Development has provided grant funding for the CDF program in the Gaza Strip and the West Bank since the program was initiated in June 1978, as has been described in a series of proposals and reports which CDF has submitted.

The first section below provides the context of the present proposal, in terms of the program which has already been approved by USAID. A brief outline is given of the general objectives of the CDF program in the Gaza Strip and the West Bank, and also the criteria for selection of individual projects.

The second section provides considerably more detail concerning each of the six which are hereby submitted to the Agency for International Development. A separate Project Description is provided for each newly submitted project.

The third section below presents the implementation schedule based upon an analysis of the current situation of all CDF projects. Following this is an updated Project Summary Sheet and Project Progress Report.

## A. Project Listing

### 1. Basic Grant Agreement.

On July 29, 1981, a grant agreement was signed for the period July 1, 1981 to June 30, 1982. Grant No. NEB-0166-G-SS-1057-00, for Project No. 298-0166, granted the sum of \$801,250 to the Community Development Foundation. Of this amount, the sum of \$251,050 was provided for administration, and the remaining \$550,200 for project activities. The total amount of submitted projects at that time was as follows:-

	\$
WB020 Halhoul, Zeboud and Annaba Market Road Network	35,000
WB033 Attil Agricultural Co-operative Reservoir	30,000
WB034 Deir Ghassaneh Co-operative Agricultural Fund	20,000
WB035 Beit Rima Co-operative Agricultural Loan Fund	25,000
WB036 Deir Dibwan Co-operative Earthmoving Equipment	15,000
WB037 Wadi Fukin Agricultural Road Construction	30,000
GS041 Arab Medical Association Ophthalmic Clinic	20,000
GS050 Beit Lahiya Village Council Water Network	80,000
GS054 Musadra Quarter Agricultural Road Improvement	25,000
GS055 Zawaida Village Council Water Supply Network	25,000
WB068 Nu'eimeh Water Committee Springs Development	10,000
WB069 Abu Dis Water Supply Co-operative Main Line	60,000
WB072 Olive Seedling Subsidy and Distribution, FY81	70,000
WB073 Almond/Plum/Apricot Subsidy and Distr. FY 81	5,000
WB074 Eastern Slopes Water Cistern Repair Subsidies	50,000
WB075 El-Bireh Municipality Sewage Treatment Plant	100,000
WB076 El-Bireh Municipality Forest Seedling Nursery	30,000
WB077 Arab Development Society Wells and Irrigation	100,000
WB078 Jenin Municipality Drainage Pipe Installation	50,000
WB079 Bethlehem District Wholesale Market Equipment	100,000
WB080 Bani Na'im Village Council Water Pipe Network	15,000
GS081 Beit Hanoun Village Council Agricultural Road	60,000
GS082 Hessie Quarter of Rafah Internal Water Network	25,000
WB084 Grape Vine Trellising Equipment Subsidy, FY81	20,000
	<hr/> 1,000,000

Of the twenty-four projects, the CDF application was not completed for one (WB079), and four others (WB034, WB035, WB075 and WB077) were not approved by USAID. The total amount of funding for the nineteen approved projects was \$655,000 whereas the funding provided for these subprojects was \$550,200. The Community Development Foundation was permitted to select the individual projects to receive funding at its discretion.

The actual selection of projects has largely been determined by the fact that not all projects which have been approved for funding have received clearance from the Military Government. Five of the above projects (WB020, WB033, WB036, WB076 and WB078) have still not received clearance from the government, and another (GS054) has received clearance but cannot be initiated by the local group due to the blockage of its own funds by the Government.

Of the thirteen projects which are considered to be approved by USAID and also cleared by the Military Government, the entire USAID granted amount has been allocated as follows:-

	\$
WB037 Wadi Fukin Village Council Market Access Road	40,000
GS041 Arab Medical Association Ophthalmic Equipment	30,000
GS050 Beit Lahiya Council Water Distribution Network	80,000
GS055 Zawaida Village Council Water Pipeline Network	30,000
WB068 Nu'eimeh Committee Water Resource Development	20,000
WB069 Abu Dis Co-operative Water Lines and Reservoir	60,000
WB072 Olive Seedlings Subsidy & Distribution FY-81--2	120,000
WB073 Other Seedlings Subsidy & Distribution FY-81-82	10,000
WB074 Eastern Slopes Water Cistern Repair Subsidies	20,200
WB080 Bani Na'im Village Council Water Pump Network	20,000
GS081 Beit Hanoun Village Council Agricultural Road	60,000
GS082 Hessie Quarter of Rafah Internal Water Network	20,000
WB084 Grape Vine Trellising Equipment Grants FY81-82	40,000
	<hr style="width: 100%; border: 0.5px solid black;"/>
	550,200

The changes in the original amounts allocated are each due to circumstances which have altered since the projects were first submitted for approval. Provision was also made in the same grant for projects which have been approved by USAID but which cannot yet be implemented.

	\$
WB020 Halhul, Zeboud and Arnaba Market Road Network	35,000
WB033 Attil Agricultural Co-operative Water Reservoir	50,000
WB036 Deir Dibwan Co-operative Earthmoving Equipment	25,000
GS054 Musadra Quarter Agricultural Road Improvement	30,000
WB076 El-Bireh Municipality Forest Seedling Nursery	25,000
WB078 Jenin Municipality Drainage Pipe Installation	100,000
	<hr/> 265,000

The amount of \$ 265,000 was incorporated into the USAID Grant as well as the subsequent amendment since it remains possible that some or all of these projects will yet be cleared. Although a continuation of the effort to gain project clearance is not certain to succeed, it is nevertheless important to demonstrate that the CDF staff will stand behind its recommendations until or unless a valid reason is advanced for revising or withdrawing a project.

## 2. Amendment to the Basic Grant.

In a June 1981 amendment to the Basic Grant, updated project descriptions were provided for two projects which had been submitted earlier; namely the Bethlehem Market and Bireh Sanitation projects. Both were cleared by USAID, on condition that an economic feasibility study be conducted for the former. In addition to the Bethlehem and El-Bireh projects, eleven projects were also submitted for the first time and approved in the amendment. These were as follows:-

	\$
WB075 El-Bireh Municipality Sewage Treatment System	250,000
WB079 Bethlehem Municipality Wholesale/Retail Market	500,000
WB086 Ya'bad Municipality Reservoir and Water Lines	50,000
WB087 El-Jeeb Village Council Internal Water Network	50,000
WB088 Mukhmas Village Council Internal Water Network	50,000
WB089 Ikhza'a Village Council Water Tower and Network	30,000
WB091 Eastern Slopes Region Erosion Control Barriers	35,000
WB092 Jalameh Water Committee Main Line and Network	50,000
WB093 Arrabeh Municipality Reservoir and Main Lines	50,000
WB094 Shufah Village Council Well and Water Network	50,000
WB095 Kawbar Village Council Internal Water Network	40,000
WB096 Abu Shkheidem Village Council Water Network	40,000
WB097 El-Mazra'ah el-Qibliya Council Water Network	40,000
	<hr/> 1,235,000

The total amount requested for the 13 new projects, plus the 7 carry-over projects, included in the first amendment was therefore \$ 1,500,000.

In addition, the amendment made provision for one final category of projects which for a variety of reasons, differing for each project, certain amounts could not be fully expended for projects funded under the first grant or, in other cases, the amounts allocated were not sufficient to complete the planned project. The total amount requested for them was as follows:-

	<u>Supplemental Request</u> \$
WB019 Beit Sahour Municipality Road and Water Supply	22,100.50
WB021 Nundur, Sinjir and Kinnar Village Access Roads	9,920.91
WB026 Silir and Shuyukh Co-operative Water Networks	10,000.00
WB027 Abu Qash Village Council Water Supply Network	6,024.80
WB062 Hebron Red Crescent Soc'y Multi-purpose Center	5,000.00
WB065 Kufeiret Village Council Water Supply Network	13,399.03
WB066 Mirkeh Village Council Water Pump and Network	18,000.00
WB070 Battir/Sharafeh Committee Water Supply Network	<u>10,000.00</u>
	94,445.24

In short, the total amount allocated in the amendment for project expenditure, presuming that every project noted above would receive funding approval and clearance, was \$ 1,594,445.24. The June 1981 amendment to the basic grant also made available \$ 132,000 for administration and extended the grant timeframe to December 31, 1981. Recognizing, however, that not every project is likely to make such progress during the grant period, the amount CDF requested and had approved for the current period was limited to the even sum of \$ 1,500,000. In this connection, the amendment stipulated that the \$ 500,000 authorized for the Bethlehem Municipality Market Cold Storage Unit cannot be disbursed until CDF furnishes in form and substance a satisfactory economic and financial analysis of factors relevant to the unit.

### 3. Supplemental Request.

The current request for supplemental projects is for \$ 1,250,000. The projects submitted here complement those submitted and approved by USAID in the basic grant and its subsequent June 1982 amendment.

All of the projects are consistent with the stated intention of the Community Development Foundation to concentrate its efforts on a "basic needs" strategy of development. The projects here submitted fall into two designated priority sectors: water and sanitation (GS123, WB124 and GS125) and agriculture/marketing (WB107, WB108, GS111, GS114, GS115, GS117 and WB126). The concentration of all USAID-funded activities in discrete subsectors is another step toward the design of a comprehensive development strategy for meeting the basic needs of the people of the Gaza Strip and the West Bank. Local staff are presently involved in preparing a plan and strategy for the next two years which had not been completed by the time of this supplemental request. The forthcoming October submission to USAID will demonstrate how the current projects inter-relate within a larger scheme.

The current project list is almost entirely focused on the Gaza Strip in an effort to meet an immediate need for increased project activity in the Strip. This list balances the two prior submissions which were more oriented towards West Bank development needs. The implementation of these projects, especially those which are a group's second involvement with the Community Development Foundation, demonstrates CDF's ongoing commitment to identify and follow up priority development projects with local groups in Gaza.

Of particular note is the fact that this submission includes two projects, totalling \$710,000, for Rafah. In this connection, it is recalled that CDF earlier sought Regional Cooperation funding for basic infrastructure development in Rafah, and that after consultation it was determined in May 1982 that the CDF proposal would not be eligible for such funds. CDF remains however, committed to assisting the Municipality of Rafah to meet its basic infrastructural (water, sewage, roads) needs and, therefore, includes here one project related to water resource development and one project for sewage disposal in West Rafah.

The scale of these projects is indicative of the fact that an estimated one-half of Rafah still lacks one or more essential services, such as a clean and reliable water supply or adequate sanitation. With more restrictions being placed on the flow of outside funding to support such projects, the role of CDF as the only private voluntary agency operating in Rafah becomes crucial. The implementation of these Rafah projects becomes at once the realization of the next step in the municipality's plans to develop its basic infrastructure, as well as an immediate response to help minimize the disruptions associated with the post - Camp David division of Rafah. The projects selected are thus dually oriented to address basic needs and to deal with Rafah's special problems derived from being a community physically divided between Egypt and Israel.

As an attachment to the seedling distribution projects (WB107 and WB108) proposed herein for the West Bank and Gaza Strip is an evaluation of past year's seedling distribution projects. The evaluation included a thorough review of this project's objectives and beneficiaries, as well as its operating procedures. On the basis of this evaluation, project description WB107 and WB108 have been prepared to reflect a major recommendation of the evaluation; namely, a reduction in the seedling subsidy paid by CDF. In light of the findings of the evaluation, it is the intention of CDF to retain, as an important component of its agriculture sectoral activities, the seedling distribution project.

One final component of this supplemental submission is a request for \$ 5,000 additional funding for one project (WB067) which was planned to be completed by the end of the last grant (NE-G-1303), September 30, 1981. For reasons described below this amount could not be expended before the final closure of the earlier grant. It is important that provision be made now for this project so as final payment can be released in accordance with CDF's project agreement with the Village Council of Hableh. In the June 1981 amendment USAID approved \$ 100,000 for nine projects in circumstances similar to Hableh.

Hableh Village Council Water Well and Network (WB067)

Implementation of this project came close to being completed prior to the September 30, 1981 closing date for the earlier USAID grant. However, the pump which was ordered from the United States did not arrive in Haifa until November. An added complication emerged when the customs agent CDF contracted to clear the pump from the port died before this was accomplished. It was not until January 1982 that the agent's affairs were straightened out and the paper work arranged to finally clear the pump from customs.

Between October 1, 1981 and April 30, 1982 expenses were incurred related to shipping fees, customs and transportation of the pump from the port to the village of Hableh. The pump arrived in good condition and was installed under the supervision of the West Bank Water Authority. The \$ 5,000 requested for the Hableh project will enable CDF to complete outstanding obligations as follows:-

Customs Tax	\$ 4,400
Shipping and Freight Charges - Los Angeles to Haifa (balance due)	\$ 300
Transport from Haifa to Hableh	\$ 200
Customs' Agent fees	\$ 100
Total:-	<u>\$ 5,000</u>

## B. Program Objectives

The overall purpose of the Community Development Foundation program in the Gaza Strip and the West Bank is to assist and encourage local groups in the selection, planning, implementation and evaluation of projects which will improve the social and economic conditions of their societies. Financial and technical assistance will be made available to those which demonstrate that they need and can effectively use such assistance.

The specific objectives of the Community Development Foundation program are:-

- a. To help community groups assess their own collective needs and resources, and design the projects which will make best use of these resources in meeting their priority needs.
- b. To help local groups secure the resources needed to carry out such projects, including locally gathered and externally provided resources.
- c. To assist these communities to become more self-reliant, resourceful and creative in using the resources which are made available to meet these needs.
- d. To enable local community groups to continue, extend and replicate this approach, relying to an ever greater extent on locally available human, organizational and financial resources.
- e. To help stimulate the conditions for more self-reliant communities and more effective community leadership through participation in innovative projects, fostering of contacts with sources of technical assistance, and training in principles of effective project design and management.

In order to achieve these objectives, the Community Development Foundation has instituted a procedure for reviewing project activities that have been proposed by the many local groups and institutions that are based in the Gaza Strip and the West Bank. Field offices were opened in East Jerusalem and Gaza in August 1978, and highly qualified local staff members and consultants have been recruited to work closely with each of the local groups in designing, implementing and evaluating project activities.

It is the responsibility of the CDF Project Co-ordinators and Consultants, all of whom are residents of the Gaza Strip and the West Bank, to maintain regular contact with local groups and leaders, and to assist them in all stages of project activities. However, it remains the responsibility of the respective local groups to decide upon their own project recommendations to bring about a maximum of community participation in planning and implementing these projects, and to seek whatever additional technical and financial help may be needed.

In addition to the technical assistance, training and co-ordination services which are provided to local groups, the Community Development Foundation staff recommends financial assistance for a number of projects selected from among those which are presented for consideration. While each group is free to propose whatever project it may prefer, the CDF policy is to apply the following general criteria in selecting the projects for which it will provide financial assistance:-

- a. Beneficiaries: Each project should contribute to the general well-being of a substantial part of the community, especially with respect to meeting their most basic needs. The set of projects that is selected should assist a wide spectrum of local institutions, and should give special attention to the needs of the lowest income groups and communities.
- b. Emphasis on Women and Youth: As an affiliate of Save the Children, an agency with a special concern for and expertise in child-oriented programming, the Community Development Foundation seeks to encourage local groups in efforts to meet the special needs of children and youth. Save the Children/Community Development Foundation has also recognized that its interest in the well-being of children is best served by helping to upgrade the roles, skills and participation of women through its programs.
- c. Self-Help Emphasis: Subject to the overall circumstances of each community, it is expected that at least half of the costs of each project will be supplied by the local counterpart group. All CDF projects are carried out in such a way as to reduce as much as possible the dependence of local groups on external capital inputs.

- d. Economic Orientation: The CDF staff attempts to assure that at least one-half of its project expenditures are directed to projects that will make a significant contribution to increasing both immediate and long-range income and employment levels.
- e. Institutional Development: A consistent effort will be made to assist a wide range of community groups, and especially to work through and strengthen local institutions such as co-operatives and charitable societies which are in turn able to provide financial and technical assistance to other local individuals and groups.
- f. Environmental Impact and Technological Appropriateness: Another major objective of the CDF staff is to assure that counterpart institutions have adopted measures to assess the full impact of their activities on the environment, on the local economy, and on their social relations. This increased awareness applies not only to the detection and avoidance of inappropriate or harmful measures, but also to the advocacy of positive measures such as reforestation, land reclamation and water resource development.

Furthermore, the Community Development Foundation will select projects in such a way as to complement the work of other private voluntary organizations and government departments, and to meet the expectations of its respective funding sources. To a certain extent, higher priority will be accorded to projects which help to achieve larger programming goals, such as the announced targets of the United Nations - sponsored International Drinking Water and Sanitation Decade. The Community Development Foundation will at all times refrain from participating in any activity which would compromise its non-sectarian, non-profit and non-political nature.

### C. Logical Framework

In this section is the logical framework adapted to the circumstances of the current proposal.

Project Goal: To improve the capabilities of community level institutions in the Gaza Strip and the West Bank to plan, implement and evaluate projects which will improve social and economic conditions in their communities.

Objectively Verifiable Indicators: An increase in the ability of community groups to design project plans for CDF consideration, implement the projects selected for assistance, and effectively evaluate and follow up on these projects.

Means of Verification: Semi-annual progress reports, a study of documents relating to specify projects, and site visits.

Assumption: No major destabilizing factors such as civil strife or armed conflict.

Project Purpose: To assist local groups in the implementation of a selected list of project activities, in a way which improves their own abilities to:

- assess their own collective needs and resources;
- become more resourceful and creative in the use of their resources;
- design a set of project activities which meets their needs;
- carry out project activities in a co-operative and effective manner;
- evaluate results in terms of stated longer-term objectives, and such factors as environmental impact and technological appropriateness;
- initiate further activities, increasingly reliant on their own abilities and resources.

Objectively Verifiable Indicators: Number of acceptable projects submitted, project plans prepared, project contracts signed, projects implemented and evaluated.

Means of Verification: Project Descriptions, Project Contracts, Project Evaluations, and USAID Reports.

Assumptions: No significant breakdown in relationships established with local groups and government agencies.

Project Output: Implementation of the following projects, in whole or in part:

WB019	Beit Sahour Municipality Road and Water Supply	\$ 50,000
WB020	Halhoui, Zeboud and Arnaba Market Road Network	35,000
WB021	Nunqur, Sinjir and Kinnar Village Access Roads	70,000
WB026	Si'ir and Shuyukh Co-operative Water Networks	200,000
WB027	Abu Qash Local Committee Water Supply Networks	40,000
WB033	Attil Agricultural Co-operative Water Network	30,000
WB036	Deir Dibwan Co-operative Earthmoving Equipment	35,000

		\$
WB037	Wadi Fuqin Committee Agricultural Market Road	30,000
GS041	Arab Medical Assoc. Ophthalmic Clinic in Rafah	30,000
GS050	Beit Lahiya Village Council Water Distribution	100,000
GS054	Musadra Quarter Agricultural Road Improvement	30,000
GS055	Zawaida Village Council Water Pipeline Network	30,000
WB062	Hebron Red Crescent Soc'y Multi-purpose Center	100,000
WB065	Kufeiret Village Council Water Supply Network	45,000
WB066	Mirkeh Village Council Water Pump and Network	45,000
WB067	Hableh Village Council Water Well and Network	55,000
WB068	Nu'eimeh Committee Water Resource Development	20,000
WB069	Abu Dis Co-operative Water Lines and Reservoir	60,000
WB070	Battir/Sharafeh Committee Water Supply Network	70,000
WB072	Olive Seedlings Subsidy & Distribution, FY81-82	127,500
WB073	Other Seedlings Subsidy & Distribution, FY81-82	7,500
WB074	Eastern Slopes Region Cistern Repair Subsidies	50,000
WB075	El-Bireh Municipality Sewage Treatment System	250,000
WB076	El-Bireh Municipality Forest Seedling Nursery	25,000
WB078	Jenin Municipality Waste-Water Drainage System	100,000
WB079	Bethlehem Municipality Wholesale/Retail Market	506,500
WB080	Bani Na'im Committee Water Pump and Main Lines	20,000
GS081	Beit Hancun Village Council Market Access Road	60,000
GS082	Rafah Municipality Neighborhood Water Networks	25,000
WB084	Grape Vine Trellising Equipment Grants, FY81-82	40,000
WB086	Ya'bad Municipality Reservoir and Water Supply	60,000
WB087	El-Jeeb Local Committee Internal Water Network	50,000
WB088	Mukhmas Local Committee Internal Water Network	50,000
GS089	Ikhza'a Village Council Water Tower & Network	30,000
WB091	Eastern Slopes Region Erosion Control Barriers	50,000
WB092	Jalameh Village Council Main Line and Network	50,000
WB093	Arrabeh Municipality Reservoir and Water Line	50,000
WB094	Shufah Local Committee Well and Water Network	50,000
WB095	Kawbar Local Committee Internal Water Network	40,000
WB096	Abu Shkheidem Council Internal Water Network	40,000
WB097	Mazra'ah el Qibliya Committee Water Network	40,000
WB107	Olive Seedling Subsidy and Distribution FY 83	70,000

	\$
WB108 Almond & Fruit Seedling Subsidy and Distribution FY 83 .	5,000
GS111 Fishermen's Co-operative Marketing Facilities	100,000
GS114 Deir Al-Balah Vegetable Co-operative Transport Vehicle.	25,000
GS115 Zawaida Village Council Internal Road	85,000
GS116 Jabalia Village Council Agricultural Road	70,000
GS123 Rafah Municipality/Domestic Water Supply Stage One.	210,000
WB124 Burqin Village Council Domestic Water Supply	130,000
GS125 West Rafah Municipality Sewage Disposal	500,000
WB126 Land Reclamation for Spice Plant Cultivation	50,000

Objectively Verifiable Indicators: Fulfillment of project contract agreements, and completion of the proposed projects.

Means of Verification: Project Evaluation, Project Audits, and semi-annual reports to USAID.

Assumptions: No major changes in the objective conditions relating to each project, or in the social, political or economic environment.

Project input: The revised commitments for the current grant period, assuming an additional grant of \$1,250,000 from USAID, are as follows:-

- (a) Agency for International Development \$ 3,683,250.
- (b) Community and Government Contributions \$ 3,300,200.

Objectively Verifiable Indicators: Actual spending levels of USAID grant, reports of community contributions, and other financial records.

Means of Verification: Project audits, semi-annual reports, Save the Children financial reports, Price Waterhouse audits.

Assumptions: Funds are available to CDF staff when needed; counterpart groups meet their assumed obligations; and procurement, construction and other delays are minimized.

D. Budget.

This proposal consists of a supplemental funding request for sub-projects for the grant period extending to December 31, 1982. The following table provides a summary of the present grant budget in the context of the current supplemental request:

	<u>Basic Grant July 1, 81 - June 30, 1982.</u>	<u>Amendment Extending Basic Grant to Dec. 31, 1982</u>	<u>Total Supplemental Budget</u>	<u>Total</u>
	\$	\$	\$	\$
Administration	251,050	132,000	-	383,050
Direct Aid	550,200	1,500,000	1,250,000	3,300,200
Total Amount USAID Grants.	801,250	1,632,000	1,250,000	3,683,250

The total cost of the proposed program is estimated at \$ 7,558,950 includes the following sources of funds:-

(1) Agency for international Development	\$ 3,683,250
(2) SC/CDF Administration Overhead	275,500
(3) SC/CDF Fund Raising Efforts	300,000
(4) Community and Government Contributions	3,300,200
	<hr/>
	\$ 7,558,950

- (1) The Agency for International Development is requested to provide the full amount of the current request for \$ 1,250,000 in addition to the \$ 2,433,250 which has already been granted.
- (2) Save the Children/Community Development Foundation will meet home office and other administrative costs from its own resources, which will be considered as constituting its financial contribution to the Gaza Strip and West Bank programs. For all of its international programs, Save the Children/Community Development Foundation calculates the value of services provided by the national office,

other field offices and contracted personnel as equal to 7.48% of field office program and administrative costs through December 31, 1982. According to this formula, which has been accepted by USAID as the standard overhead rate, the SCF/CDF contribution to this 18 month program is valued at \$ 275,500, a figure which does not include the Save the Children budget for four high-impact community programs in Israel and the Gaza Strip.

The Agency's input includes many kinds of services to local groups, in addition to cost-sharing; it provides technical assistance, help in project design, and liaison with other private and government agencies, including efforts to gain exemption for customs and V.A.T. taxes. The CDF staff plays a continuing role in supervision, auditing, evaluating and followup: in many cases staff members maintain contact with local group on a periodic basis throughout a series of collaborative project activities. The CDF staff also continues to seek out other sources which are able to provide technical and financial assistance to local groups, either directly or through Save the Children/Community Development Foundation.

- (3) SCF/CDF Fund Raising Efforts: Save the Children/Community Development Foundation will increase its efforts to raise funds from other sources for activities in the Gaza Strip and the West Bank. This is the same amount indicated the last submission to USAID.
- (4) Community and Government Contribution will account for at least the value of the direct aid provided to local groups. Experience has confirmed that CDF is able to require that the local group contribute a minimum of one-half of the project cost, and that the local contribution often rises much higher. Furthermore, the value of exemptions on customs duties and value-added taxes, which the CDF staff is often able to obtain on behalf of local groups, can be considered as a government contribution. Since these taxes can account for a major proportion of total project costs, this service is often requested by local groups.

COMMUNITY DEVELOPMENT FOUNDATION  
GAZA STRIP AND WEST BANK OFFICES

1. Project Title: Fishermen's Cooperative Marketing Facilities

2. Project Number: 82-111

3. CDF Allocation: \$ 100,000

4. Project Beneficiaries:

The 1,500 members of the Fishermen's Cooperative and their 7,500 dependents will directly benefit from this project.

5. Project Background:

The Fishermen's Cooperative was established in 1973 with the following objectives:

- to increase the profits of the fishermen by eliminating the role of middlemen between the individual fishermen and the consumer
- to coordinate the purchasing of imported equipment at better prices
- to secure an ongoing market with the fish canning factories in Israel

CDF first assisted the Cooperative in 1979 to purchase an ice-making machine. Through the production of their own ice, fishermen have realized a savings which they have tended to re-invest in their equipment. The Cooperative itself has also benefited from the generation of income from the ice machine to support the Cooperative's services which include supplying ice, nets and ropes; purchasing fishing equipment; arranging marketing of its catch; and providing low interest loans of up to \$1,000 to Cooperative members in need during the poorer fishing months. As a result of the overall success of the Cooperative and the advantages accruing to its members, in part as a consequence of this project, membership in the Cooperative has increased by 100 in the past two years.

Fishing has traditionally been Gaza's most well-known asset, but the future prospects for the 3,000 fishermen look bleak unless careful planning is made in advance to accommodate for the steady shrinkage in the area used by the fishermen. For example, territorial changes since the signing of the Camp David peace agreement have caused the fishermen's catch to plummet from 8,000 tons in 1979 to 3,000 tons in 1980.

Further reductions are expected due to the April, 1982 Camp David border adjustment; fishermen foresee the catch as being little more than 1,500 tons per annum. The reason for the predicted loss is the inaccessibility of Port Said-El Arish fishing grounds, an area traditionally fished in winter months. Summer fishing will not be affected because fish migrate at this time from Turkish waters through Gazan waters. However fishermen fear that their yearly catch, 75% of which is sardine caught both in deep water and close to shore, will be seriously

affected.

The Cooperative members have isolated their problems at this time as follows:

- constricted fishing grounds
- the high cost of equipment and gasoline
- middlemen who take advantage of the lack of transport facilities to dictate prices
- the absence of a port

Solutions to these problems are not easily found. The latter problem, for example, means that all boats even the larger ones, must be dragged on to the beach by tractors when not in use. This is an expensive procedure which significantly shortens the life of the boats. It also takes up much valued time and energy, in addition to being dangerous during rough weather. Israeli security considerations forbid all persons including fishermen from being on the beach after night fall. This creates problems for the fishermen because long periods must be spent idling offshore waiting for a window where a heavy storm (the fishermen are unable to land and bring in their catch for marketing).

The existing situation is one which the fishermen have little control over; it seems unlikely to change in their favor in the near future. The construction of a port, on the other hand, is not only prohibitively expensive, but any change in the beach front topography would also be ruled out for security reasons. To maintain a livelihood dependent on the sea, the fishermen must turn to improving their marketing or fishing activities to ensure their continued economic viability.

It is in this context and in the light of the success of the earlier project that CDF now recommends, at the request of the Cooperative, assistance to purchase a refrigerated truck and refrigeration equipment for the Fishermen's Cooperative.

A refrigerated truck is considered to be a priority; the purchase will be in the long run cheaper than the present method of hiring vehicles. Over 250 journeys are made each year to the market of Ramallah on the West Bank, at a cost of \$150 per trip, giving an annual outlay of \$37,000. With fuel costs at \$60 per trip and a driver's salary being \$250 per month, the equivalent number of journeys in a cooperatively owned vehicle would total \$18,000 per year, leaving \$19,500 each year for maintenance costs and for profit. In addition to the basic savings in the transportation, other positive factors appear. Arriving on the West Bank with an unrefrigerated truck full of fish, the seller is at the mercy of the buyer, as the former will only have a limited period in which to sell his product. Also, in the event of a breakdown, or any other unforeseen holdup, the complete loss of the load can be avoided if the truck is refrigerated. Each year, several thousand dollars worth of fish are destroyed in this way. A potential marketing channel to Jordan may also be opened up, as interest has already been expressed by the Jordanian Airline, Alia, and the Intercontinental Hotel chain. Currently, in the absence of a refrigerated vehicle, there is no way to move the catch to Jordan in marketable condition. In short the ownership of a truck will not only be a great savings, but will give the fishermen better control over their marketing.

As far as local marketing in Gaza is concerned, apart from a small shop near the fishermen's offices, the Municipality-owned fish market in the center of Gaza is the primary outlet. A Municipality-licensed buyer acts as a middleman to the local traders, and to Israeli buyers, and the Cooperative is obliged to sell to him at a 5% discount on the standard market price. The fishermen are proposing that CDF assist

them to equip a market facility and storage unit, complete with cleaning and packaging machines. It is planned that the market facility be built by the Cooperative close to its offices; it will serve as their retail and wholesale outlet, eliminating the middleman, thus not only saving the 3% in question, but also gaining the equivalent of his profit.

The nets and ropes will be the Cooperative's contribution to the project to replace the worn and broken equipment now in use; this is part of the standard service offered by the Cooperative. These are to be of a tougher, more durable polyethylene material. The availability of good ropes and nets is essential to the fishermen, especially when they are in effect restricted to fishing within a zone running from Bait Hancun to Rafah (60 kilometers) and 10 kilometers from the shore. Replacing worn equipment with new equipment will enable the fishermen to catch a maximum number of fish in a limited area without danger of over-fishing the area.

#### 6. Project Purpose:

In keeping with its policy of contributing to projects which promote self-help, especially cooperative enterprises, CDF supports the Cooperative's efforts to raise its profits through improving its marketing facility and capability thereby enabling them to be compensated for quantitative losses in their catch. Unless steps are quickly taken to improve their marketing income, future winter months are likely to be critical periods, as the Cooperative's financial resources dwindle.

#### 7. Project Output:

	<u>CDF</u>	<u>Cooperative</u>
Ford Truck and Refrigerated Box Market Facility:	\$ 42,000	
2 Refrigerators (one storage, one showcase)	\$ 38,000	\$ 12,000
2 Machines (one cleaning, one packing)		\$ 25,000
Construction of 5x20m supermarket		\$ 48,000
New nets and ropes		\$ 15,000
Nets 10mm 5 tons		
25mm 1 ton		
Ropes 12mm 1 ton		
18mm 1 ton		
20mm 1 ton		

#### 8. Project Input:

CDF Contribution	\$ 100,000
Fishermen's Cooperative	\$ 100,000

All operational and maintenance costs will be borne by the Cooperative. CDF will seek to secure equipment purchased taxfree and will comply with US/AID Standard

COMMUNITY DEVELOPMENT FOUNDATION  
GAZA STRIP AND WEST BANK OFFICES

1. Project Title: Deir El Balah Vegetable Cooperative Transport
2. Project Number: 82-114
3. CDF Allocation: \$ 25,000
4. Project Beneficiaries:

The beneficiaries of this project are the 350 farmers who are members of the Cooperative and their 3,000 dependants. Potential beneficiaries also include those farmers who are not yet members of the Cooperative but who will be able to use the facility and who may eventually become Cooperative members.

5. Project Background:

Deir El Balah is a town situated in the center of the Gaza Strip and has a population of 20,000, including 7,000 Palestinians with refugee status. The Vegetable Cooperative in Deir El Balah was formed in 1973 to meet the marketing needs of the farmers of the central part of the Gaza Strip, who wished to deal with AGRISCO. This Israeli vegetable exporting monopoly requires its clients to form cooperatives in order to eliminate AGRISCO's small-scale buying of produce. Subsequently, it deals only with recognized and registered groups. To benefit from AGRISCO's marketing capabilities, the farmers of Deir El Balah joined together to form the cooperative.

A typical farmer in the Cooperative owns land inherited through several generations. The average area is 10 dunams (100m<sup>2</sup>) with a maximum of 20 dunams possible. Though of generally good agricultural soil, the area's local climate demands summer irrigation from privately owned or shared wells. These are normally driven by diesel pumps and operate drip (50%), flood (30%), or sprinkler (20%) systems. The tendency in this part of the Strip is for the farmers and their families to live in the nearby villages, usually not more than one kilometer from their land.

Citrus production (which has its own cooperative) accounts for 60% of the use of cultivated land, and irrigated vegetable production utilizes approximately 28%. The latter falls into two seasonal crops, winter and summer. Winter crops include squash, cucumber, green pepper, potatoes, and eggplant; while the summer crops include tomatoes, cabbage and cauliflower. Since the formation of the Cooperative, all members' produce, except for tomatoes, can now be securely marketed at pre-arranged prices through the Cooperative to AGRISCO. Previously the only outlet was via the local market which was a slow and unreliable process.

After the formation of the Cooperative, an office building and storage space were rented on one dunam of government land. Income was generated originally by

the issue of shares to members, plus a regular payment of 5% of the value of all goods handled by the Cooperative. Low profits from farming such small, individually owned plots of land usually meant that only the family could be employed on the land. In an estimated 80% of the cases the main breadwinner is required to seek work as a wage laborer, usually in Israel, in order to make ends meet.

It was decided in 1979 that the farmers' profit margin could be raised if they were to collectively own a tractor and various mechanical attachments, thus precluding the need to hire such items at high prices. This project was successfully implemented in 1980 with CDF contributing \$12,500 to the \$14,750 of the share of the Cooperative. The evaluation of this project has been forwarded to US/AID. Since that date, the Cooperative has been able to reduce the cost of tractor/machinery hire by 20% (from IS 100 to IS 80 per dunam), and has been able to purchase \$10,000 worth of new equipment. Other benefits of the organization include the purchase of needed production inputs, (seeds, seedlings, fertilizers and pesticides) in bulk which the Cooperative sells at a reduced price to members. It also takes responsibility for packaging and grading produce and arranging its transportation to AGRISCO.

One of the largest and the most regular expenses that the farmers are currently meeting is the transportation cost. In order to adhere to the contractual terms of their agreement with AGRISCO, all produce bought must be delivered to the central depot at Ashdod some 75 kilometers to the north. Current rates for a 5-ton truck, including driver and fuel, are \$40-45 for the journey.

In peak season there was often 3 to 4 journeys to be made each day. The total amount of journeys per annum is about 300, giving an annual outlay of \$13,000 for transportation. The Cooperative estimates that ownership of the truck could cut the annual bill of \$13,000 by at least 25% as follows:

Fuel	\$5,000
Driver's salary	\$2,500
Miscellaneous	<u>\$1,000</u>
Total	\$8,500

In addition to these savings, extra income can be generated by renting the vehicle to other farmers when it is not being used for Cooperative purposes. Another as yet unexplored potential is the opening of other marketing outlets such as the West Bank and Jordan. As journeys of such distances require longer periods away from Gaza, sometimes requiring a stop-over during the night, the rental of transport becomes prohibitively expensive, but becomes economically feasible with a cooperatively owned truck and a salaried employee. This could also help to alleviate the problem of marketing tomatoes, which cannot be sold through AGRISCO.

The proposal for the transport truck is part of a plan linked to the growth of the Cooperative and the corresponding growth of the farmers' incomes. The next stage in the Cooperative's plan is the possibility of eliminating middlemen concerned in the importation of fertilizers and pesticides. The estimated saving on cooperatively imported, transported, and stored chemicals is in the range of 30%. However, this requires a large capital outlay plus a considerable extension of storage facilities. It is planned that profits by the ownership of this vehicle will facilitate the speedier accumulation of capital for this purpose.

#### 6. Project Purpose:

The purpose of this project is to assist the farmers in this Cooperative to join together to improve farming and marketing conditions and to help them overcome adverse conditions which if faced alone, would be insurmountable. The purchase of a transport vehicle will become a profit-making asset for the Cooperative and lead to greater independence in the control and choice of markets.

As the non-refugee population of the central and southern Gaza Strip has always been traditionally centered around agriculture, this sector is of primary concern to CDF. Failing to attend to its problems would only accelerate the significant trend of population movement away from agricultural areas towards the already over-crowded towns in search of wage labour. Permanent migration overseas with all the attendant problems connected with the breakdown of traditional structures is another consequence of the disintegration of rural life. Supporting cooperatives is one feasible way of helping mitigate these trends.

#### 7. Project Output:

The representatives of the Cooperative have already contacted several U.S. vehicle sales agencies and have obtained a full list of prices. The most suitable vehicle for this purpose is a Ford.

Relevant costs are broken down as follows:

Ford Cab and Chassis model 1717		
Retard cab weight: 10-ton gross weight		\$21,000
2.5 meter width and 7.7 meter length box		7,000
Driver's salary for one year		3,000
Operational cost and maintenance		<u>3,000</u>
Total		\$31,000

The CDF grant will be used for the purchase of the American-supplied Ford vehicle. CDF will comply with US/AID Standard Provisions in procuring this vehicle and will seek to import the vehicle tax-free.

#### 8. Project Input:

The total cost of the project is:	\$51,030
Community Development Foundation	\$25,000
Vegetable Cooperative	\$26,030

COMMUNITY DEVELOPMENT FOUNDATION  
GAZA STRIP AND WEST BANK OFFICES

1. Project Title: Zawaida Village Council Internal Road
2. Project Number: 82-115
3. CDF Allocation: \$ 85,000

4. Project Beneficiaries:

The entire population of the village of Zawaida which numbers 4,500 will directly benefit from this project.

5. Project Background:

Zawaida is a small village situated in the central part of the Gaza Strip, 2 kilometers north of Dair El Balah (see map). The village is the central point of a tract of land of approximately 15,000 dunams, located about 1 kilometer from the Mediterranean coast. The population of 4,500 consists of 1,400 residents of Beduin origin who have remained stationary in the area for several generations. Typical of the densely populated Gaza Strip, the village is rapidly increasing in size, with over 30% of its available work force leaving each day to work as laborers in Israel. The village is predominantly agricultural, with 60% of its produce in squash, cucumber, tomatoes, potatoes, eggplant and onions.

Until 1978, the leadership of Zawaida village was traditional, with a sheikh, or mukhtar, as the tribal and village leader. The village leadership had no legal status, and was therefore unable to provide services for the village. This inadequacy only increased the isolated atmosphere of the village, which without legal registration, was not in a position to meet the needs of its residents. Following the example of other neighboring villages, the inhabitants of Zawaida decided to organize themselves and adjust to their rapidly changing environment by forming a Local Committee in March, 1978. The Committee began with 7 members, elected by the various heads of the family units in the area and was headed by the traditional mukhtar.

The Committee's first endeavor was to bring electricity to the area. This was the first priority in a list of identified needs. This was followed by a water pipeline, road paving, school, clinic, and sewage schemes. Electricity was brought to the village at a cost of \$63,000, which was met by a 20% loan and a 25% grant from the Israeli government, plus contributions of \$ 235 from each family in the village. A Committee room was built, which soon contained Zawaida's first telephone, now used by many in the village. With the help of the international organization "CARE", a gravel agricultural access road was laid from the village road to the sea.

In 1980, the Committee approached CDF for assistance in the construction of an access road leading from the main north-south Gaza arterial road to the center of the village (see map). CDF agreed to contribute 50% of the cost; the 300 meter road was completed in a record 20 days and was positively evaluated by CDF in early 1981. Being impressed with the village's initiative, the Israeli government publicly congratulated the committee at the road's opening ceremony, and conferred on them the status of Village Council. This legal status, together with the opening of the road, were a major step towards meeting the needs of the local population. With the Council empowered to employ staff and to receive funds from outside sources, other projects went ahead. A Council building, health clinic, and a sports club were constructed, and in 1981 the Village Council approached CDF again for assistance in laying a drinking water pipeline. The cost of the project was shared by CDF and the Village Council and was recently completed in December, 1981.

The current proposal asks CDF to assist in paving 2,600 meters of the road which runs through the center of the village (see map). During the winter rains this road has often become impassable, which has negated the real value of the access road which CDF assisted Zawaida in paving. A flourishing plastics factory, which makes pipelines, has just opened and a small concrete block-making enterprise has also appeared. Plots of land along the road have recently been set aside for the construction of a school. All these enterprises can be facilitated by paving the internal village road, as well as the day-to-day life of all the inhabitants. In addition 154 farmers and their families whose land will be made more accessible will also benefit.

Zawaida Village Council is prepared to pay 30% of the total cost, and has had a technical study of the road prepared by a local engineer. CDF's technical advisor has reviewed this study positively. Implementation of the project will be done by a local contractor on the basis of competitive bidding.

#### 6. Project Purpose:

The purpose of this project is to assist the people of Zawaida village in continuing their efforts to improve their social and economic well-being. CDF is particularly anxious that the momentum gathered from earlier projects in such a comparatively short time, should continue unimpeded and should act as a model of potential self-development to similar groups in the area. This particular road project addresses a major agricultural and infrastructural need which encourages in a significant way the further development of the village as an economic unit.

#### 7. Project Output:

The Zawaida Village Council has provided CDF with a technical study of the proposed road, details of which are summarized in the following table:

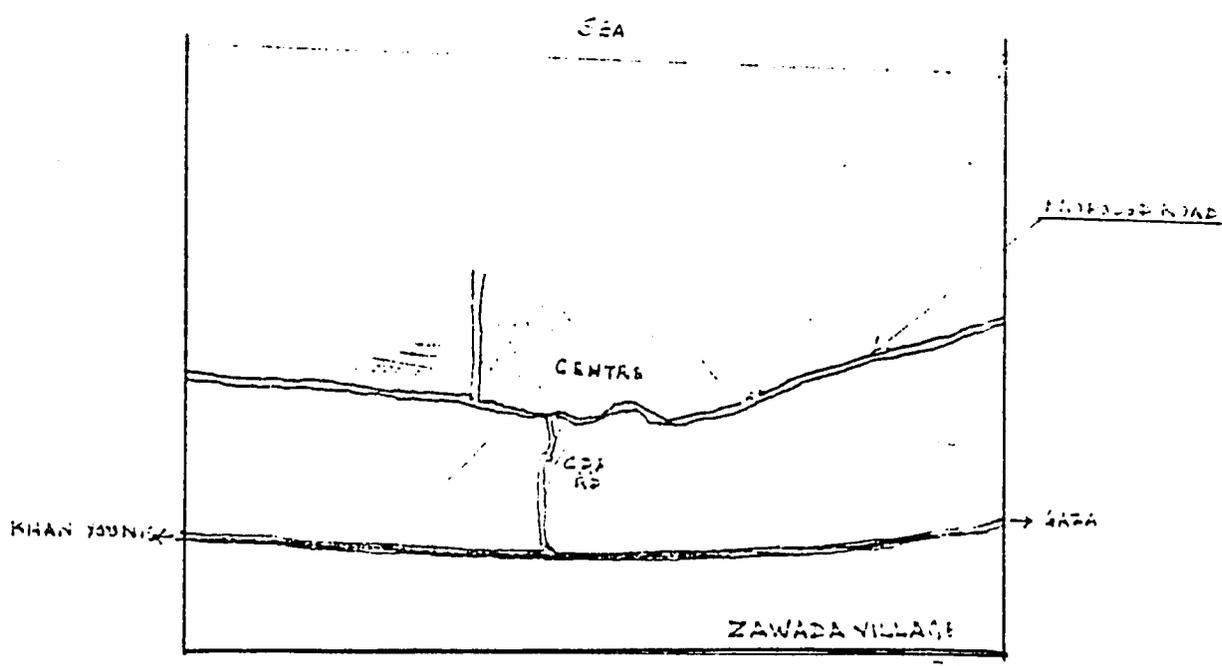
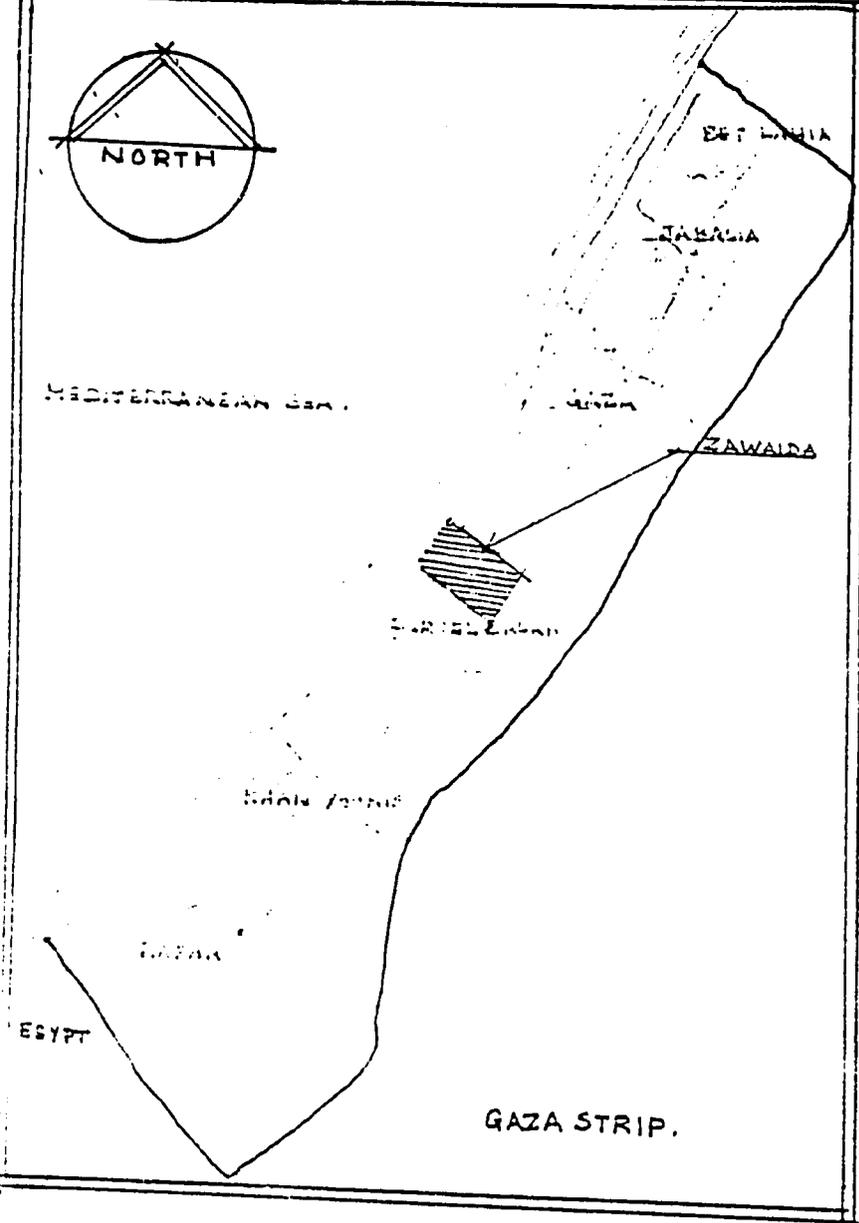
ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT \$ PRICE	TOTAL \$ PRICE
1.	Earth work, leveling, etc.	m <sup>3</sup>	2000	3.18	6360
2.	Supply and spread underlying base course, 6 m width, 25 cm thickness, including water & compaction	m <sup>3</sup>	4000	18.20	72800
3.	Asphalt mix for 4 m width, 5 cm thickness including M.C.O. (5% Bitumin)	ton	1400	68.18	95452
TOTAL COST:					\$ 174612

#### 8. Project Input:

The project will be carried out by a local contractor through a competitive bidding procedure which the CDF technical consultant and the local engineer will supervise. One contractor will implement the whole project in a three month period. The Community Development Foundation will contribute a maximum of 50% of the total cost of the project or \$85,000. The Village Council will contribute a minimum of 50% or \$85,000.

#### 9. Community Development:

After the completion of the project Zawaida Village Council will be able to maintain the road from its on-going operational budget.



COMMUNITY DEVELOPMENT FOUNDATION  
GAZA STRIP AND WEST BANK OFFICES

1. Project Title: Jabalia Village Council Agricultural Road
2. Project Number: 82-116
3. ODP Allocation: \$ 70,000
4. Project Beneficiaries:

There are 4,000 direct beneficiaries of this project who represent a large proportion of the non-refugee population of Jabalia, living on small plots of land to the east of the village. This includes about 300 persons who are living alongside the proposed road, plus 350 laborers who are employed by the local citrus packing factory and use the road on a regular basis.

5. Project Background:

Jabalia village is located at the northern end of the Gaza Strip, about 5 kilometers from Gaza City. It is a small agricultural village of 10,000 people, 50% of whom are employed in citrus fruit farming according to traditional methods. Since 1967 the original Nakhla area of the village has been settled by 56,000 refugees who are now in the area. The main north-south arterial road (see map) between Ashdod - El-Arish bisects the village lands with the bulk of the population located in a refugee camp adjoining the village on the western side of the road. To its east is the agricultural area, which accounts for 1,500 of the 2,500 dunams of agricultural land within the Jabalia area.

All the land on the east side of the highway is under citrus cultivation and consists of small plots varying from 2 to 15 dunams (1 dunam is 1000m<sup>2</sup>), owned by 300 families, all of whom live a few kilometers away in the village. There are also some 40 houses in the area with a population of 300. A co-operatively owned citrus packing factory is located at the far end of the proposed road. The factory provides employment for over 350 people during the summer and spring months. There is a road through this area, at right angles to the main road, but it is in a dilapidated condition, unpaved and sandy. In the winter season the short but heavy rains make the road impassable. Unfortunately this period coincides with the peak of the citrus harvest.

One dunam of land will produce 5 tons of fruit which generally markets for \$150 a ton, giving \$750 return on each dunam. The total production around the proposed road is estimated to be 7,500 tons annually, which means that an average of 20 trucks per day will navigate the road to remove the produce during the three month citrus season. In addition, local residents also use the road, as do a number of other trucks, as a short cut to the citrus packing factory, bringing produce from other areas of the Gaza Strip. Such a large amount of traffic over such a short period means that the road quickly deteriorates and becomes impassable.

Delays such as those caused by lack of an adequate agricultural road are serious enough to significantly disrupt life in the village of Jabalia, whose population is dependent on the efficient marketing of the crop. During the rest of the year, even in the dry season, general planting and cultivating activities would be made much easier if the road were improved. The improvement recommended includes a stretch of road 1,600 meters long and 8 meters wide.

The Jabalia Village Council had previously approached CDF to assist them in the construction of a day care center, and in the construction of a water tower. Both projects were successfully implemented, and the respective evaluations forwarded to US/AID.

#### 4. Project Purpose:

The purpose of this project is to assist the Jabalia Village Council to level, gravel and asphalt the Zimmo agricultural road to facilitate the flow of agricultural traffic along the road. This fits into part of the overall plan by CDF for the Gaza Strip which aims to strengthen the rural and agricultural base of the area, and encourage people to work on the land.

#### 7. Project Output:

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT \$ PRICE	TOTAL \$ PRICE
1.	Earth work, leveling, etc.	m <sup>3</sup>	1200	3.18	4000
2.	Supply and spread underlying base course, 8 m width, 25 cm thickness, including water & compaction	m <sup>3</sup>	32000	19.20	59000
3.	Asphalt mix for 8 m width, 5 cm thickness including M.C.O. (5% Betumin)	ton	1280	68.18	87000
				TOTAL COST:	150000

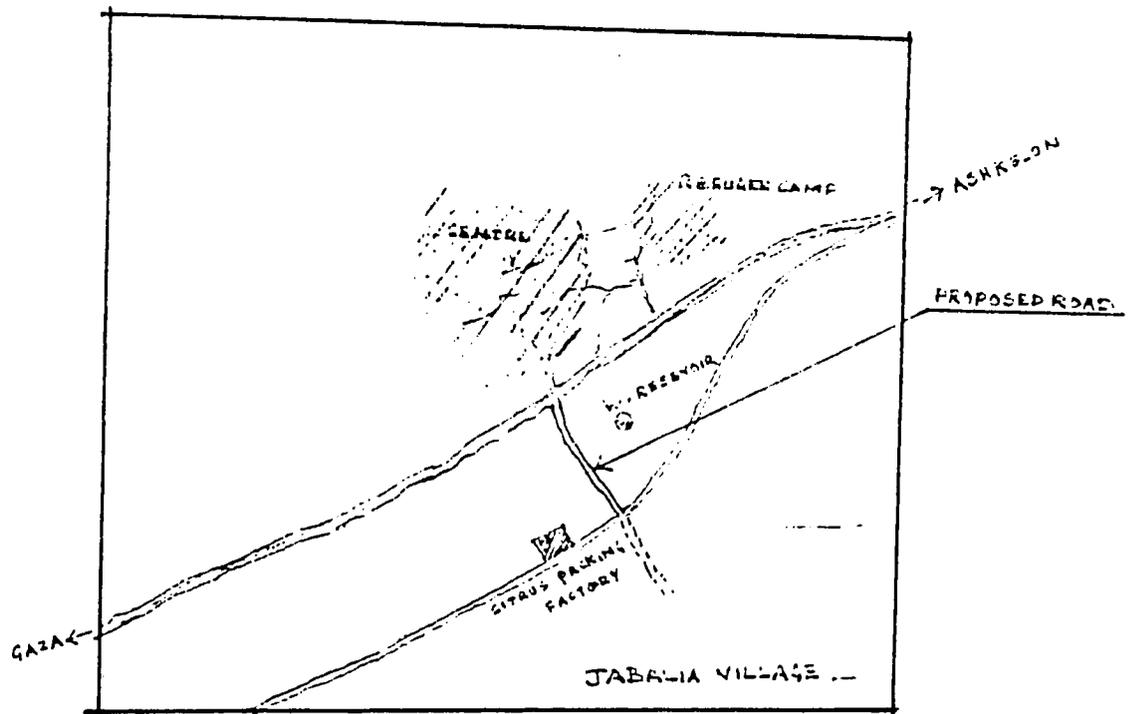
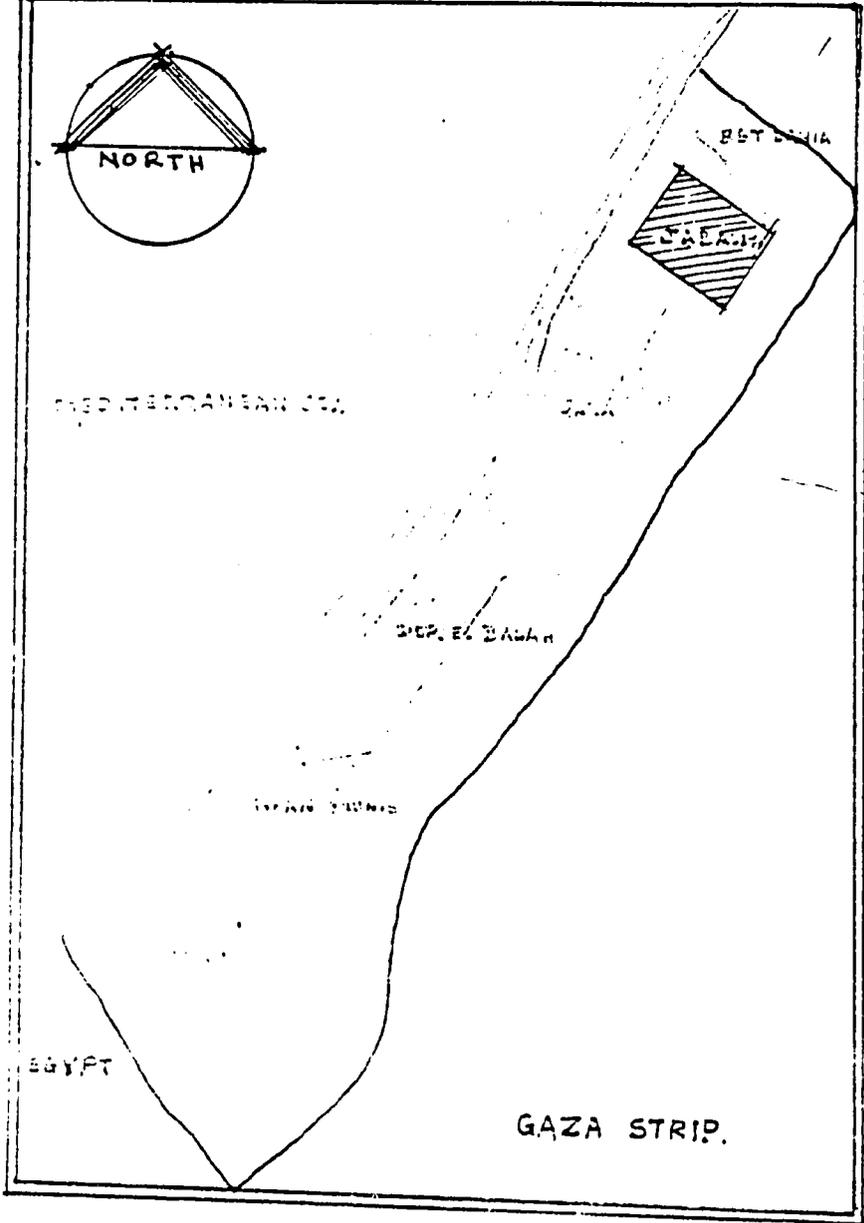
#### 8. Project Input:

The projected cost of undertaking this road project will be shared as follows:

Village Council	\$ 47,000 (32%)
Local Contributions	\$ 23,000 (20%)
CDF	\$ 70,000 (48%)
Total	\$ 145,000 (100%)

#### 9. Community Development:

The Jabalia Village Council will be able to maintain the road from its on-going operational budget.



COMMUNITY DEVELOPMENT FOUNDATION  
GAZA STRIP AND WEST BANK OFFICES

1. Project Title: Rafah Domestic Water Supply - Stage One

2. Project Number: 82-123

3. CDF Allocation: \$210,000

4. Project Beneficiaries:

The total population of Rafah numbering 90,000 people, will benefit from this project. Those who have been living on the second and third stories of houses will now have enough pressure to receive a sufficient amount of water. Those residents of the outlying tribal areas, presently suffering from complete lack of water supply, will be able to link their areas to the new system to facilitate supply.

5. Project Background:

Rafah town is located in the southern end of the Gaza Strip and is considered one of the ancient villages of Palestine. Before 1948 there were few families who had been living for generations in the area of Rafah. These families, the Surub, Hama, Maddy, Shear, Hajar, and Khanal families, worked the land now used by the Rafah Municipality. Its current population is 90,000 people of which 65,000 are refugees. The remaining 25,000 are Rafah citizens. 8,000 residents of Rafah now live in Rafah-Sinai.

The main source of employment for Rafah citizens is agriculture, with 70% of the population working as farmers. Citrus crops comprise 65% of Rafah's agricultural land, with the other 35% used for vegetable production. All farmland is irrigated from private water wells.

Small commerce businesses also provide employment in Rafah, as the town is the final stopover point before entrance in to Egypt. These shops are mostly refugee-owned. Refugees also fill the other two employment possibilities in Rafah, as day laborers in Israel or as regular UNRWA (United Nations Relief and Works Agency) staff.

Rafah town is run by a municipal council which was appointed in 1978 by the Israeli authorities. The major services provided by the Municipality are water, electricity and sanitation. All services are rudimentary however, as the municipality's income to support these services is limited to the nominal amount residents pay for the services, and small loans from the Israeli authorities for service improvement. Expanding drinking water services is the first priority for the municipality and the people of Rafah.

Rafah municipality provides water through two wells (see map). (Water is supplied to some refugee blocks in Rafah Camp and to UNRWA facilities by two UNRWA-owned wells.) Pumping capacity for the municipality's two wells total 6,000

cubic meters per day. In order to reach the level of average consumption of water, 100 liters per capita for the rest of the Gaza Strip, water output must increase to 9,000 cubic meters per day. Drinking water is distributed to Rafah residents through main pipelines from a water tower (25 meters high with 140 cubic meters capacity), which is supplied by a 2,000 cubic meter ground reservoir.

The Rafah municipality has additional difficulties servicing its population since the new border was formed between Israel and Egypt in April, 1982. Approximately 9,000 people living south of the new border are considered Egyptian citizens. One water well used by the municipality with a pumping capacity of 165 cubic meters per hour will be left in Rafah Sinai (Egypt), resulting in a decrease in already scarce drinking water supplies for Rafah-Palestine. This well is currently out of service and is not expected to be functioning until about November, 1982. Therefore, Rafah-Palestine is now providing water to Rafah-Sinai through three 4-inch meter pipes crossing the international border. The Egyptian government is supposed to reimburse the Rafah Municipality for this water. The problem now is that this places an added stress on the already meager supply of water for the remaining portion of Rafah-Palestine.

#### 4. Project Purpose:

- The purpose of this project is to assist and encourage the Rafah municipality in:
  - drilling of a water well capable of supplying 200m<sup>3</sup> per hour;
  - constructing a 200m<sup>3</sup> capacity water tower 25 meters high;
  - installing 1,000 meters of 4-inch water pipeline;
  - supplying 2 pumps, 1000 meters of 4-inch piping, 1 electric motor and 1 standby diesel motor.

This project will enable the municipality to execute their plan to increase and improve its water services in proportion to the needs of a growing population. This will entail the provision of clean drinking water to communities within Rafah's boundaries, and also to those outside the boundaries of the municipality.

This project is complementary to the increase in housing construction which is taking place in response to the housing shortage in Rafah. A typical response to the shortage has been to build second and third stories on existing buildings to open up more living space for the town. Up until this time there has not been sufficient water or a powerful enough water supply system to provide these new housing units with water. This project will provide the capability to supply water to these units and will replace the well which is now within the borders of Rafah-Sinai. The total project is in keeping with CDF's aim of contributing to the development of communities' infrastructure, water and sanitation services.

#### 7. Project Output:

The Rafah municipality has provided CDF with a three year plan for a water project which includes the water well and tower as the first stage of the plan. The technical study for the project will be prepared by Toshia Engineering Consulting Firm. The municipal engineer's estimation of the total cost can be summarized as follows:

1. Drilling well of 200m <sup>2</sup> /hour, 70-80m deep	\$ 100,000
2. Pump with 8" line capacity	30,000
3. Electric motor, including concrete base, switchboard and control board, 125 HP	30,000
4. Diesel motor with gear speed control	25,000
5. Constructing pump house, with fence or wall and fuel tank	15,000
6. 1000 meters water pipe line 6" asbestos pipe line, 8 kilos per cm <sup>3</sup> pressure with fittings, valves and excavation	30,000
7. Concrete water tower, 300 cubic meters, 25 meters high	100,000
8. 6% for technical study and plans from Tushia Engineering Consultants	<u>20,000</u>

TOTAL

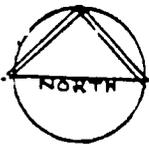
\$ 350,000

8. Project Input:

The Community Development Foundation will contribute to this project 60% or \$210,000. The local municipality will contribute \$140,000 towards the total cost. It is recommended that CDF pays 60% of the total cost because the local municipality has difficulty receiving matching funds for projects from other outside sources, due to restrictions defined by the local authorities.

9. Community Development:

The municipality of Rafan will be able to maintain the project in the future from its on-going operational budget. A technical expert is available to the municipality to supervise the daily operation once the project is completed.



MEDITERRANEAN SEA

BET ANIA

ZABALIA

GAZA

DIR EL-DALAH

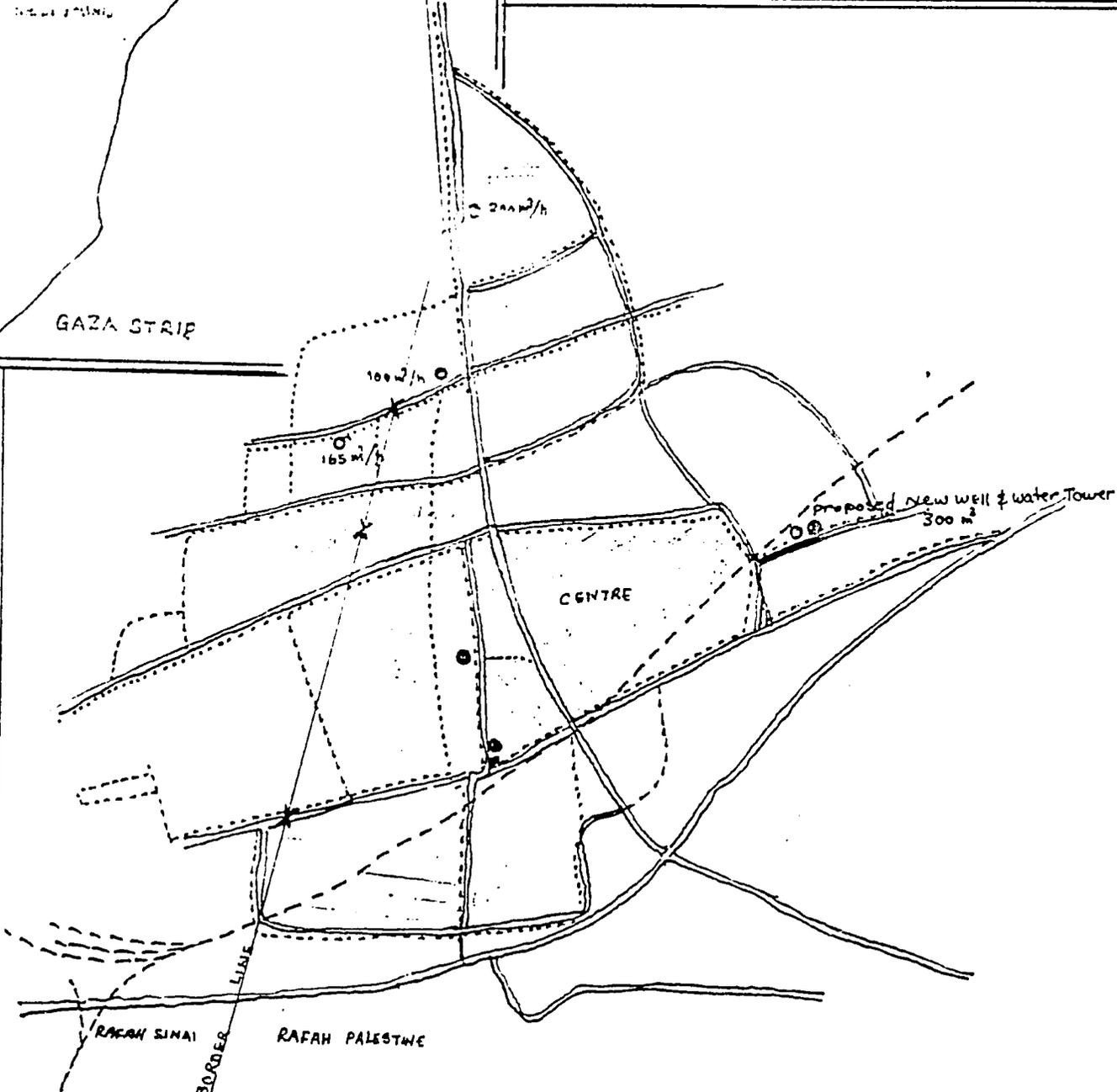
HELEWAN

EGYPT

GAZA STRIP

RAFAH WATER PROJECT

- RESERVOIR
- MUNICIPALITY BUILDING
- WATER WELLS
- WATER TOWER
- PROPOSED NEW WELL
- 1000M Z PDR LINE
- .... WATER NET.
- x 4" metered connections to Egypt-Sinai



PREP BY: S. SAKKA

COMMUNITY DEVELOPMENT FOUNDATION  
GAZA STRIP AND WEST BANK OFFICES

1. Project Title: Burqin Village Council Domestic Water Supply

2. Project Number: 82-124

3. CDF Allocation: \$ 100,000

4. Project Beneficiaries:

The principle beneficiaries of this domestic water project will be the 5,000 residents of the village of Burqin. In the future, Wadi Burqin, a concentration of about 500 refugees in the valley below the village, may also benefit, as well as two villages to the west, Wafr Qud (population 1,500) and Zi-Hashimiyeh (population 1,500).

5. Project Background:

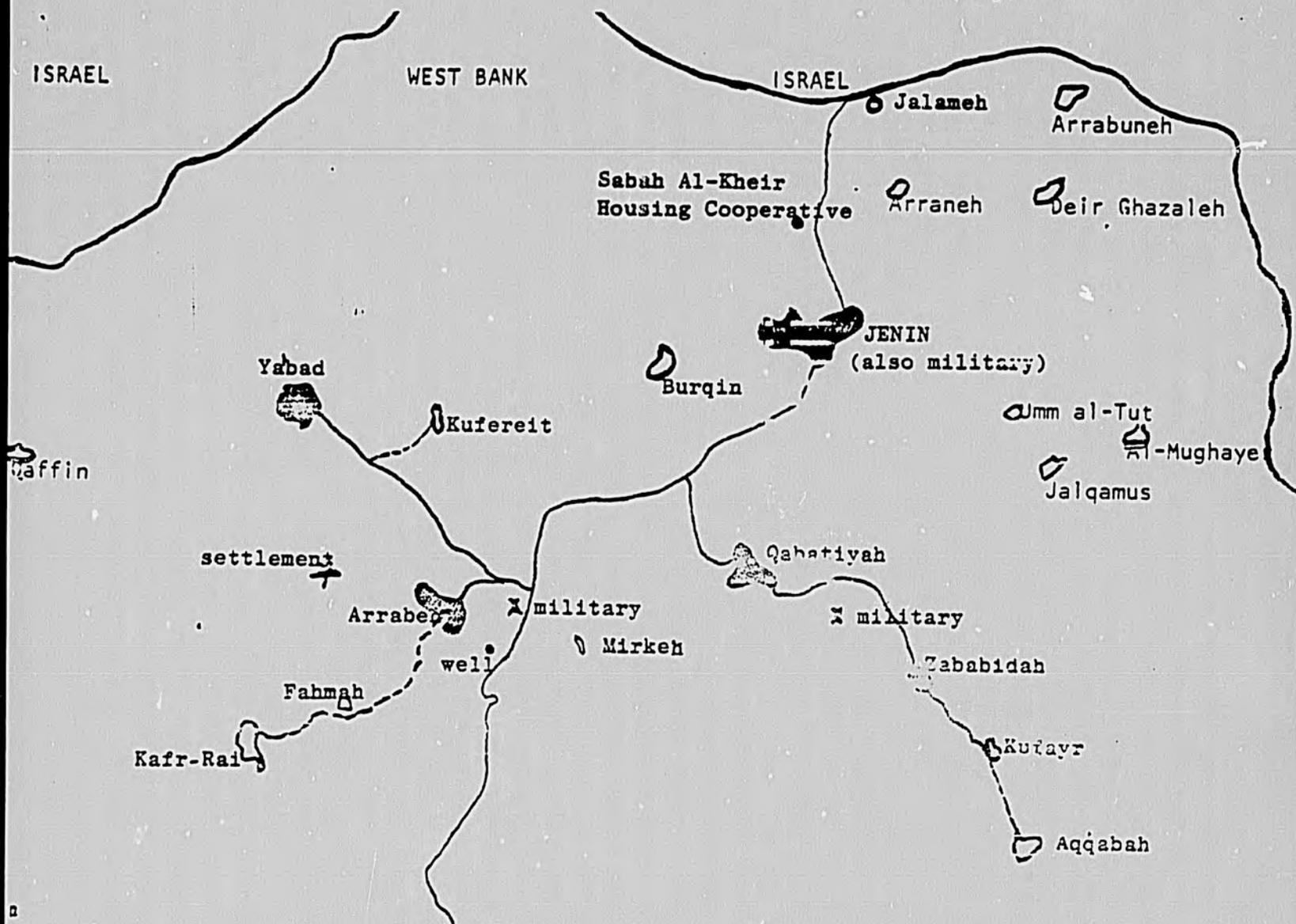
The village of Burqin is on a plateau to the west of Jenin overlooking the famous plain of Mari Ibn Amer. The village covers an area of approximately 1.5 km. Land is owned by the village council and 100 dunams by the Waqf - Islamic society.

The economic base of the village is predominantly agricultural with 10,500 dunams in cereal crops, 7,000 dunams in olives, and 500 dunams forest land. Only 500 of these dunams are under irrigation, with water supplied through a system of earthen canals fed by cement reservoirs of 20 cubic meters capacity each.

Common public health problems in West Bank villages usually result from a lack of sufficient water, or from the need to conserve scarce water supplies for a long time. In particular, the most serious current problem results from the use of water that has been kept for too long (at times up to six months) in home cisterns. Water may be relatively plentiful during the winter months, but the general weather pattern in the West Bank provides no further rain until the next winter. The more regular availability of water will remove the need to store water over such long periods, or at least will allow for a more frequent flow of water into and from these cisterns.

Presently drinking water for the village of Burqin is either brought by tanks from the small spring or collected in individual cisterns during the winter rains - cisterns are located both inside and outside the village. A domestic water project is a top priority to the entire village. It can be realized by linking Burqin to the water system that is being developed in the northern West Bank.

The map below provides a schematic layout of the population centers of the northern districts of the West Bank which have been or will be assisted by the Community Development Foundation in making use of available water resources.



- Several CDF projects which are indicated, notably those in Deir Ghazaleh (WB021), Zeita (WB023), Qaffin (WB024), Attil (WB033), and the tentatively planned projects in Deir el Ghussun and Shufah, will make use of local water sources.

- The CDF projects in Kufeiret (WB065) and Mirkeh (WB066) will at least potentially rely upon the Arrabeh well. The tentatively planned projects in Fahmah, Kafr Ra'i and Burqin will also draw from the Arrabeh well.

- The pump and reservoir at Ya'bad (WB086) will add to overall supply, as well as provide Ya'bad, Jalameh, Qabatiya and Sababida.

- Jalameh, which is to be provided with a new source (WB092), will make it possible to provide later extensions to Arraneh and Arrabuneh.

- The new well in Qabatiya will also help to ease demand, and will enable an extension of services to Umm el-Tut, Jalqamus and Al-Mughayer.

#### 6. Project Purpose:

The purpose of this project is to provide a reliable and clean source of drinking water to the village. This will be accomplished by connecting the village of Burqin with the 6-inch main water line leading from the Arrabeh well to Jenin. Water output from the well can reach a maximum of 300 m<sup>3</sup> per hour. An internal distribution network will be installed to extend to each of the approximately 350 dwellings in the village. A 300 cubic meter elevated reservoir will also be built.

#### 7. Project Output:

##### A. Internal Distribution Network

4" x 5/8" pipe, lined and coated with asphalt	3,200 meters
3" x 5/8" pipe, cement lined and coated with asphalt	900 meters
2" x 3.45 mm galvanized pipe	4,000 meters
1" x 3.25 mm galvanized pipe	1,000 meters
3/4" and 1/2" pipe - amounts to be determined.	

Total cost for the execution of this network, including supplying all of the pipes and fittings, excavations, backfill, welding, concrete works and other works:

\$ 208,000

##### B. Reservoir

Construction of concrete reservoir, 300 cubic meter capacity,

\$ 52,000

TOTAL COST OF PROJECT

\$ 260,000

#### 8. Project Input:

The costs for this domestic water supply project will be met by the Community Development Foundation and monies collected or received from approved sources by the community and the village council. CDF will contribute up to \$ 150,000.

#### 9. Community Development:

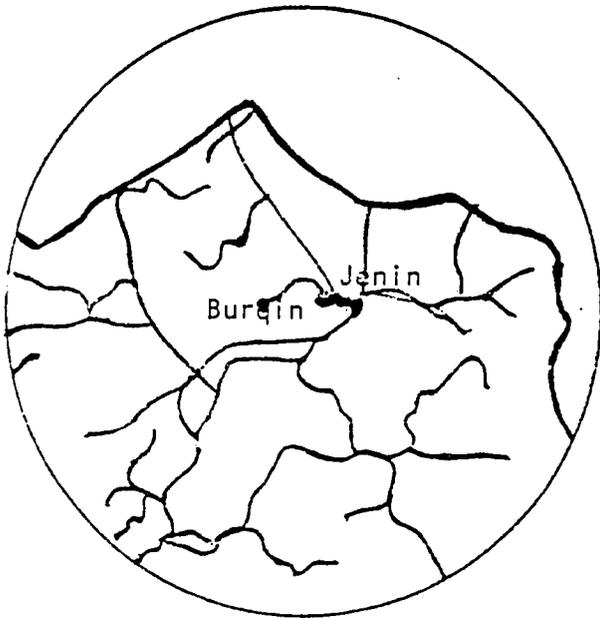
The water for nearly all West Bank water projects comes from underground sources, since there are no major rivers or streams which are used for domestic water supply. The source of water therefore is either drilled wells or springs, both of which are developed as enclosed systems for any water distribution project. The major concerns therefore are any possible contamination of the source and any detrimental lowering of the water level.

The West Bank Water Department constantly monitors water level and quality in order to prevent any foreseeable environmental hazard. Each water and sanitation project must be studied by both the Arab technical staff and their Israeli supervisors. The source is not approved unless an adequate supply can be assured. The installation of the entire distribution system, including house connections, is supervised by civil and mechanical engineers who are employed by the Water Department.

Sewage in villages such as these is handled by means of closed septic pits which are pumped whenever necessary by a specially fitted vehicle which draws out excess solid waste material and transports it to approved uninhabited areas for decomposition and eventually used as fertilizer. Waste-water drainage is rarely a problem, due to the topography of the West Bank, and especially the tendency for villages to be placed on higher and sloping ground. This leaves few possibilities for freestanding water to be consumed directly or to infiltrate somehow into the water distribution system.

Upon completion of the project, it is also the responsibility of the Water Department to maintain the system to assure that there is sufficient pressure to avoid negative pressure in the pipes, which would allow possibilities for contamination through cross-connection. There are in fact few possibilities for contamination of water once it has entered the distribution system. Water pipelines to West Bank villages and along much of the internal distribution network are usually above ground, and are often placed along the roadside, where they can be checked frequently.

BURQIN - JENIN DISTRICT  
POPULATION- 5,000

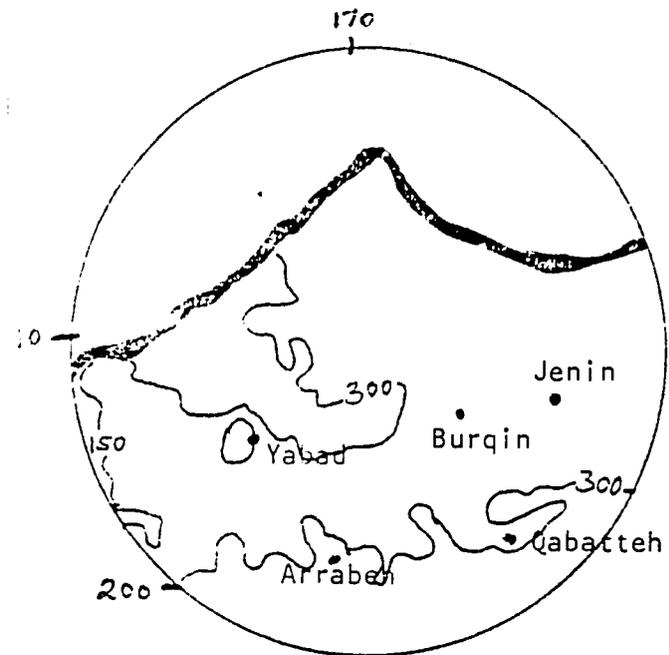


LOCATION

Northern West Bank  
~ 6 km West of Jenin  
Approximate reference on Palestine Grid  
N206.75/174.5E

— Roads  
— West Bank Boundary

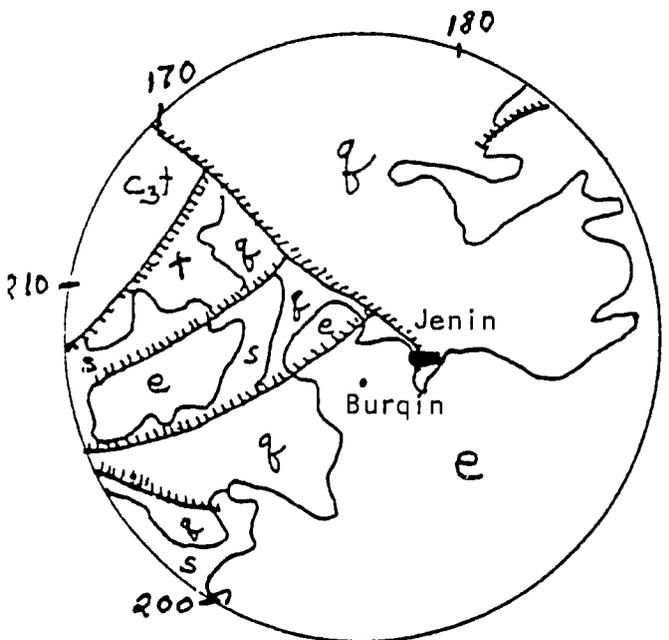
Scale: 1:400,000



TOPOGRAPHY

— contour lines (meters)  
— West Bank Boundary

Scale: 1:300,000



GEOLOGY

— Epoch Boundaries  
- - - - - Fault

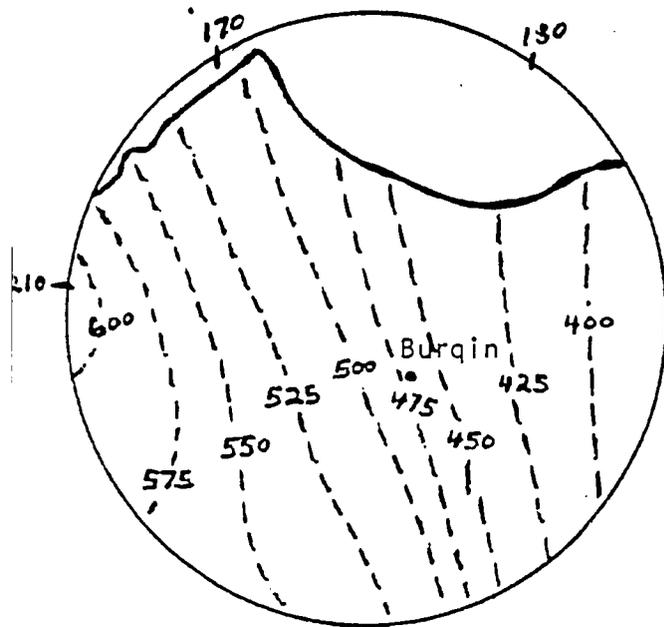
q = quaternary - recent, mainly alluvium  
e = Eocene  
s = Senonian - Paleocene undivided  
t = Turonian  
C<sub>3</sub>t = Upper Cenomanian-Turonian

Scale: 1:250,000

BURQIN - JENIN DISTRICT  
POPULATION - 5,000

TEN YEAR MEAN ANNUAL RAINFALL

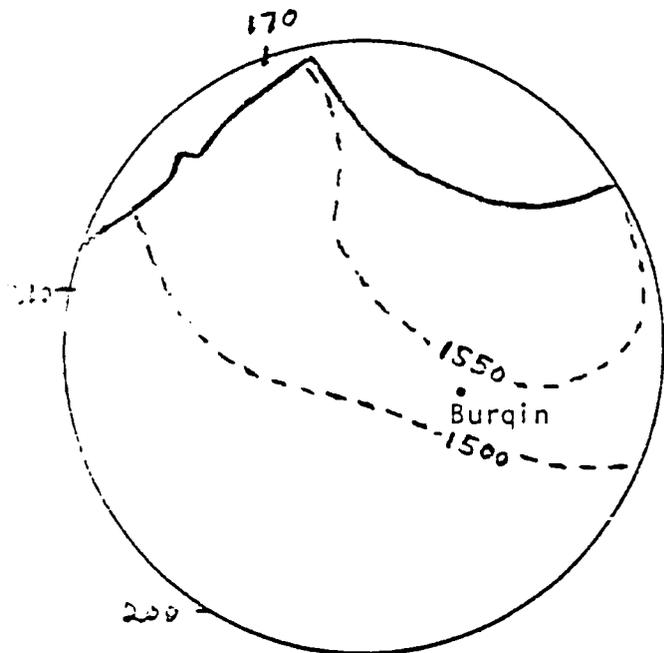
1952 - 1962 ( millimeters)



Scale: 1:250,000

POTENTIAL EVAPORATION (millimeters)

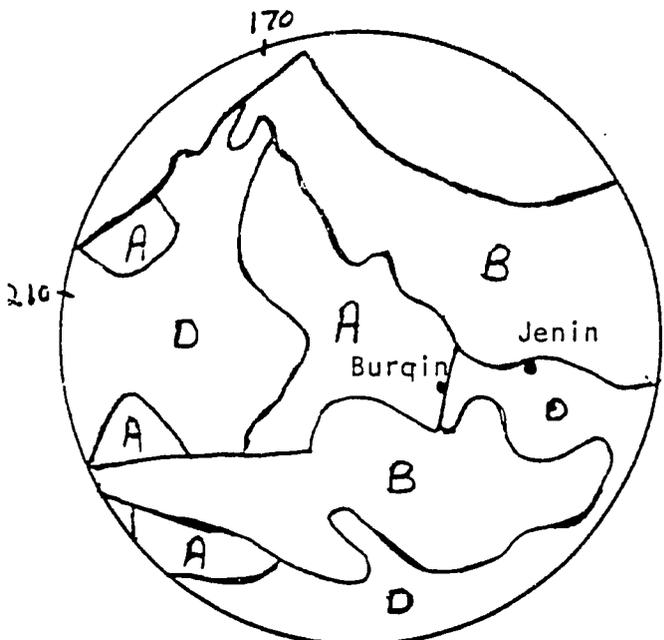
1962-1963



Scale: 1:250,000

SOIL MOISTURE RETENTION ZONES

- Type A: Olive and orchard areas, terraced; 70 mm water per year.
- Type B: Alluvial, dry-farmed or part/whole irrigated; 50 mm per year.
- Type C: Marginal land, dry-farmed or unused but cultivable; 30 mm per year.
- Type D: Pasture rangeland, scrub or bare; 20 mm per year.



Scale: 1:250,000

COMMUNITY DEVELOPMENT FOUNDATION  
GAZA STRIP AND WEST BANK OFFICES

1. Project Title: Olive Seedling Subsidy and Distribution
2. Project Number: 82-107
3. CDF Allocation: \$ 70,000
4. Project Beneficiaries:

About 4,000 farmers will participate in the olive seedling distribution program in the 1982-83 season. These farmers are located in about 250 villages throughout the West Bank and the Gaza Strip.

5. Project Background:

For many centuries, farmers in the West Bank have planted olive seedlings, and have reaped from them a considerable profit through the sale or direct consumption of fresh and preserved olives, olive oil, olive wood, and even an olive oil-based soap produced in Nablus. Fully one third of agricultural income comes from the production of olive trees, which have become a widely recognized symbol of prosperity and permanence on the land.

In spite of the importance of olive cultivation however, there is need for stimulating further planting. Since the maturation of olive trees takes many years without immediate return, and since both marketing and general political conditions have been notably uncertain during the last generation, a number of farmers have found it difficult to place new areas under olive tree cultivation. Although this does not yet represent an actual decline in the area under olive cultivation, agricultural experts agree that there should be stimulation of olive production, since it represents the most reliable source of income and the major export. Also it is considered the main perennial crop suitable for cultivation in the upland areas.

For this reason the Community Development Foundation selected as its first project in the West Bank, the subsidy and distribution of olive, almond and fruit seedlings.

In September 1978, a formal request was made to the Military Government for clearance of an olive seedling distribution program. The first year program, which was carried out in collaboration with the Mennonite Central Committee, involved the distribution of the following number of seedlings:

DISTRICT	OLIVE	ALMOND	PLUM	ALL TYPES
Jenin	0	742	0	742
Nablus	40249	400	240	40889
Tulkarem	11016	200	0	11216
Ramallah	0	2365	340	2705
Bethlehem	0	1733	437	2170
Hebron	110	3940	0	4050
West Bank	51375	9380	1017	61772

As is shown in the table, olive seedlings accounted for the great majority (83%) of the seedlings distributed. Since there have continued to be significant differences in the pattern of distribution and payment of almond/plum and other fruit seedlings, the latter are presented in a separate project description (83-108).

In the first year program the Mennonite Central Committee staff took responsibility for the southern districts, while the CDF staff concentrated its initial efforts on Nablus and Tulkarem Districts. At least 1,150 farmers benefited from the first year seedling program, with each farmer purchasing a maximum of 50 seedlings in order to guarantee that most of the benefits accrue to small landholders. The total cost to CDF for the olive seedling program was \$ 23,689 or about \$ 20.60 per farmer. The farmers in turn contributed the equivalent of about \$ 40,000 or over 60% of the project cost.

In the second year of the program, which covered the 1979-80 season the following seedlings were distributed:

DISTRICT	OLIVE	ALMOND	PLUM	ALL TYPES
Jenin	13228	130	0	13358
Nablus	30770	270	40	31080
Tulkarem	17225	0	0	17225
Ramallah	8050	74	563	8687
Bethlehem	5810	578	581	6969
Hebron	20458	4146	1483	26087
West Bank Total	95541	5198	2667	103406
Gaza Strip Total	17100	0	0	17100

Gaza Strip Total	17100	0	0	17100
All Areas Total	112641	5198	2667	120506

In the second year, olive seedlings were sold in all six districts of the West Bank and for the first time in the Gaza Strip as well. The number of participating farmers increased from 1294 in 1978-79 to 2,405 in 1979-80; and the number of participating villages by an even larger proportion, from 31 in 1978-79 to 144 in 1979-80. The total number of seedlings distributed rose 100% from 61,222 to 120,506. In the second year, CDF contributed a total of \$ 53,672, the farmers contributed about \$ 120,000 and at least another \$ 50,000 was saved through prior reservation, bulk purchasing and grouped transportation arrangements.

In the third year of the seedling distribution program, plans were made for a further increase in the number of seedlings within this total was due to rise even higher, to almost 95%, reflecting satisfaction with the quality and price of the olive seedlings. Another major change anticipated that the three southern and central districts would for the first time surpass the number destined for the north, reflecting the even greater need for stimulation of olive cultivation in the south.

Unfortunately, the actual number distributed did not reach the number that had been forecast, due to a serious delay in the granting of clearance by the Military Government. The number distributed in the 1980-81 season was as follows:

DISTRICT	OLIVE	ALMOND	PLUM	APRICOT	ALL TYPES
Jenin	16366	42	19	62	16489
Nablus	45102	5	296	204	45607
Tulkarem	17355	100	20	0	17475
Ramallah	23014	273	2884	447	26618
Bethlehem	10930	282	395	472	12079
Hebron	2290	998	2030	100	5418
West Bank Total	115057	1700	5644	1285	123686

This total was less than 70% of the number planned, but still a small increase over the number distributed in the previous year. This was due to the extra time and efforts of CDF staff members, who sought to minimize the consequent difficulties in distributing all paid for seedlings before the effective close of the distribution season (i.e. before the winter rains have ceased entirely). Nevertheless, there was no time remaining for the distribution of 57,282 seedling, for which partial payment had been received from 1,551 farmers in 48 villages in the West Bank nor for distribution of any seedlings to farmers in the Gaza Strip.

For the 1981-82 season, CDF committed itself to delivering to the 1,551 farmers which had not benefited from their participation the previous year. This was a very important step, in view of the need to maintain the confidence of farmers in the ability of the Community Development Foundation to meet its commitments and to assure the continuity of the seedling program. The importance of early clearance was communicated to the Military Government early and frequently throughout 1981, resulting in the granting of a partial clearance for the distribution of the seedlings which had been committed but not delivered during the previous season. Contrary to expectations, however, the Military Government clearance of the seedlings committed for the current season was delayed until such a late point in the year that it was not possible for CDF to reserve as many seedlings as had been planned. As a result, the target of 180,000 seedlings was again not reached, although the 1981-82 total was nevertheless the highest ever:

DISTRICT	OLIVE	ALMOND	APRICOT	ALL TYPES
Jenin	12087	50	179	12316
Nablus	24975	40	432	25447
Tulkarem	13350	0	665	14015
Ranallah	27322	51	156	27529
Bethlehem	7711	356	30	8097
Hebron	51819	2566	262	54647
West Bank Total	137264	3063	1724	142051

The total number of seedlings distributed during the first four seasons of the Community Development Foundation program therefore became 448,065 distributed as follows:

DISTRICT	OLIVE	ALMOND	PLUM	APRICOT	ALL TYPES	
Jenin	41681	964	19	241	42905	10%
Nablus	141996	765	576	636	143073	32%

DISTRICT	OLIVE	ALMOND	PLUM	APRICOT	ALL TYPES	
Tulkarem	58946	300	20	665	59931	13%
Ramallah	58386	2763	3787	603	65539	15%
Bethlehem	24451	2949	1413	502	29315	6%
Hebron	74677	11650	3513	362	90202	20%
West Bank Total	399237	19391	9328	3009	430965	96%
Gaza Strip Total	17100	0	0	0	17100	4%
All Areas Total	416337	19391	9328	3009	448065	
	93%	4%	2%	1%	100%	

The importance of olive cultivation is underscored by the fact the the proportion of olive seedlings distributed rose reaching an overall average of 93% by the end of the four years of the distribution program. The number of available seedlings has greatly increased in recent years, due in large measure to the steady buildup of both supply and demand for which the voluntary agencies have been responsible. The following table demonstrates the increase in the number of seedlings produced by West Bank nurseries, both for local sale and for export:

NURSERY	LOCATION	Estimated			
		1978-80	1980-81	1981-82	1982-83
Qassem Abdul Hadi Nursery	Aqrabanieh	250000	250000	300000	300000
Khaled Al-Awad	Rabatia	0	20000	60000	100000
Al-Shuhadah Nursery	Rabatia	0	20000	60000	100000
Tarqumia Cooperative	Tarqumia	0	0	0	90000
Al-Khanfa Nursery	Nablus	0	0	0	100000
Aarfan Abu Ghazaleh	Aqrabanieh	0	0	0	100000
Nur Shams Nursery	Tulkarem	0	0	0	10000
		250000	290000	420000	800000

The number of seedlings available for purchase has increased more than threefold, and the number of potential suppliers has grown from one to seven. In this markedly more competitive situation it can be expected that the price will drop substantially. For the 1982-83 season, the Community Development Foundation,

together with the Mennonite Central Committee will institute a new procedure requesting a formal tender from each of the nurseries, signing an agreement with the ones which offer the lowest terms and the necessary guarantees of quality. The two voluntary agencies will announce a common selling price, based upon the actual purchase price and the jointly determined subsidy.

The anticipated pricing policy compares favorably with that of the previous years, as shown in the following table, which indicates the average purchase and selling price of olive seedlings, not including transportation costs. Prices are quoted in Jordanian Piasters, the currency in which purchase agreements are made:

	1978-79	1979-80	1980-81	1981-82	1982-83
Average Purchase Price	27	31	37	52.5	46(estimated)
(minus) Average Subsidy	9	11	12	13.5	6(estimated)
Price charged to Farmer	18	20	25	39	40(fixed)

The price per seedling has risen from 27 to 52.5 piasters in the first four years of the program, which is equivalent to 20% rise per year in per unit cost. The CDF strategy for the first three years was to absorb a proportional share of the price rise maintaining a subsidy of approximately one third the purchase price. However, it became increasingly difficult to increase the number of subsidized seedlings, while at the same time increasing the amount of subsidy per seedling. In 1981-82, the year in which it was necessary to deliver the seedlings that had been paid for in the previous year, it was only possible to maintain the exact amount of subsidy provided during the previous year, even though the purchase price had risen dramatically.

The average purchase price CDF paid in each year was substantially lower than the regular market price. This was due to several considerations of interest to the supplier such as making a substantial advance deposit, ordering in bulk and through CDF/MCC efforts creating a greater demand for seedlings. Nevertheless, the supplier discount was minimal, apparently resulting from the preference of the main supplier, Qassem Abdul Hadi Nursery, to realize a more substantial profit before several recently established nurseries came into active competition. CDF staff decided to maintain the same subsidy as the previous year; since there was sufficiently strong demand for the limited number of seedlings available, individual farmers absorbed the price increase.

Starting in 1982-83, the presence of additional suppliers should assure more stable prices over time, and even bring about a sharp drop in prices. A much smaller subsidy would be needed then to maintain the same selling price as in 1981-82. If,

as anticipated, the purchase price decreases from 52.5 to 46 piasters, the amount of subsidy needed to maintain the selling price of 40 piasters drops from 13.5 to 6 piasters. Further, the location of additional suppliers in various parts of the West Bank will appreciably lower per unit transportation costs, since farmers can usually be supplied from the nearest nursery. The anticipated reduction in transportation costs from 5 to 4 piasters per seedling lowers the total CDF payment per seedling from 17.5 piasters (13.5 piasters subsidy plus 4 piasters transportation) to 10 piasters (6 plus 4 respectively).

This estimated drop of over 40% in per unit cost makes it possible to plan for a considerable increase in the number of seedlings to be distributed, without a larger budget commitment. Other factors which make a major increase possible to achieve:

- a) the increase in the number of nurseries (from three to seven) and the expected supply (from 420,00 to 800,000) as noted above,
- b) a high level of demand predicted, after four years of experience, and as assured by maintaining the price from the previous year,
- c) a planned change in the limitations on the number of seedlings bought from CDF by an individual farmer from 50 to 100,
- d) an increase in CDF's staff capabilities with a total of four full-time local staff members (Snehadeh Dajani, Khalil Al-Aloul, and Issa Allan in the West Bank, and Atia Abu Moor in the Gaza Strip).

Given these factors the Community Development Foundation recommends the following distribution for the 1982-83 season:

	WEST BANK	GAZA STRIP	ALL AREAS
Olive	190000	10000	200000
Almond	5000	5000	10000
Apricot	4000	0	4000
Plum	1000	0	1000 (maximum)
Avocado	0	5000	5000
Guava	0	5000	5000
Mango	0	5000	5000
Pine and Fir	20000	0	20000
<b>Totals:</b>	<b>220000</b>	<b>30000</b>	<b>250000</b>

This project description applies only to the distribution of olive seedlings in the West Bank, which accounts for 78% of the total planned distribution. The distribution of almond, apricot and other fruit seedlings in the West Bank is covered in project description No. 83-108. Forest seedling distribution is explained further in an earlier project description, No. 81-083, for which clearance from the authorities has been requested since January 1981. The distribution plan for the whole of the Gaza Strip is explained in further detail in an updated project description No. 81-049.

For such an intensive program, it is important to carry out the following steps at a sufficiently early stage to carry out each task in a thorough manner:

- a. Consultation: CDF Project Co-ordinators meet with community members, village councils, co-operatives and agricultural department officials beginning in April, form an estimate of the total number of seedlings needed.
- b. Demonstration: By late summer, demonstrate the seedling project in areas where there may be an increased demand, inform farmers of the likely prices, varieties available, and the maximum amount which they can order.
- c. Notification: By September, reserve an approximate number of seedlings at nurseries which offer quality seedlings.
- d. Reservation: Upon the agreement of the Staff Officer make the required dollar deposit at the nurseries in order to reserve the desired number of seedlings.
- e. Collection of Money: Upon the agreement of the Staff Officer collect the farmers' share of the cost per seedlings, and pay the nursery owner. This must be begun by October, in order to prepare the final list in time for distribution.
- f. Distribution: Upon formal clearance by the Staff Officer, begin the distribution of seedlings. The demand for seedlings may come as early as November, if the rains are early, or late in December, if the first rains are relatively late. The optimal time is usually December 15, although seedlings can be distributed in the south as late as the end of February in most years. If it is to meet all of its commitments the latest that CDF can start is the middle of December. Distribution is coordinated with the district agricultural departments.

6. Project Purpose:

The purpose of the 1982-83 olive seedling distribution program is to encourage approximately 4000 farmers in 300 villages throughout the West Bank to improve their long-term income potential through the planting of new seedlings. The estimated 190,000 seedlings which will be distributed will bring approximately 13,000 dunums (3,250 acres) into more effective cultivation.

The second purpose of this continuing program is to familiarize farmers with CDF programs. Good relations which have been established over the past several years between the private voluntary organizations and over 10,000 farmers have resulted in communication of community development and self-help objectives at the grassroots level. This in turn has led to the proposal of many new project ideas by farmers, agricultural cooperatives and extension agents.

A third objective of the program is to bring about a long-term change in market conditions enabling the Community Development Foundation to reduce the proportion and the total amount of its subsidy.

#### 7. Project Output:

The estimated total cost of the olive seedling distribution program is as indicated in the following table:

	Paid by CDF \$	Paid by Farmers \$	Total Cost
Cost of Seedlings	50000	300000	350000
Cost of Transportation	20000	0	20000
Cost of Entire Project	70000	300000	370000

The cost of seedlings includes the cost of a plastic sack for each seedling, and a small proportion of extra seedlings in order to guarantee that every seedling presented to the farmers is in good condition. The cost of transportation includes all payments to truck drivers and occasional laborers needed to bring seedlings to the village.

#### 8. Project Input:

The Community Development Foundation will provide about one-fifth of the total cost of the project, and will provide the technical services of a Project Coordinator and consultants to organize and supervise all aspects of the distribution program.

The farmers themselves are the counterpart group, although there is an increasing role to be played by a number of agricultural cooperatives and other local organizations. The farmers pay 80% of the total cost, as well as contribute their land and labor for many years to come. The Agricultural Department also participates by providing technical services in planning and supervising the project.

9. Additional Note:

As a condition mutually agreed upon by Save the Children/Community Development Foundation and the United States Agency for International Development, the following paragraph was inserted into the current grant agreement dated July 29, 1981:

During the period of this grant, SCF/CDF shall work towards establishing the three agricultural subsidy sub-projects as viable activities at full cost. The progress made towards reducing the amount of the current subsidy will be a criteria when considering funding for continuation of these subsidized programs.

The following measures which have been adopted by the CDF staff will specifically satisfy the above stated requirement:

1. In light of originally stated objectives and within the "context of the West Bank environment and economy" Dr. Hisham Awartani, Director of the Rural Research Centre of Al-Najah University, directed a thorough investigation of the CDF program which touched upon many long term programming issues and which made a number of specific recommendations, as set forth in the attached document.
2. The proportion of direct subsidy will be cut in half for the 1982-83 season. It is expected that it can be cut in half again during the 1983-84 season, if further progress is made in increasing both the supply and demand for seedlings. By 1984-85, the direct subsidy can be effectively eliminated leaving only transportation, technical assistance and organizational initiative as CDF contributions.
3. An effort will be made to distribute an increasing proportion of the seedlings through co-operatives and other intermediate institutions. Such institutions can eventually assume transportation costs on a collective basis, especially if helped to provide technical assistance and auxiliary services to their members.
4. The change in limitation of the number of seedlings an individual farmer can buy through CDF will make seedlings distribution an economically viable activity. Specifically, it is recommended that in 1982-83, a farmer be permitted to buy 50 seedlings at the fully subsidized price, and an additional 50 seedlings at purchase price; in 1983-84, 50 seedlings at a fully subsidized price, and up to another 100 at the CDF purchase price. If it becomes possible to remove the direct subsidy altogether in 1984-85, there would no longer be two selling prices, enabling a considerable increase in the maximum number of seedlings an individual farmer can purchase through the CDF distribution program.
5. The increase in the number of seedling nurseries will likely make price rises more restrained, helping to assure a continued, steady demand for all types of seedlings. CDF in close coordination with the Mennonite Central Committee will be able to play a continuing role in encouraging competitive market pricing strategies.
6. The increase in the number of seedling nurseries also stimulates the production of high quality seedlings, as well as a sufficient supply and reasonable prices. Technical assistance, and thorough evaluation will be

necessary elements in maintaining consistent quality control.

7. A steady supply of available seedlings over time will help farmers to adopt more efficient land-use planning, including land conservation reclamation measures. As an increasing proportion of the good land is either planted with tree crops or reserved by the government for other purposes, a larger proportion of the seedlings will be planted on land which must first be reclaimed and terraced. CDF assistance should therefore be directed towards helping co-operatives and individuals obtain the equipment and technical assistance to carry out these expensive operations.

8. As Dr. Awartani points out, several of the current or anticipated CDF projects provide some measure of encouragement toward further planting of tree crops: rural road construction; cistern repair; provision of equipment for land reclamation; and experimental trials of new techniques for spraying, ploughing and harvesting the fruit.

9. As the CDF program for the stimulation of further planting of olive and other tree crops comes to rely less upon direct subsidies, and more upon the farmers own efforts, the CDF program can begin to concentrate on experimental varieties (such as various tropical fruit varieties in the West Bank) and on forest seedlings, for which there are quite different market conditions.

10. Detailed consideration will be given toward the institution of an annual training seminar for agricultural extension employees, which will provide an opportunity not only for the consideration of many new techniques, but also for greater co-ordination of efforts.

11. An annual evaluation of the entire seedling program will be carried out and shared with the Agency for International Development, as a regular means of assessing progress toward all three components of the stated program objectives:

a. quantitative targets, considered within the environmental and economic context.

b. community relations, and transition toward broader community development programming.

c. steady reduction of direct subsidies with greater reliance placed on organization, technical assistance and training.

11. Attachment:

A study of Hisam Awartani, Director of the Rural research Center of Al-Najah University, entitled "An Evaluation of the CDF Seedling Distribution Projects". This study was commissioned by the Community Development Foundation, but carried out independently by Dr. Awartani, after extended consultation with CDF staff members. Many of the findings and recommendations contained in this study have been used in preparing this project description.

COMMUNITY DEVELOPMENT FOUNDATION  
GAZA STRIP AND WEST BANK OFFICES

1. Project Title: Almond and Fruit Seedling Subsidy and Distribution
2. Project Number: 82-108
3. CDF Allocation: \$ 5,000
4. Project Beneficiaries:

Approximately 500 farmers throughout the West Bank will participate in this project. Past experience shows that about half of the farmers purchasing almond or fruit seedlings also participate in the olive seedling distribution program.

5. Project Background:

Much of the project background is provided in the preceding project description (83-107), including the attached study by Dr. Hisham Awartani. This project description is limited, therefore, to a consideration of those aspects which apply particularly to the cultivation of almond, apricot and plum seedlings.

The following tables outline the pattern of distribution to date. The first table refers only to the West Bank and shows the pattern of distribution over time:

SEASON	ALMOND	PLUM	APRICOT	ALL TYPES
1978-79	9430	1017	0	10447
1979-80	5198	2667	0	7865
1980-81	1700	5644	1295	8629
1981-82	3063	0	1724	4787
1982-83 (est.)	5000	1000	4000	10000

The second table shows the pattern of distribution among West Bank districts during the first four years of the distribution over time:

DISTRICT	ALMOND	PLUM	APRICOT	ALL TYPES
Jenin	964	19	241	1224
Nablus	765	576	636	1977
Tulkarem	300	20	665	985

DISTRICT	ALMOND	PLUM	APRICOT	ALL TYPES
Ramallah	2763	3787	603	7153
Bethlehem	2949	1413	502	4864
Hebron	11650	3513	362	15525
West Bank Total	19391	9328	3009	31728

As this table demonstrates, almond seedlings have been distributed primarily in the southern three districts of Hebron, Ramallah and Tulkarem; seedlings have been generally used in the eastern part of these districts. As is the case for olive and fruit seedlings, almond seedlings are distributed to individual farmers in cooperation with the West Bank Agricultural Department extension agents. These seedlings take approximately four years to mature, and will produce for a period of twenty years. Almonds are particularly suited for marginal areas where rainfall is about 300 mm/year, insufficient for olive or most fruit trees, but adequate to sustain almond trees. As Dr. Awartani indicates in his study, there have been no problems with the quality of almond seedlings, although CDF help is recommended to assure continuing quality control, availability of new seedlings, and adoption of more effective techniques.

Plum seedlings were distributed in small but increasing numbers during the first three seasons of the distribution program, but no seedlings were distributed in 1981-82 due to problems of supply. Plum seedlings also were distributed primarily in the three southern districts of Ramallah, Bethlehem and Hebron. In more central upland areas where rainfall averages at least 4000 mm/year expansion of areas under plum tree cultivation faces severe limitations due to market surpluses in recent years. nevertheless, on the advice of Dr. Awartani, an effort will be made this year to assure the availability of at least a small quantity for household consumption, especially in the northern districts. CDF staff will distribute various late-yielding varieties, in recognition of the fact that it was the early-yielding varieties which faced a serious market surplus. CDF staff will similarly seek to encourage techniques for drying or preserving plums and other fruit crops.

Begun as a project in 1980-81 the demand as well as the distribution of apricots has increased each year. in 1980-81 a supply of apricot seedlings of a less desirable variety was received from an Israeli nursery. Greater attention to quality control will assure that all seedlings purchased in the future will be of the Mistikawi variety. Experience to date is that apricots are purchased in small quantities throughout the West Bank and are usually grown for home consumption or small-scale direct sale to local markets.

Other fruit seedlings under consideration for future distribution are grape and fig, each of which are suitable for certain areas of the West Bank. However, emphasis in 1982/83 will be placed on the expansion and more cost effective distribution of presently distributed varieties and the introduction of new tropical fruit varieties, especially avocado, guava and mango in the Gaza Strip.

It is expected that nearly all of the almond, plum and apricot seedlings can be purchased from Nur Shams nursery in Tulkarem district. The approximate purchase cost per seedling will be 43 piasters per almond seedling, and 50 piasters per plum and apricot seedling. The subsidy per seedling will be sufficient to lower the cost to 35 piasters for each type of seedling. The resulting subsidy of 13 piasters per seedling, plus 2 piasters per seedling for transportation (about half the cost of transporting olive seedlings, since fruit seedlings are lighter in weight), brings a total subsidy of about 15 piasters per seedling, or \$ 0.50 per seedling. The cost to CDF of subsidizing and delivering 10,000 seedlings to their respective West Bank locations will therefore be about \$ 5,000.

Each farmer will be eligible to receive a maximum of 300 almond and fruit seedlings which is enough to plant about 5 dunums. The reason for permitting to purchase a larger number of these seedlings compared to olive seedlings is because of the geographical dispersement of farmers requesting seedlings other than olives. Also, another consideration is the fact that almond and fruit seedlings are more closely spaced than olive seedlings (i.e. the allowable 300 fruit seedlings will cover about 6 dunums, whereas the newly set maximum of 100 olive seedlings will cover about 6 dunums.) Distribution of almond and other fruit seedlings generally takes place in the period January through March, about two months later than the primary olive seedling distribution season.

#### 6. Project Purpose:

The purpose of the 1982-83 almond and fruit seedling distribution program is to encourage approximately 300 farmers to purchase and successfully plant seedlings on their land. The 10,000 seedlings which will be distributed in the West Bank are expected to cover approximately 660 dunums, or 165 acres. The mature trees will enable farm families to benefit from direct consumption, supplemental income, increased property value and erosion control.

As with the olive seedling distribution program, a broader objective of the project is to increase the effectiveness of outreach services to rural communities and to bring about a long-term change in market conditions which will allow CDF to gradually reduce the proportion and total amount of its direct subsidy.

#### 7. Project Output:

The estimated total cost of the almond and fruit seedling distribution program in the West Bank is indicated in the following table:

	Paid by CDF \$	Paid by Farmers \$	Total Cost
Cost of Seedlings	4500	10000	14500
Cost of Transportation	500	0	500
Cost of Entire Project	5000	10000	15000

The cost of seedlings includes a small proportion of extra seedlings in order to guarantee that every seedling presented to the farmer is in good condition. The cost of transportation includes payments to truck drivers and occasional laborers as needed to bring every one of the purchased seedlings to the farmers villages.

8. Project Input:

The Community Development Foundation will provide about one-third of the total cost of the project, and will provide the technical services of project coordinators and consultants to organize and supervise all aspects of the distribution program and to promote all possible savings for the benefit of the participating farmers.

The farmers themselves are the counterpart group, although there is an increasing role to be played by a number of agricultural co-operatives and other local organizations. The farmers pay two-thirds of the total cost of this project and contribute their land and labor for many years to come. The Agricultural Department also provides technical services in planning and supervising the project.

9. Additional Note:

A more complete treatment of the overall objectives and general trend of the seedling distribution program as a whole is given in project description No. 83-107 and in the attachment to this document, a study by Hisham Awartani entitled "An Evaluation of the CDF Seedling Distribution Project".

COMMUNITY DEVELOPMENT FOUNDATION  
GAZA STRIP AND WEST BANK OFFICES

1. Project Title: West Rafah Municipality Sewage Disposal
2. Project Number: 82-125
3. CDF Allocation: \$ 500,000
4. Project Beneficiaries:

The principal beneficiaries of this project are the 20,000 inhabitants of West Rafah and the 10,000 inhabitants of Tel Es-Sultan whose neighborhoods the sewage system will serve.

5. Project Background:

Rafah, the second largest and southern most city in the Gaza Strip, has throughout history received mixed benefits from its location straddling the natural and political divide between Asia and Africa. It has profited, for example, from being a major center of commerce and trade connecting the ancient caravan routes of the Arabian and Sinai deserts to the Fertile Crescent and to the sea route of the Mediterranean. More recently Rafah has been handicapped by the rapid rise in population, almost a five times greater increase, due to the influx of refugees from Palestine in 1948. Today Rafah continues to struggle to meet even the most basic needs of its residents. Rafah's unique position is highlighted again by the recently established international frontier with Egypt which bisects the present-day Rafah.

Since April 1982, Rafah's population (82,000 in Rafah-Palestine and 8,000 in Rafah-Sinai) has been divided by a high fence and an 8 - 25 meter wide security belt which runs along the border and through the center of the town. The disruption which accompanied dividing a city of 90,000 has been considerable and will likely be felt economically and socially for some time. Water and electricity supplies have been altered, families cut off from each other and individuals separated from their businesses, places of work and their agricultural fields. In the course of the separation an estimated 1000 families have been relocated from the border zone, some of whom have already resettled in the Tel Es-Sultan area of West Rafah.

In West Rafah there is an immediate and serious sanitation problem which has created major health hazards for that area and the city-at-large. In this area the homes of refugees, as well as those of local citizens, are located on narrow roads which have become open channels for raw sewage from overflowing septic tanks and domestic waste water. For the last fifteen years, waste matter from these channels has flowed into a depression where a pool of raw sewage 100 meters from a school and in the middle of a West Rafah residential area has formed; it is referred to locally as the "Rafah Pool". The threat to the health of children is particularly acute because of their tendency to play near these areas.

During the winter rains (annual precipitation in Rafah is 200 mm/year) the

sewage flow mixes with the rain water run-off to increase the total volume of the pool. In this season it regularly overflows the walls built to contain it and floods adjoining orchards. At periods of peak flow, the pool's narrow feeder channels turn winding neighborhood streets into rushing, impassable channels of sewage up to three feet deep. Residents nearest the channels then resort to building temporary retaining walls at their thresholds or to spreading sand in each room to ensure living and cooking space remain above the level of the encroaching waste water. Even when the pool is at a low ebb however, the walls of houses immediately adjacent to the pool, or for that matter adjacent to the sewage channels feeding the pool, weaken and collapse as they become undermined by sewage seeping under their foundations. For the 20,000 residents, the health risks from the passage of untreated sewage through their neighborhood are considerable. In the summer, health related problems of seasonal nature emerge when malarial mosquitoes breed in the pool's standing sewage and swarm around the unprotected households. Although a formal health survey of Rafah has never been undertaken, sanitation conditions in West Rafah are probably the worst in Gaza. To solve this problem alone, West Rafah becomes an appropriate place to begin implementing a sewage disposal project for the town of Rafah which can later be linked to other communities.

The municipality sought CDF's assistance in the past for the Hessie water project (82-082). As part of an overall integrated water and sanitation plan for Rafah, the Hessie project and the other water project (82-123) submitted here have become all the more important since the division of Rafah, with Rafah-Palestine losing one of its three drinking water wells to its new neighbor, Rafah-Sinai. Indeed, the current situation severely strains the capability of the existing water system to meet the needs of Rafah's present population. In this connection, CDF refers to its proposal 82-123 which requests funding to drill a third well, provide additional pumping mechanisms and pipelines, and to construct a high water tower. When completed, this project will facilitate the provision of clean drinking water to hitherto dry areas and will raise the per capita water consumption for Rafah to at least reach the minimum requirement laid down by the World Health Organization.

Although water resource development is regarded as a first priority, sanitation infrastructure is an equally important component for an integrated approach. Indeed, proper sewage and waste disposal become more important as per capita and total water consumption rise. Currently, all Rafah households, including those in refugee settlements, use small septic tanks which drain into the subsoil. Because most of Rafah, with the exception of the Rafah pool area in West Rafah, lies thirty meters above the water table, the inhabitants of the town have been disposing of their waste in this manner for years without contaminating ground aquifers. However, The Municipality of Rafah has long felt the septic tank system to be inadequate for the needs of a growing city. In 1979 it submitted to CDF copies of two tenders, each complete with bill of quantities, specifications and list of drawings which were related to the municipality's master plan to lay sewage pipelines, install pumps and construct a sewage treatment plant. The first tender was offered in March "For the Construction of a Sewer along Omar Ben-Al-Khattab Road". In November, the second tender "For the Construction of Main Sanitary Sewers along Sea Road and Darb El-Sultan Road" was also submitted.

The former tender, an ambitious \$ 6 million plan prepared on the basis of a government study, was to lay sewage lines and link these to a sewage treatment plant. It was not implemented by the municipality due to the prohibitive cost

involved in pumping waste 6 kilometers to the area which government approved to the east of Rafah. Other complications with this scheme subsequently arose because the 1979 plans extend partially across the international border, thereby requiring a significant degree of redesign before any further steps can be taken. The latter tender was for a treatment plant in the dune area near the sea which, although a less expensive option, was refused government permission due to its proximity to Israeli settlements planned for these areas.

Given its responsibility for refugee camps, a proposal to eliminate the most serious immediate health hazards, the Rafah pool, was made by the Gaza Strip Office of UNRWA, due to the large quantity of waste-water overflow that comes from nearby refugee camp housing. However, the seemingly modest goal of providing for the permanent drainage of this low-lying area came to assume larger than expected proportions. Draining the pool in fact requires setting in place the basic elements of a waste-water drainage system for West Rafah including the Tel Es-Sultan which is outside UNRWA's refugee oriented mandate, and exceeds the \$ 300,000 allocation UNRWA had estimated for draining the pool.

A situation similar to the Rafah pool is developing three kilometers further west towards the sea in the new housing area of Tel Es-Sultan where waste has also begun to accumulate. Tel Es-Sultan is planned by the municipality to accommodate 10,000 people; it recently increased in size and now has 300 families, many of whom were previously living in what is now an uninhabited security belt along the new Egyptian border. These families are among the approximately 1000 families displaced when a security zone was created around the international border.

For some of these families, this is the third time they have been displaced. In the late 60's those displaced from the Nakhle quarter and Canada Camp, for example, were moved by the authorities from Gaza City when security roads were built through the camps.

In Tel Es-Sultan housing plots are 200 square meters and have sewage lines already laid. However, as there is no treatment facility, the waste collected in the Tel Es-Sultan sewage pipes, is conducted through the pipes and dumped, untreated, in an undeveloped area immediately across the road from Tel Es-Sultan. Here a 10 x 5 meter sewage pool has already built up. With the population of Tel Es-Sultan expected to increase, the pool has the potential of reaching the same unhealthy proportions as the Rafah pool.

To alleviate the Tel Es-Sultan and Rafah pool sewage problems, the Israeli authorities have approved only one plan, constructing a pipeline with adequate pumping and reservoir capacity from the Rafah pool to the sea. The Tel Es-Sultan housing settlement would be hooked in, as well as households situated along the proposed pipeline. Although the solution proposed would dispose of untreated sewage in the sea it is to be stressed that this is the only solution to the sewage problem which the Israeli authorities have approved. The problems caused by sea disposal of waste must therefore be measured against the very real ongoing health problems caused by allowing the sewage to collect in a heavily populated residential areas.

In implementing this project CDF commits itself to advocate the most environmentally sound solution to the existing health hazards in the Tel Es-Sultan and Rafah communities. As a first step, once this project is funded, CDF will

conduct its own technical survey and professional assessment of alternative solutions to the problem of sewage disposal and discuss these options with the authorities. Should the authorities insist on the sea outlet option, CDF will seek a design which the municipality can adopt at a later time to a more environmentally sound treatment lagoon or disposal system.

#### 6. Project Purpose:

The purpose of this project is to assist and encourage the municipality of Rafah in its plan to provide adequate sanitation to West Rafah residents. Such municipal projects are an important component of the Community Development Foundation's objective of helping communities in the West Bank and Gaza Strip meet at least the minimum goals of the UN-sponsored International Drinking Water and Sanitation Decade.

#### 7. Project Output:

(The attached map refers to letters A-J)

A 60 cubic meter capacity reservoir (a) will be excavated and lined with concrete near the presently over-flowing Rafah pool (b). Because it will be located on relatively high ground, the reservoir will facilitate the flow of effluent through a two kilometer, pumpless, gravity-fed 30 cm pipeline (c). The first length of pipeline will run parallel to the road and extend to the lowest point which will be a pit excavated for maximum depth near Tel Es-Sultan. At this site, a pumping station (d) with two twenty-horse power diesel pumps will be constructed which will lift the waste matter along a 300 meter, slightly uphill stretch (e) to Tel Es-Sultan. Here another 60 cubic meter container tank (f) will be constructed alongside a larger pumping station (g) which will contain two eighty-five horse power diesel pumps. This will provide enough power to assist the now increased volume of waste to move towards the sea outlet along a three kilometer stretch of 12-inch diameter pipeline (h) at a rate of three hundred and eighty cubic meters per hour. The outlet pipe (i) will conduct the sewage two hundred meters distance away from the shore where the prevailing current will carry it south towards the uninhabited region of the coastline.

Once this system is in place, the Rafah pool will be drained with a portable pump and 300 meters of pipeline. When the pool is drained, further effluent will be redirected to the 60 cubic meter reservoir (a). The newly-drained area will then be excavated and the residue which has formed on the bottom will be removed by trucks. Clearing the basin of the pool of sludge will facilitate the downwards seepage of winter rainwater thereby minimizing further accumulation.

On the basis of an engineering feasibility study recently prepared by an Israeli firm the specific outputs and costs of this project are as follows:

1. Purchase and laying of 2,000 meters of 30 cm diameter pipe, including roadwork and provision of manholes	210,000
2. excavation for and construction of 60 cubic cm capacity container tank.	114,000
3. Excavation for and construction of pump pit and pump base	68,500
4. Purchase and installation of two H.P. diesel pumps	36,500
5. Purchase and laying of 900 meters of main line pressure piping	20,500
6. Construction of pump station and purchase of two 85 H.P. diesel pumps	68,500
7. Purchase and laying of 3,000 meters of 12 inch diameter pipe	182,500
8. Purchase and laying of 200 meters of underwater outlet pipe	45,500
9. Purchase of temporary pump and laying 300 meters of pipeline to empty the Rafah pool (includes transportation of pipe)	58,000
10. Excavation for and construction of 60 cubic cm capacity container tank.	114,000
<b>10. Subtotal</b>	<b>918,000</b>
11. Survey and design	91800
12. Site Supervision	110160
13. Contingency Costs	95900
<b>14. Subtotal</b>	<b>247860</b>
<b>15. Grand Total</b>	<b>\$ 1,165,860</b>

## 8. Project Input:

The Community Development Foundation will contribute \$500,000 primarily towards the purchase and installation of sewage pipes. The Municipality of Rafah will pay the balance of the cost of the project from its regular budget and from special contributions raised to support this priority project.

## 9. Additional Note:

### A. Volume of Waste

The volume of sewage to be disposed has been calculated as follows:

1) The immediate population of the area whose sewage and domestic waste is contributing to the build-up of the Rafah pool is approximately 20,000. One recent study estimated the per capita water consumption per day for this area to be fifty liters. Working on the standard figure of 85% of that amount being expelled as waste liquid, it is estimated that each day 900 cubic meters of sewage enters the pool. Using the "10-hour day" normally used for calculation, the figure of 90 cubic meters per hour is obtained.

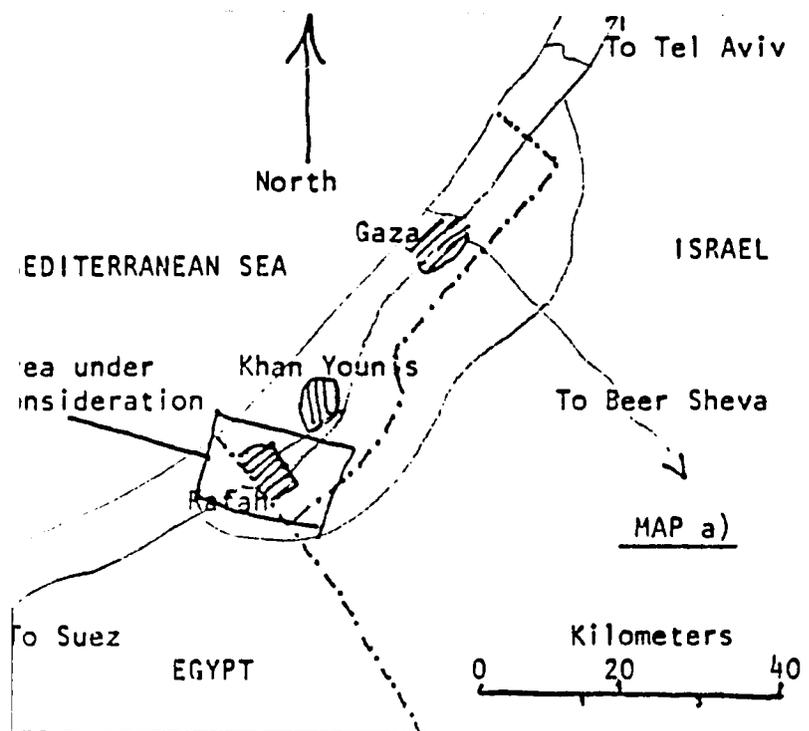
2) To account for population increase and potential of low increase caused by additional linkages to the proposed system, the Municipality engineers estimate the maximum sewage flow to range from 150 to 180 cubic meters per hour. This is the projected amount which would gravitate along the two kilometer pipeline from the Rafah pool to the Tel Es-Sultan housing area, where additional waste would be received and conveyed under pressure to the sea.

3) The 10,000 people in Tel Es-Sultan have a noticeably higher standard of living than the residential area around the Rafah pool. Accordingly, Tel Es-Sultan has an estimated per capita consumption of 150 liters of water per day, with an estimated 120 liters per capita returned as waste to the system. This works out to 200 cubic meters per hour of sewage originating in Tel Es-Sultan which when added to the previous estimate of 180 cubic meters per hour from the Rafah pool area gives a combined volume of 380 cubic meters of sewage per hour to be conveyed to the sea.

### B. Counterpart Funding

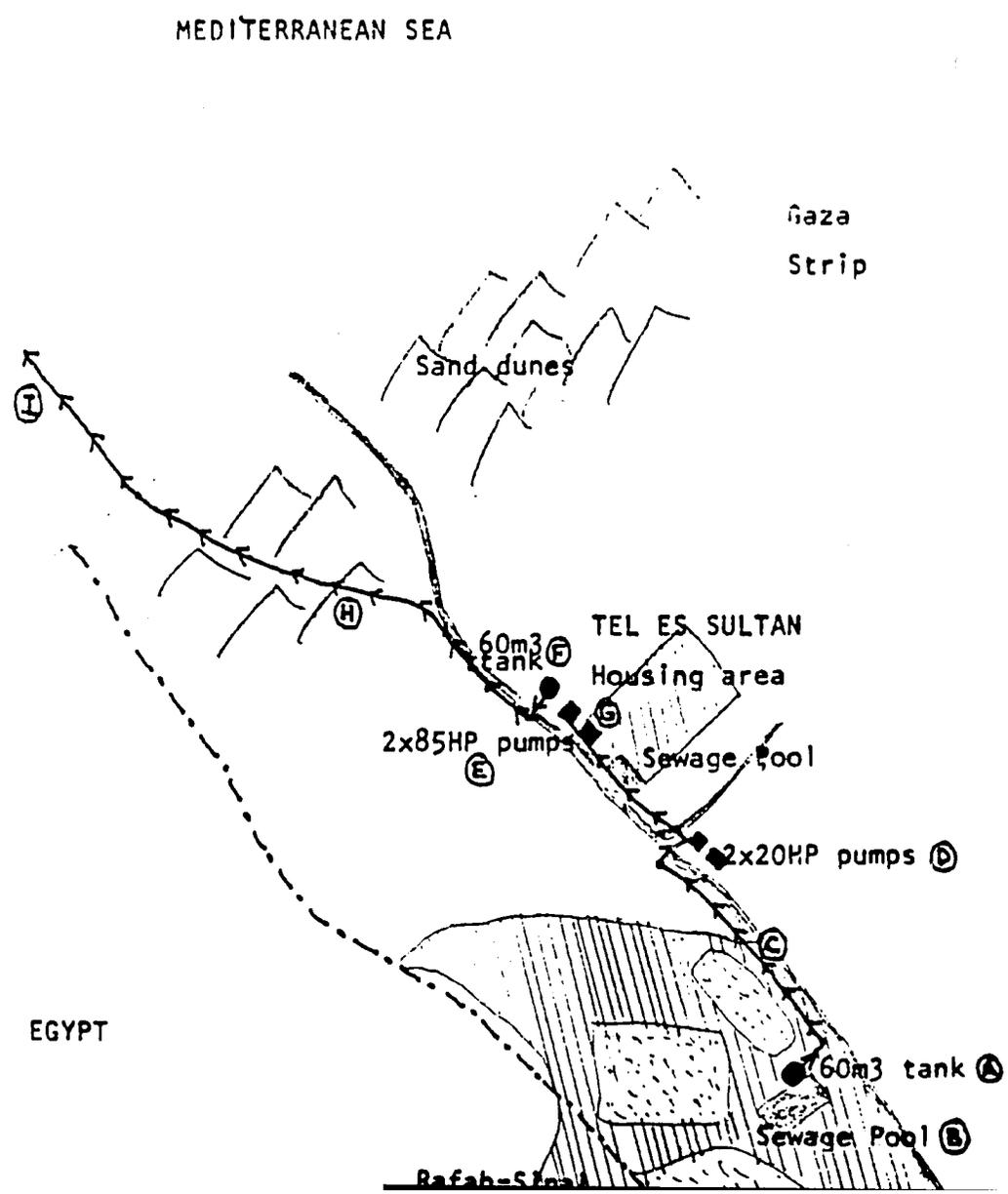
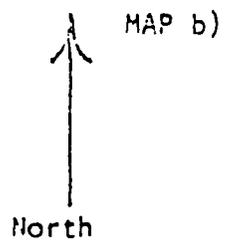
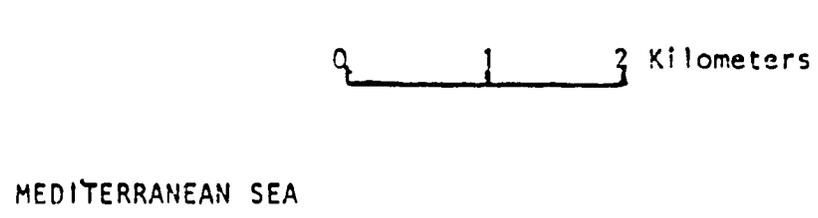
The basic infrastructure needs of Rafah are provided by either the municipality or by UNRWA (United Nations Relief & Works Agency for Palestine Refugees). The latter's responsibility is only the refugee camps which are interspersed among residential areas. A major reason why the Rafah pool has not been drained and the Tel Es-Sultan sewage line not been connected is because neither UNRWA nor the municipality were able to singly or together marshal adequate resources to

accomplish this. Indeed, previous plans called for much more expensive solutions to West Rafah's sewage problems than the one presented here. CDF resources will complement those of the municipality, and possibly UNRWA, making it possible to implement this project. In the event CDF fails to secure funding, this project is not likely to be implemented by the other parties, because they do not have access to the level of funding required to implement even this, the least expensive option for solving the West Rafah sewage problem. At the time CDF funding is allocated, discussions will be held with UNRWA and the Municipality to make a final apportionment of project costs. In this regard it is understood that UNRWA's major interest in this project relates to cleaning the Rafah pool which is adjacent to and fed by the waste-water from nearby refugee camps.

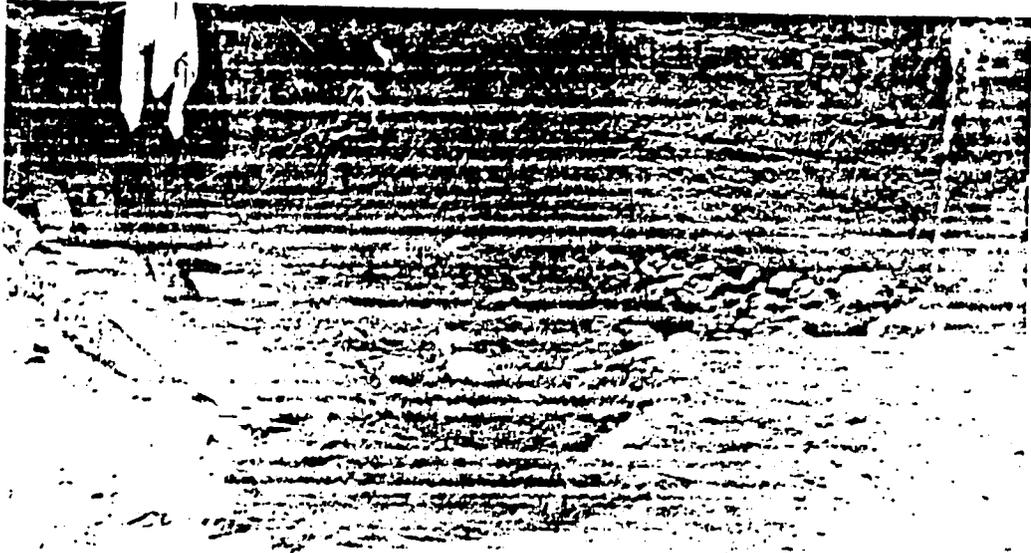


MAP REPRESENTING:

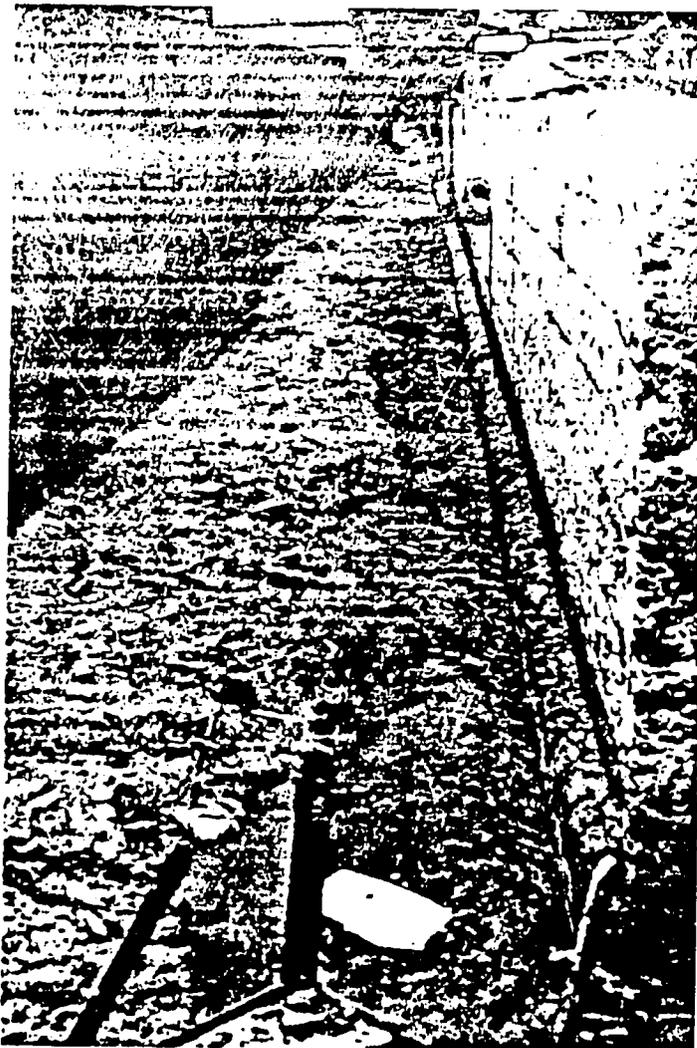
- a) Position of town of Rafah
- b) Position of proposed pipeline and outlet, with location of tanks and pumps.



KEY	
	Refugee housing
	Non refugee housing
	Sewage pools
	Surfaced road
	Reservoir/Tank
	Deseil pumps
	Main pipeline



MAIN SEWAGE CANAL FEEDING RAFAH POOL



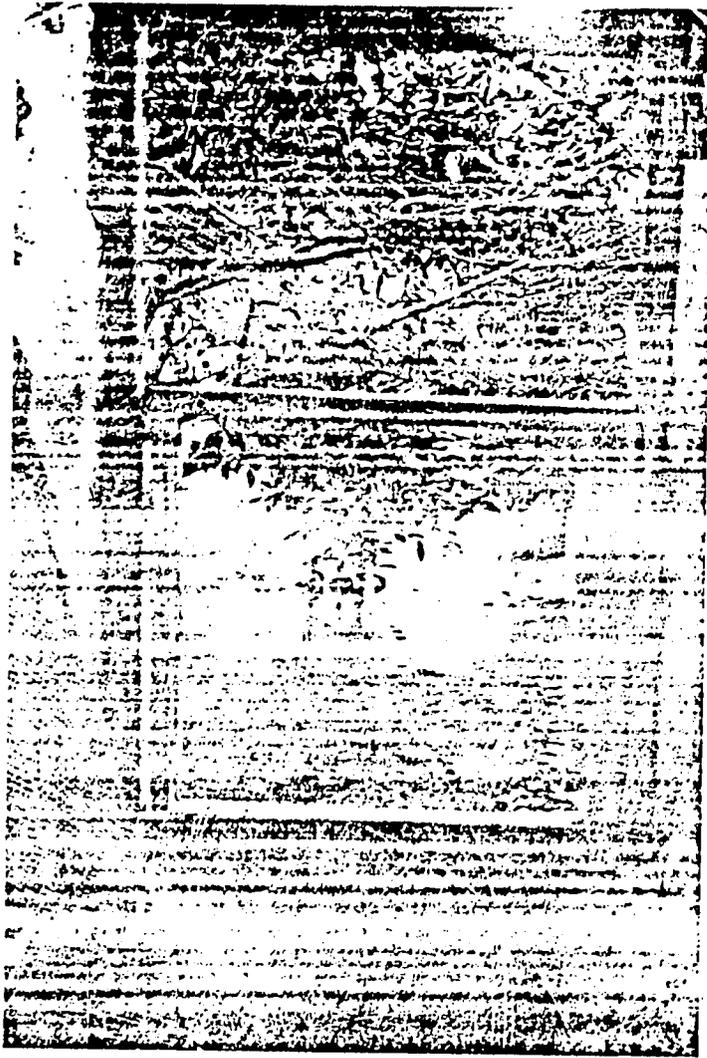
CANAL AT LOW EBB BUT SHOWING SIGNS  
OF HEAVIER FLOW



THE RAFAH POOL (UPPER RIGHT CORNER) WITH RETAINING WALL BUILT TO CONTAIN.



A BREACH IN THE RETAINING WALL ALLOWS SEWAGE TO FLOOD ADJACENT ORCHARD.



SEWAGE OVERFLOW LAPPING AT THE WALLS OF A  
WEST RAFAH RESIDENCE.

COMMUNITY DEVELOPMENT FOUNDATION  
GAZA STRIP AND WEST BANK OFFICES

1. Project Title: Land Reclamation for Spice Plant Cultivation
2. Project Number: 82-126
3. CDF Allocation: \$ 50,000
4. Project Beneficiaries:

With the income generated by this project the immediate beneficiaries will be approximately 2,000 individuals who live in the Eastern Slopes or Central Uplands of the West Bank. Furthermore, this project will potentially assist large numbers of low income families in semi-arid areas whose livelihood to a large extent depends on subsistence agriculture. Residents of the West Bank and Gaza Strip who will benefit from the increased availability of thyme at a lower price can also be counted as beneficiaries.

5. Project Background:

Presently on the West Bank, around 1.6 million dunums are under crop cultivation while approximately 3.2 million dunum are left to natural vegetation. The larger portion of this latter area lies in the Central Uplands and Eastern Slopes and is potentially grazing land. Over one million dunums in both these regions are covered with wild plant species, including spice and medicinal plants.

The use of herbs as condiments and medicine has been known in the Middle East for ages and is still prevalent in villages today. Thyme (Majorana syriaca), the most popular of such herbs, has been a traditional spice and food on the West Bank for many years. As one indication of this popularity, it is estimated that prior to 1967 the output of thyme for purpose of both export and local consumption was in excess of 500 tons annually. Among its favorable qualities is the fact that as a native plant it grows wild in almost any type of soil and requires minimal care once planted. Furthermore, it flourishes in semi-arid regions where the rainfall is as little as 250 mm a year. Thyme is protected from grazing animals by its own high oil content which produces a strong aroma rendering it unpalatable to sheep and goats.

The natural vegetation on these 3.2 million dunums of marginal and sub-marginal land has been subjected to severe over-grazing in the last decade, causing soil erosion and accelerating the process of desertification, particularly in the Eastern Slopes. This in turn has lowered the carrying capacity of these grazing areas and caused a noticeable drop in the number of livestock, mainly sheep and goats.

It is in this context that the Israeli Nature Reserve Authority banned the collection of wild spices, including thyme in the early seventies. At that time, it was felt that every effort should be made to ensure the propagation of natural ground cover to prevent further soil erosion. Accordingly, restrictions were placed

on the traditional practice of collecting wild spices.

The establishment of cultivated thyme on reclaimed land in semi-arid areas will reinforce efforts to control soil erosion. It will also promote the regeneration of natural pastures facilitated by prevention of soil erosion which will spring up in areas adjacent to the cultivated with thyme. Low income farmers and herders will benefit from these pastures to the extent that supplementary feed costs they are now paying will be reduced. Furthermore, the cultivation of thyme will increase overall production, thereby alleviating the shortage of thyme available for household consumption and stabilizing the price of thyme locally. Small scale farmers and pastoralists will further benefit from the sale of fresh or dried thyme leaves derived from plants grown on previously unproductive marginal or abandoned land. Indeed, land which would be reclaimed for thyme spice cultivation would be suitable for little else; cereal or fruit production would not be possible because the rainfall is not sufficient to sustain these crops.

Beyond the traditional use of dried thyme for household consumption thyme may also be profitably cultivated for its oil. Preliminary research in the West Bank has indicated that Maioresna syriaca contains up to 3% carvacrol oil in fresh leaves and may reach up to 6% in dry leaves. Carvacrol oil is used as a base for perfume in the United States, France and other European countries. On the average, one dunum of intensely cultivated thyme will produce 10 kgs of oil from a single harvest; two harvests per year are usually obtained from thyme. Generally, the first harvest is marketed for spices and yields around 100 kgs of dry leaves per dunum, while the second harvest is used for oil extraction. It is estimated that the cultivation of one dunum of thyme can generate an annual net income of up to \$ 350 for farmers. As the plant remains productive for 10 years, giving profitable production beginning from the third year, the cumulative benefits to small-scale farmers is substantial.

#### 6. Project Purpose:

The purpose of this project is to revitalize the growing of an indigenous species of plant, thyme, by small-scale farmers on reclaimed land in semi-arid areas. The cultivation of thyme will promote the regeneration of natural pastures and protect the soil from further wind and rain erosion. Furthermore, the cultivation of thyme will generate additional income to small-scale farmers who are able to sell the leaves of the plant as a spice or for oil extraction.

By increasing the demand for thyme seedlings, this project will also encourage local nurseries, in particular the one located at the Beit Qad agricultural experimental station and the Qabatian nursery, to produce certified seedlings for other spice species, such as Coridothymus capitatus, Saturea thymbra, Maramia salvia triloba, and Zufa micromeria fruticosa, which can be used in the same way and for the same purposes as thyme seedlings.

A longer term objective to be addressed in a second stage of this project is to encourage the revival of local small agro-industries for spice oil processing. A local industry will become viable once a sufficient and stable supply of thyme is assured. It is anticipated that thyme cultivated intensely on reclaimed land will be the primary source of raw material for the spice plant oil-processing industry.

### III. Implementation Schedule

This section consists of an updated Project Summary Sheet and a Project progress report.

A. The Project Summary Sheet is a summary document which has proven to be useful in summarizing the Community Development Foundation program; with information provided on each separate project which has been recommended to the Military Government and to the respective funding source. Each of the eight columns on the summary sheet provides a key piece of information.

- The Project Number is indicated in the first column. The first two letters indicate whether the project is located in the West Bank or the Gaza Strip. The three digit numbers which follow are assigned sequentially, according to the date on which the particular project has been submitted, although there are instances where one project was later substituted for another which, for one reason or another, had to be dropped from the list.
- The complete, or else slightly abbreviated Project Title is given in the second column from the left.
- The third column, entitled (A) Amounts Recommended, shows the total amount which the Community Development Foundation staff intends to contribute to the project. In most cases, this amount has been requested of or actually granted by the Agency for International Development, although there are several instances in which some or all of the amount listed has been requested or donated by another source.
- (B) Month Submitted indicates the time in which the project was formally submitted to the respective Staff Officer of the Ministry of Labour and Social Affairs. This does not necessarily coincide with the date on which the project was recommended to a prospective funding source, although the two events are closely related in practice.
- (C) Month Cleared shows the date on which a verbal go-ahead has been given by the Staff Officer assigned to the West Bank or Gaza Strip. The difference between the dates indicated in this and other columns provides a clear indication of the time which is needed to accomplish the various stages of project implementation.

- (D) Current Expenditure indicates the exact amount, translated into dollars at a series of average monthly exchange rates, that has been spent by the Community Development Foundation on each project listed.
- (E) Month Completed indicates the approximate time in which the last part of the recommended CDF share has been expended, i.e. when the Current Expenditure (E) is exactly equal to the Amount Recommended (A).
- (F) Month Evaluated indicates the date on which the final audit and evaluation have been completed. If any further steps need to be taken, such as an increase in the recommended funding commitment, or a re-evaluation of project results, the date of the last action is inserted, so that the date in the last column can be understood to be the date on which "the file is closed" on an individual project.

Information on grant expenditures is provided in the last section of this proposal, the Progress Progress Report, which is an up-date on the progress of Project Implementation and then focuses specifically on the projects for which additional expenditures are needed and recommended.

<u>Projects Recommended by the Save the Children/ Community Development Foundation Field Office:</u>		<u>(A) Amounts Recommended</u>	<u>(B) Month Submitted</u>	<u>(C) Month Cleared</u>	<u>(D) Current Expenditure</u>	<u>(E) Month Last Exp.</u>	<u>(F) Month Evaluated</u>
JB019	Beit Sahour Municipality Road and Water Supply	\$ 50,000.00	Apr. 1979	Aug. 1979	\$ 49,999.50	Apr. 1982	-
JB020	Halhoul, Zeboud and Arnaba Market Road Network	\$ 35,000.00	Apr. 1979	-	-	-	-
JB021	Nunque, Sinjir and Kinnar Village Access Roads	\$ 70,000.00	Apr. 1979	July 1979	\$ 60,079.09	Sep. 1980	Sept. 1981
JB026	Si'ir and Shuyukh Co-operative Water Networks	\$200,000.00	July 1979	Nov. 1979	\$151,082.00	May 1982	-
JB027	Abu Qash Local Committee Water Supply Networks	\$ 40,000.00	July 1979	Nov. 1979	\$ 33,975.20	June 1981	-
JB033	Attil Agricultural Co-operative Water Network	\$ 30,000.00	Feb. 1980	-	-	-	-
JB036	Deir Dibwan Co-operative Earthmoving Equipment	\$ 35,000.00	Feb. 1980	-	-	-	-
JB037	Wadi Fukin Committee Agricultural Market Road	\$ 30,000.00	July 1980	Feb. 1981	\$ 24,700.00	April 1982	-
JS041	Arab Medical Assoc. Ophthalmic Clinic in Rafah	\$ 30,000.00	Dec. 1979	Nov. 1981	-	-	-
JS050	Beit Lahiya Village Council Water Distribution	\$100,000.00	Dec. 1980	Feb. 1981	\$ 70,000.00	Dec. 1981	-
JS054	Musadra Quarter Agricultural Road Improvement	\$ 30,000.00	Mar. 1981	July 1981	-	-	-
JS055	Zawaida Village Council Water Pipeline Network	\$ 30,000.00	Mar. 1981	July 1981	\$ 30,000.00	Nov. 1981	-
JB062	Hebron Red Crescent Soc'y Multi-purpose Center	\$100,000.00	Nov. 1979	Dec. 1979	\$100,000.00	Aug. 1981	-
JB065	Kufeiret Village Council Water Supply Network	\$ 45,000.00	Nov. 1979	Feb. 1980	\$ 31,600.97	May 1981	-
JB066	Mirkeh Village Council Water Pump and Network	\$ 45,000.00	July 1980	Nov. 1980	\$ 27,000.00	Apr. 1981	-
JB067	Hableh Village Council Water Well and Network	\$ 55,000.00	July 1980	Nov. 1980	\$ 52,848.81	Jan. 1982	-
JB068	Nu'eimeh Committee Water Reservoir Development	\$ 20,000.00	July 1980	Nov. 1980	\$ 16,700.00	Sep. 1981	-
JB069	Abu Dis Co-operative Water Lines and Reservoir	\$ 60,000.00	Aug. 1980	Feb. 1981	\$ 41,210.00	Apr. 1982	-
JB070	Battir/Sharafeh Committee Water Supply Network	\$ 70,000.00	Nov. 1979	Nov. 1979	\$ 60,000.00	Aug. 1981	-
JB072	Olive Seedlings Subsidy & Distribution, FY81-82	\$127,500.00	July 1980	Jan. 1981	\$126,936.31	Mar. 1982	-
JB073	Other Seedlings Subsidy & Distribution, FY81-82	\$ 7,500.00	July 1980	Jan. 1981	\$ 3,931.92	Feb. 1982	-
JB074	Eastern Slopes Region Cistern Subsidies	\$ 50,000.00	Aug. 1980	Dec. 1980	\$ 24,885.00	Apr. 1982	-
JB075	El-Bireh Municipality Sewage Treatment System	\$250,000.00	Aug. 1980	Feb. 1981	-	-	-
JB076	El-Bireh Municipality Forest Seedling Nursery	\$ 25,000.00	Dec. 1980	-	-	-	-
JB078	Jenin Municipality Waste-water Drainage System	\$100,000.00	Dec. 1980	-	-	-	-
JB079	Bethlehem Municipality Wholesale/Retail Market	\$506,500.00	Dec. 1980	May 1981	\$ 3,250.00	Apr. 1982	-
JB080	Bani Na'im Committee Water Pump & Main Lines	\$ 20,000.00	Dec. 1980	Mar. 1981	\$ 10,871.43	Apr. 1982	-
JS081	Beit Hanoun Village Council Market Access Road	\$ 60,000.00	Dec. 1980	Apr. 1981	\$ 22,000.00	Mar. 1982	-

<u>Projects Recommended by the Save the Children/ Community Development Foundation Field Office</u>		<u>(A) Amounts Recommended</u>	<u>(B) Month Submitted</u>	<u>(C) Month Cleared</u>	<u>(F) Current Expenditure</u>	<u>(E) Month Last Exp.</u>	<u>(F) Month Evaluated</u>
S082	Rafah Municipality Neighborhood Water Networks	\$ 25,000.00	Dec. 1980	Apr. 1981	\$ 25,000.00	Jan. 1982	-
B084	Grape Vine Trellising Equipment Grants FY-81-82	\$ 40,000.00	Jan. 1981	Apr. 1981	\$ 23,845.50	May 1982	-
B086	Ya'bad Municipality Reservoir and Water Supply	\$ 60,000.00	May 1981	Nov. 1981	-	-	-
B087	El-Jeeb Local Committee Internal Water Network	\$ 50,000.00	May 1981	-	-	-	-
B088	Mukhmas Local Committee Internal Water Network	\$ 50,000.00	May 1981	May 1982	-	-	-
S089	Ikhza'a Village Council Water Tower & Network	\$ 30,000.00	June 1981	Dec. 1981	\$ 20,000.00	May 1982	-
B091	Eastern Slopes Region Erosion Control Barriers	\$ 50,000.00	Oct. 1981	May 1981	-	-	-
B092	Jalameh Village Council Main Line and Network	\$ 50,000.00	Oct. 1981	-	-	-	-
B093	Arrabeh Municipality Reservoir and Water Line	\$ 50,000.00	Oct. 1981	-	-	-	-
B094	Shufah Local Committee Well and Water Network	\$ 50,000.00	Oct. 1981	-	-	-	-
B095	Kawbar Local Committee Internal Water Network	\$ 40,000.00	Oct. 1981	-	-	-	-
B096	Abu Shkheidem Council Internal Water Network	\$ 40,000.00	Oct. 1981	-	-	-	-
B097	Mazra'a El-Qibliya Committee Water Network	\$ 40,000.00	Oct. 1981	-	-	-	-
B107	Olive Seedling Subsidy and Distribution FY 83	\$ 70,000.00	Feb. 1982	-	-	-	-
B108	Almond and Fruit Seedling Subsidy & Dis. FY 83	\$ 5,000.00	Feb. 1982	-	-	-	-
S111	Fishermen's Cooperative Marketing Facilities	\$100,000.00	May 1982	-	-	-	-
S114	Deir Al-Balah Vegetable Co-operative Transport Vehicle.	\$ 25,000.00	May 1982	-	-	-	-
S115	Zawaida Village Council Internal Road	\$ 30,000.00	May 1982	-	-	-	-
S116	Jabalia Village Council Agricultural Road	\$ 70,000.00	May 1982	-	-	-	-
S123	Rafah Municipality/Domestic Water Supply Stage One.	\$210,000.00	May 1982	-	-	-	-
B124	Burqin Village Council Domestic Water Supply	\$130,000.00	June 1982	-	-	-	-
B125	West Rafah Municipality Sewage Disposal	\$500,000.00	Sept. 1982	-	-	-	-
B126	Land Reclamation for Spice Plant Cultivation	\$ 50,000.00	Sept. 1982	-	-	-	-

B. Project Progress Report - July 1, 1981 to June 30, 1982.

A total of forty projects approved in the basic grant and subsequent amendment are identified in the Project Summary Sheet. Of this number:-

- a) Eighteen (WB019, WB021, WB026, WB027, WB037, GS050, GS055, WB062, WB065, WB066, WB068, WB069, WB070, WB072, WB073, WB080, GS082, GS089) have been fully implemented and have either received or are about to receive their final audit, evaluation and payment;
- b) Ten (GS041, GS054, WB074, WB075, WB079, GS081, WB084, WB086, WB088, WB091) are in the process of implementation;
- c) Twelve (WB020, WB033, WB036, WB076, WB078, WB092, WB092, WB093, WB094, WB095, WB096, WB097) await clearance from the military authorities.

The new projects for which funding is requested at this time have all been submitted to the authorities for their clearance. The following chart presents a budget breakdown for the tables pp.

<u>Status of Projects Recommended by C.D.F.</u>	<u>Amount Recommended CDF Share</u>	<u>Expense July 1, 198 to June 30, 1982.</u>
1) Implementation or awaiting audit, evaluation or final payment - eighteen projects.	\$ 504,420	\$ 361,380
2) In process of implementation - ten projects	\$ 1,045,000	\$ 109,970
3) Awaiting GOI clearance - twelve projects	\$ 555,000	-0-
4) Current supplemental submission	\$ 1,250,000	-0-

Out of the original amount \$ 550,200 allocated for direct aid under the basic USAID grant, the Community Development Foundation has already expensed \$ 471,350 as of June 30, 1982. It is projected that the \$ 1,500,000 direct aid budgeted under the amendment signed in June 1982 will be expensed at similar rate, especially in view of the fact that two projects (WB079 and WB075) account for \$ 750,000 of the allocation and are already cleared by the authorities.

PROJECTS AWAITING AUDIT, EVALUATION OR FINAL PAYMENT

<u>Project Name</u>	<u>Number</u>	<u>Funded by USAID</u>	<u>Amount Recommended July 81 - Dec.31,82</u>	<u>Expenses July 1,81 - June 30, 1982</u>
Beit Sahour Municipality Road and Water Supply	WB019	April 1982	\$ 22,100	\$ 22,100
Nunqur, Sinjir and Kinnar Village Access Roads	WB021	April 1982	9,920	-
Si'ir and Shuyukh Coopera- tive Networks	WB026	April 1982	10,000	11,100
Abu Qash Local Committee Water Supply Networks	WB027	April 1982	6,000	-
Wadi Fukin Committee Agricultural Market Road	WB037	July 1981	20,000	14,700
Beit Lahiya Village Council Water Distribution	GS050	July 1981	80,000	50,000
Zawaida Village Council Water Pipeline Network	GS055	July 1981	30,000	30,000
Hebron Red Crescent Soc'y Multipurpose Center	WB062	April 1982	5,000	5,000
Kufeiret Village Council Water Supply Network	WB065	April 1982	13,400	1,915
Mirken Village Council Water Pump and Network	WB066	April 1982	18,000	-
Nu'eimeh Committee Water Resource Development	WB068	July 1981	20,000	7,000
Abu Dis Co-operative Water Lines and Reservoir	WB069	July 1981	60,000	41,210
Battir/Sharafeh Committee Water Supply Network	WB070	April 1982	10,000	-
Olive Seedlings Subsidy and Distribution	WB072	July 1981	120,000	126,940
Other Seedlings Subsidy and Distribution	WB073	July 1981	10,000	4,000
Bani Na'im Committee Water Pump and Main Lines	WB080	July 1981	20,000	12,415
Hessie Quarter of Rafah Internal Water Network	GS082	July 1981	20,000	15,000
Ikhza'a Village Council Water Tower and Network	GS089	April 1982	30,000	20,000
			<hr/> 504,420	<hr/> 361,380
			=====	=====

PROJECTS IN PROCESS OF IMPLEMENTATION

<u>Project Name</u>	<u>Number</u>	<u>Funded by USAID</u>	<u>Amount Recommended July 1, 81 - Dec. 31, 82</u> \$	<u>Expenses July 1, 81 - June 30, 1982</u> \$
Arab Medical Association Ophthalmic Clinic in Rafah	GS041	July 81	30,000	-
Musadra Quarter Agricultural Road Improvement	GS054	July 81	30,000	-
Eastern Slopes Region Cistern Subsidies	WB074	July 1981	35,000	28,225
El-Bireh Municipality Sewage Treatment System	WB075	April 1982	250,000	-
Bethlehem Municipality Wholesale/Retail Market	WB079	April 1982	500,000	6,500*
Beit Hanoun Village Council Market Access Road	GS081	July 1981	60,000	22,000
Grape Vine Trellising Equipment Grants, FY81-82	WB084	July 1981	40,000	30,115
Yalbad Municipality Reser- voir and Water Supply	WB086	April 1982	50,000	5,730
Mukhmas Local Committee Internal Water Network	WB088	April 1982	50,000	17,400
Eastern Slopes Region Erosion Control Barriers	WB091	April 1982	35,000	
TOTAL:-			1,045,000	109,970

\* For economic/financial feasibility study of cold storage unit which was submitted to NE/TECH/SPRD July 11, 1982.

PROJECTS AWAITING CLEARANCE FROM THE AUTHORITIES

<u>Project Name</u>	<u>Number</u>	<u>Funded by USAID</u>	<u>Amounted Recommended July 1, 81 - Dec. 31, 1982</u>	<u>Expenses to date</u>
			\$	\$
Halhoul, Zeboud and Arnaba Market Road	WB020	July 1981	35,000	-
Attil Agricultural Co-operative Water Network	WB033	July 1981	30,000	-
Deir Dibwan Cooperative Earthmoving Equipment	WB036	July 1981	35,000	-
El-Birah Municipality Forest Seedling Nursery	WB076	July 1981	25,000	-
Jenin Municipality Waster-water Drainage System	WB078	July 1981	100,000	-
El-Jeeb Local Committee Internal Water Network	WB087	June 1982	50,000	-
Jalameh Village Council Main Line and Network	WB092	June 1982	50,000	-
Arrabah Municipality Reservoir and Water Line	WB093	June 1982	50,000	-
Snufan Local Committee well and Water Network	WB094	June 1982	50,000	-
Kawbar Local Committee Internal Water Network	WB095	June 1982	50,000	-
Abu Shkheidem Council Internal Water Network	WB096	June 1982	40,000	-
Mazra'a Ei-Qibliyeh Committee Water Network	WB097	June 1982	40,000	-

Note: In addition to the projects listed above, the projects included in this submission to USAID, are also awaiting clearance from the authorities.

AN EVALUATION OF THE  
CDF SEEDLING DISTRIBUTION PROJECT

By

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Submitted to :

Mr. Philip Davies, Director  
Community Development Foundation, Jerusalem

June 1982

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## INTRODUCTION

### Objectives

Realizing the very special role of olives and other fruit trees in West Bank agriculture and socio-economic life, the Community Development Foundation has displayed interest in assisting farmers by facilitating wider distribution of seedlings at subsidized prices. To meet that objective CDF initiated in 1978 a major project through which it distributed seedlings of olive, almond and plum. The scope of this project expanded rapidly in subsequent years, both in number of seedlings distributed and number of recipient farmers.

In April 1987 CDF approached the present researcher requesting an evaluation of its seedling distribution project, addressed to achieve the following :

- a. "Review data concerning the delivery of project inputs and the production of project outputs, and in light of this assess the extent to which the outputs brought progress toward the achievement of the project purpose and the project's wider objectives".
- b. "Review the appropriateness of the objective of the project in context of the West Bank and Gaza environment and economy".

This report meets both objectives and it is based on about six weeks of intensive fieldwork.

### Methodology

A task force of several technicians was mobilized for the purpose of conducting the needed fieldwork. They included four senior horticulturists and one agricultural economist. The team collaborated in various ways, but mainly in interviewing a sample of recipient farmers and a sample of local specialists (e.g. extension and cooperative staff, leading farmers and some informed agri-businessmen). Responses of each group

were recorded on a special questionnaire. By the end of this study, it was possible to interview a sample of 55 recipient farmers and 38 technicians representing all districts, except Jericho.

In addition to the assesment of views expressed by beneficiaries and horticulture specialists, the researcher has had lengthy interviews with the personnel of CDF and the Mennonite Central Committee (MCC) and with many knowledgeable people in the project areas. He also made a comprehensive review of pertinent literature on olive production and economics in the West Bank and Gaza Strip.

Area, output and income

Fruit trees constitute the backbone of agriculture in the occupied territories, whether in terms of area or share in agricultural income. Counting on the average for three years (1977 - 79), fruit trees in the West Bank have occupied an estimated area of 941 thousand donum (60% of all area under cultivation) and provided 45% of gross farm income (see Table 1). In Gaza Strip the area of fruit trees is estimated at 126 thousand donums ( 84% of all cultivated area) which contributed around 60% of gross farm income .

Table (1)  
Area, output and income from fruit trees  
(Average for 1977,78,79)

<u>West Bank</u>	<u>Area</u>		<u>Output</u>	<u>Share in agr.</u>
	<u>,000 don.</u>	<u>% of total</u>	<u>,000 tons</u>	<u>income (%)</u>
(Total)	940.6	100	210.1	45.2
Olives	669.1	71.2	41.0	22.3
Grapes	92.2	9.8	41.4	6.1
Almonds	78.5	8.3	6.3	2.6
Plums	32.1	3.4	17.3	2.7
Apricots	4.7	0.5	1.7	0.2
Figs	29.0	3.1	10.0	1.6
Citrus	25.5	2.7	81.8	8.2
Banana	2.0	0.2	5.6	0.9
Others	7.7	0.8	4.9	0.8

	Area		Output	Share in agri.
	<u>,000 don.</u>	<u>% of total</u>	<u>,000 tons</u>	<u>income (%)</u>
<u>Gaza Strip</u>				
Total	126.2	100.0	208.4	59.4
Citrus	71.8	56.9	184.6	47.8
Grapes	8.2	6.5	6.3	2.1
Olives	10.5	8.3	3.2	1.6
Others	35.7	28.3	14.1	7.9

Source: 1. For areas : Files of the Department of Agriculture.  
 2. For output and income: Administered Territories Statistics Quarterly 1980, Vol. 1 - 2 , pp. 88 - 89 .

Previous data indicate that olives and citrus occupy a dominant role in the agricultural sectors of the West Bank and Gaza Strip. It is noted, however, that problems related to citrus production are distinctively different from all other fruit trees by being related mostly to areas of marketing and processing. Furthermore, citrus growers are relatively much better off financially and more able technically as compared with the predominantly peasant-type growers of rainfed trees. For these reasons, CDF and other voluntary agencies were generally more interested in assisting tree growers in dry farming regions.

The breakdown of area and income in Table (1) shows that West Bank olives occupy around 71 % of all area under fruit trees (40% of total cultivated area) and contribute around one fifth of gross agricultural income. Grapes and almonds rank next in area (10% and 8% respectively), but citrus is more important than both as a source of income, although it occupies less than 3% of area under trees.

Geographic distribution

Rainfed trees display a pronounced degree of regional concentration. For instance, about 90% of all vineyards are located in the grape-corridor stretching between Bethlehem and Hebron. On the other hand, 60 percent of almonds are grown in Tulkarm and Jenin districts.

Olives are grown with varying intensity in all West Bank geographic regions, except for the Jordan Valley and overlooking hills, where rainfall is usually below 250 millimetres (10 inches). Its intensive dissemination is attributed to its hardiness and noticeable tolerance to a wide range of climatic and soil variations. However, a marked degree of regional concentration is still observed. Table (2) shows that olive farming is concentrated in the northern districts (Tulkarm, Nablus, Jenin) which account together for three fourths of total area and output.

Table ( 2 )  
Area and output, by  
district

<u>District</u>	<u>Area-1980 (,000 donums)</u>			<u>Output(,000 tons)</u>
	<u>Productive</u>	<u>Non-prod.</u>	<u>Total</u>	<u>Av. for 1979,80</u>
West Bank - Total	665.8	68.9	734.7	78.9
Jenin	131.6	7.6	139.2	14.1
Tulkarm	210.0	19.1	229.1	26.1
Nablus	147.2	8.9	156.1	18.5
Ramallah	141.5	6.4	147.9	16.3
Jerusalem	1.6	-	1.6	0.1
Bethlehem	13.8	1.0	14.8	1.3
Hebron	20.1	25.9	46.0	2.5
Gaza Strip	11.0	2.0	13.0	4.8

Source : Files of district offices of the Department of Agriculture.

Although particularly fit for olives, the Hebron district is not an important production area, being much better known for its grapes and stone fruits. In recent years, however, farmers in that district have embarked on a vigorous campaign of growing new olive orchards. This is indicated in Table (2) which shows that more than one third of all non-productive olive area lies in Hebron district, and from Table (5) which shows that about half of all seedlings distributed by voluntary agencies have went to that district.

Olive production is characterized by violent periodicity. This is clearly indicated in Table (3) which shows that olive output during 1974 - 80 fluctuates from 10 to 110 thousand tons. Accordingly, income from olives varies widely. Counting on the records for the past eight years, gross income from olives averaged at about (\$ 110 millions).

Table (3)  
Output and income of olives  
(1974-80)

	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>Average</u>
Output (000 tons)	110.0	10.0	50.0	17.0	35.0	21.1	24.4	48.6
Value( US \$ )	138.6	104.4	126.1	93.6	170.4	27.6	116.7	111.3
% of agr. income	34.5	6.6	19.5	7.8	33.9	14.3	38.0	22.1

Source: Statistical Abstract of Israel for respective years.

Pronounced periodicity in olive output is partly a natural phenomenon related to what is known as "alternate bearing" habits of olive trees. But fluctuations in West Bank olive output are further accentuated by frequent erratic weather aberrations taking place in the blossoming season (e.g. hot spells, strong winds, rain and hail storms), which may result in a substantial drop of blossoms and newly set fruits. Unfortunately, only little could be done so far to avert such hazards.

### Significance to local communities

Unlike citrus and irrigated vegetable crops, most rainfed fruit trees are grown basically for family and domestic consumption. Grape is probably a major exception since it is noticeably market-oriented. Whereas olives are grown essentially to meet domestic needs of oil and pickles, and surplus produce is either exported or carried over in stores for future use. About 85% of the olive crop is used for extracting oil, and the rest is pickled (usually around 6000 tons a year).

Olive oil is by far the most important oil or fat in use in the occupied territories. Per capita consumption ranges from 3 kgs per annum in large towns to 15 kgs in small villages. Lower oil consumption of urban communities is attributed to their extensive use of other types of oil and samneh (a local brand of margarine).

In addition to oil and pickles, olive production provides owners with other locally important products. Non-edible oil residues are used commonly for making good quality soap. Wood resulting from pruning operations is extensively used as a fuel in all rural communities. Olive oil plup is also used as a fuel, or for further extraction of oil by solvent methods. Some of the better quality wood is used in the prosperous souvenir industry of Bethlehem - Jerusalem area.

A very important consequence of the seedling project stems from its environmental ramifications. Extensive dissemination of fruit trees (especially olives) on the hilly slopes of the West Bank helps greatly in reducing soil erosion and water run-off. With the tremendous rise in the cost of land reclamation, and due to the dominance of rocky land with high slope gradients, growing of trees is about the only way left at the present for conserving soil in that type of land.

In addition to the above-mentioned direct forms of return, olive production entails two other profound advantages. Firstly, it is noticed that olives are grown mostly on marginal land of classes III and IV most

most of which, by definition, is not fit for more remunerative forms of agriculture.\* Secondly, because of the high demand for labour in Israel and the resulting scarcity of labour in the West Bank, olive culture draws on forms of labour which have a very low opportunity cost, such as old family members, women, and the spare time of owners. Consequently, it is noticed that olives employ at a reasonable efficiency substantial quantities of land and labour inputs, basically at the expense of no other pattern of farming.

Despite previous arguments on the great importance of olives to West Bank rural communities, olive production is rarely considered as the primary source of income for farm families, even in major production areas. In this regard, the majority of olive growers (estimated by experts sampled at 50 percent) are mainly concerned with meeting their family needs for oil and pickles. Almost all producers have one or more sources of income (agricultural or non-agricultural) which are often considerably more important than income accruing from olives.

Counting on the estimates derived from farmers sampled, it was found that olive output accounted for only 15% of their total income. Likewise, respondent technicians estimate that 70% of olive growers derive less than 30% of their total income from olives. This shows that the socio-economic and nutritional returns from olives are far more pervasive and important than is indicated by purely monetary criteria.

#### Comparison between olives and alternative fruit trees

The closest substitutes to olives on West Bank hills are grapes and almonds. Olives are by far the more important in terms of area. Furthermore, olive oil is much more important as a staple diet for local markets, because producers are willing to store excess produce for future consumption in off - years.

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\*According to a land classification survey conducted in 1974, it was estimated that only 10% of the land area is fit for intensive farming, and 27% is not fit for any commercial type of agriculture. The rest, 63%, consists of rocky slopes with marginal productivity.

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Olive trees are also distinguished for being considerably more hardy, longer living, and much less susceptible to pest hazard than all local fruit trees. In the West Bank setting of sharply rising costs and diminishing profitability, reduced pest damage is an important prerequisite for increased profits.

Compared on purely economic grounds, olives are less market-oriented and noticeably less remunerative than both grapes and almonds. Net returns per donum in a good year are estimated at \$ 54 for olives, \$ 146 for non-trellised grapes, and \$ 85 for almonds.\*

All these attributes should be carefully evaluated when considering development policies for rainfed regions in the occupied territories.

• Propagation techniques

Propagation techniques remained for many decades an important bottleneck for wide-scale dissemination of olive orchards. The traditional method most commonly used was to grow seeds from wild varieties in special seedbeds and then graft them 2 - 3 years later. Seedlings grown this way were extremely labour intensive and required a long time before they came into production.

A breakthrough in olive propagation technology was signalled by the discovery of growth stimulating hormones applied on cuttings under controlled conditions. Using this method it is possible to produce a large number of seedlings at a relatively low cost and within a considerably shorter time. The new technique was put into practice by a pioneering nursery established by the late Qasem Abdul-Hadi.

After a few years of reticence most olive growers realized the practical merits of the new type of seedlings, especially that only a very

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\* Hisham Awartani, Agricultural Development in the West Bank, a Ph. D. thesis submitted to the University of Bradford, England, 1982 .

small quantity was produced by using alternative methods. The number of seedlings produced by Qasem's nursery rose sharply to 350,000 in 1977, and it became clear that the new technology had surpassed its experimental stage. The extensive dissemination of seedlings, however, was restrained by transportation and financial obstacles - until CDF and MCC stepped in.

#### Auxiliary services

The seedling distribution project is comprised of two major components - procurement arrangements and price subsidization. Notwithstanding the important role of this package of services in expanding olive culture, the ultimate success of this project, as defined in terms of promoting the long term socio-economic viability of olives in the West Bank economy, requires attending to a number of other auxiliary services. Unless farmers eventually realize that olive orchards are adequately remunerative, their interest in their newly - established orchards will suffer a sharp blow.

Land reclamation and the subsequent provision of irrigation water are the services most directly bearing on the success of newly grown seedlings. Although 80 percent of respondent farmers considered land reclamation essential to the construction of new orchards, only 25 percent of them reported performing some reclamation measures relative to new olive orchards. This consisted mainly of removing some rocks and constructing stone walls on hilly slopes. All these services were reportedly done through manual labour, mostly provided "free" by family members. Out-of-pocket costs were reported at only \$ 20 per dounm .

Providing some irrigation water during the subsequent summer months could be critical to the survival of newly-planted seedlings. Almost all sampled beneficiaries have irrigated their seedlings at least twice during the first summer after planting. Only 30% of them added any water thereafter, although they realized the significant effect of irrigation on rates of growth. The main reason given for not irrigating

seedlings more often was the lack of a nearby cistern. Alternatively, the cost of carrying water over long distances to orchard site is noticeably high.

Ploughing is the second most expensive item in olive culture, after cost of picking. It is estimated that 15% of growers plough three times a year, 50% plough twice, 30% plough once, and 10% do not plough at all. Ploughing is done almost totally by animals at a cost of about \$ 30 - 45 per day (\$ 9 - 15 per down) ; depending on topography. The main reasons for ploughing, as viewed by farmers and specialists, are elimination of weeds and facilitating absorption of rainwater.

Respondent farmers and technicians were questioned on the prospects of introducing small orchard-type tractors which might help reduce ploughing costs by one third to one half. Furthermore, respondents were consulted on the prospects of promoting wider application of weedkillers in partial replacement of ploughing. Farmers' responses relative to these and other auxiliary services were weighed by respondent farmers and specialists on a scale of 0 - 10 . The results are summarized in Table(4).

Table ( 4 )

Relative weights of olive growing related services

<u>Type of services</u>	<u>Relative weights*</u>	
	<u>By farmers</u>	<u>By technicians</u>
a. Assisting in land reclamation by providing farmers with some free bulldozer work.	6	7
b. Free and expedient transportation of seedlings to homes of beneficiaries.	9	8
c. Subsidizing price of seedlings at a rate of about one third of actual cost.	6	7
d. Assisting farmers in digging or repairing cisterns in project areas.	8	6
e. Providing custom ploughing services using small orchard-type tractors.	8	7
f. Chemical control of weeds through custom spraying arrangements.	7	5
g. Assisting farmers in controlling insects and diseases through custom spraying arrangements.	5	4

\* On a scale ranging from zero to ten.

The results in the above table provide very useful indicators for planning purposes and sheds light on various options open for voluntary agencies interested in promoting olive culture in the occupied territories. It is clear that procurement and delivery arrangements were rated highest both by respondent beneficiaries and technicians. Whereas subsidizing the price of seedlings themselves was not rated particularly high. Alternatively, both groups of respondents stress the need for introducing cost saving innovations which render olive growing more plausible, and therefore provide a stronger economic basis for advocating wider expansion in the seedling distribution project.

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PROJECT OUTPUT

Distribution data

Distribution of subsidized seedlings was launched in 1976 through an initiative taken by the Mennonite Central Committee. In 1978 the CDF followed suit at a modest scale and then expanded rapidly until seedling distribution became one of its most popular projects. Table (4) shows the aggregate number of seedlings distributed by both agencies since the inception of the project.

Table (4)  
Aggregate distribution data

	Olives		Total	Other trees		Total
	<u>CDF</u>	<u>MCC</u>	<u>Total</u>	<u>CDF</u>	<u>MCC</u>	<u>Total</u>
1976	-	1,100	1,100	-	-	-
1977	-	21,266	21,266	-	-	-
1978	-	34,733	34,733	-	2,211	2,211
1979	51,375	84,525	135,900	10,447	2,000	12,447
1980	112,641	87,369	200,010	7,795	1,600	9,395
1981	115,057	61,485	176,542	8,629	4,000	12,629
1982	137,264	71,600	208,864	4,787	-	4,787
Total	416,337	361,978	778,415	31,658	9,811	41,469

The figures reported in the above table indicate a clear emphasis on olives, which account for 95% of all seedlings distributed by both agencies. But in addition to seedlings distributed through voluntary agencies, many are sold directly to farmers. It was estimated by nursery owners that the number of olive seedlings distributed during the project period through voluntary agencies accounted for about two thirds of their sales in the occupied territories. Procurement of seedlings through commercial intermediaries subjects farmers to a number of disadvantages, such as higher prices and irregular delivery.

Regional distribution

In order to avoid duplication and to reduce over-head costs, MCC and CDF have agreed on some degree of regional specialization whereby the former serves southern districts (Hebron and Bethlehem) and the latter serves all the rest. This division, however, did not prevent them from channelling excess seedlings to deficit areas. Table (5) shows the regional distribution of olive seedlings during the project period.

Table ( 5 )  
Distribution of olive seedlings by district  
( MCC and CDF )

	<u>76/77</u>	<u>77/78</u>	<u>78/79</u>	<u>79/80</u>	<u>80/81</u>	<u>81/82</u>	<u>Total</u>
Jenin	-	-	-	13.2	16.9	12.1	41.8
Nablus	-	-	40.2	30.9	45.3	25.0	141.4
Tulkarm	-	-	11.0	17.2	17.5	13.4	59.1
Ramallah	-	8.2	20.0	29.1	23.2	27.1	106.6
Bethlehem and Jerusalem	-	2.2	-	15.0	10.4	13.7	41.3
Hebron	21.3	20.3	54.2	77.0	63.6	101.6	338.0
Gaza Strip	-	-	-	17.1	-	-	17.1
Total	21.3	34.7	135.9	200.0	176.5	206.9	777.3

The above figures indicate that Hebron district has accounted for about half of all distributed olive seedlings. Nablus and Ramallah followed next, whereas Jenin and Gaza Strip were noticeably lagging behind.

Hebron district has a substantial potential for growing more olives, despite superior profitability of grapes. Farmers in the western and middle slopes of Hebron mountains realize that increased olive production will help meet their demand for oil and stabilize their income from grapes, which has proved vulnerable to price problems arising from over-supply and perishability. Furthermore, farmers hope that olives might

offer some protection against escalating Israeli land encroachments. Nevertheless, expansion in olive culture in that district does not come at the expense of vineyards, since there is far more land than could feasibly be put under grapes. The same argument applies at varying degrees to all other districts, except the Jordan Valley and over-looking eastern slopes.

By virtue of its flat topography and relatively ample water supply, Gaza Strip has been traditionally famous for citrus production. Agriculture officials and local specialists in the Strip foresee a vigorous expansion in this direction during the coming few years, although anticipated demand will remain very modest when compared with that of the West Bank .

Being strongly opposed to any rise in the quantity of water utilized by Palestinians, Israeli authorities obstructed expansion in all forms of irrigated agriculture. Consequently, no permits were given for growing new citrus nor any other type of irrigated trees. This measure has deprived farmers in Gaza Strip of their traditional comparative advantage of growing citrus, and forced them instead to explore alternative patterns of rainfed agriculture, such as olives. The trend towards growing more olives has been further stimulated by the high price of olive oil, which is also considered a staple food item in Gaza .

Number of beneficiaries and villages reached

Available data indicates that CDF subsidized seedlings were distributed among 9460 farmers dwelling in 558 villages. MCC has further reached 9447 farmers in 370 villages (see Table 5) .

Table ( 5 )  
Number of beneficiaries and villages

	<u>CDF - Number of</u>		<u>MCC - Number of</u>		<u>Total</u>	
	<u>Farmers</u>	<u>Villages</u>	<u>Farmers</u>	<u>Villages</u>	<u>Farmers</u>	<u>Villages</u>
1976	-	-	10	2	10	2
1977	-	-	520	22	520	22
1978	-	-	860	33	860	33
1979	1294	31	2108	99	3402	130
1980	2405	144	2184	83	4589	227
1981	2257	176	1525	82	3782	258
1982	3504	207	2240	49	5744	256

The figures reported above on number of benefitting farmers do not take into account that many of the farmers and villages received seedlings in more than one year. Taking this into account, it is estimated that the number of recipient farmers is about 12000 (about 50% of total for the West Bank) dwelling in over 350 villages (out of 405).

Such coverage record is hardly paralleled by any other type of agricultural innovation introduced in the last two decades, and it points to a noticeably positive attitude of farmers. This achievement should be carefully maintained and effectively exploited.

Distribution of beneficiaries by income bracket and size of holding was assessed through interviews with sampled respondent and specialists. It was estimated that 15 percent of beneficiaries were

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among the upper one third of income groups, 70 percent were in medium brackets, and 15 percent were classified in the lower one third of income strata. Likewise, it was estimated that 10 percent of beneficiaries were described as being large land owners, 70 percent as medium owners, and 20 percent as small owners.

The above information on income and land ownership indicates that the seedling distribution project reached all income groups. While this may resulted in channelling some subsidies to farmers who do not need it, CDF has tried to insure a more equitable distribution of subsidy benefits in favour of poorer farmers. It was for that purpose that CDF restricted the number of seedlings to less than 50 per beneficiary. Since this ceiling is high enough to cover all poor farmers, but too low to meet all the needs of rich landlords.

### Increase in area

Almond, apricot, and plum seedlings were used mostly in patching existing orchards. It is difficult to project the increase in area of orchards brought in through the seedling distribution project, but it is quite modest and probably does not exceed two thousand donums.

The situation is quite different in the case of olives. According to official data the area under olives has increased during 1977-82 by 55,000 donums. Counting on an average of 15 seedlings per donum, and discounting for seedlings which die out before coming into production (estimated at 5%), the number of seedlings distributed by the CDF and MCC has resulted in an increase equivalent to some 49000 donums ( 38 % of all area added during the project period). CDF's share in the increased area is calculated at 26100 donums.

### Economic returns

Olive seedlings grown under rainfed conditions take 4-5 years to begin production and 3-4 more years before they give a commercial crop. In the meantime the price structure of olive oil and production inputs may change so much that it becomes very difficult to ascertain with adequate precision economic returns accruing from expanded olive orchards.

The CDF olive seedling project is expected to add the equivalent of 26,100 donums of productive olives. This means an additional output of some 5200 tons a year with an average market value of \$3.5 million. Dividing that by the net number of beneficiaries (i.e. after discounting for multiple purchases) the average gross income accruing to a single beneficiary when new orchards reach maturity is estimated at about \$ 565 per annum.

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Net income from olives is very difficult to ascertain. In a recent study by the researcher it was found that the average net income was around \$ 23 per donum\* (in good years \$ 55 per donum and in bad years minus \$ 10 per donum.) .

Olive culture spins off many other important economic returns which are too pervasive to quantify in monetary terms . Hired labour used in ploughing, picking and pruning is estimated at an average value of \$ 44 million per year. This constitutes a major economic activity in all olive producing areas.

Olive oil presses (about 315 in the West Bank) provide intensive employment for a considerable number of workers during the picking season, averaging at about 3200 workers and involving a capital outlay of some \$ 25 million.

The seedling distribution project provides business for four nurseries with a combined capital outlay of about \$ 3 million and a labour force of some 50 workers - almost more than the total number of hired workers employed on all West Bank poultry farms. A further rapid expansion in nurseries is imminent in the light of increasing local and foreign demand.

Distribution of seedlings during the planting season mobilizes many lorries and drivers for about two months. Likewise, many of the government extension and cooperative staff, who are chronically underworked and demoralized, participate forcefully and with noticeable enthusiasm in the seedling distribution project.

Olive wood of adequate thickness is used extensively in the tourist handicraft industries of Bethlehem-Jerusalem area. This is a flourishing economic sector which is likely to expand substantially, if effectively supported, into a major West Bank industry. A more active thrust towards rejuvenating aged olive orchards would help produce a large supply of wood for that purpose.

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\* Awartani, op. cit., p. 170 .

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To conclude, olive culture is not considered a major commercial type of agriculture, especially if compared with citrus, vegetables, grapes and poultry. On the other hand, it generates an aggregate economic activity which is far greater than any other type of farming or industrial activity. Consequently, the CDF seedling distribution project results in a direct linear expansion in all segments of the olive industry. This impact is further augmented by the distribution of seedlings of other kinds of fruits. But for reasons which we shall discuss later, this part of the project has been much less effective than that of olives

Cost outlay

Although both CDF and MCC deliver olive seedlings at the same price, the amount of subsidy paid by each may differ due to buying occasionally from different sources. In general, CDF subsidized olives at an average rate of about 36%, and other trees at about 47%. The average cost of the direct subsidy amounted to \$ 0.61 per seedling over the four year period. Table (6) shows a breakdown of direct costs incurred by CDF during the project period.

Table (6)  
CDF contribution to cost outlay  
(US \$)

	<u>Subsidy on price</u>	<u>% subsidy on delivery price</u>
1979	60,847	35
1980	62,549	41
1981	16,047	35*
1982	132,287	35*
Total	271,730	Avg.: 36

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\* The calculations for the last two seasons have been combined because a large proportion of the seedlings committed for the 1980-81 season could not be delivered in view of the extended delays in gaining approval for distribution.

It should be mentioned that the cost of the seedling project is greater than suggested in previous data. CDF incurs such over-head costs as the salary of the project coordinator for 2-3 months a year, the cost of using office vehicles, and the cost of a substantial amount of office work. The total cost of such items to CDF is estimated at around \$3000 per season (about \$0.25 per seedling). This brings up total CDF contribution to an average of \$0.86 per seedling.

The contribution of benefitting farmers, on the other hand, is also greater than direct cost, which amounts to \$1.2 per olive seedling (1982). Recipient farmers have to cover costs of transporting their seedlings to planting sites, digging holes, and conducting minimal reclamation of land prior to planting. These costs are estimated by respondents at about \$2.0 per seedling, but most of it is provided by beneficiaries themselves in the form of unpaid family labour. On the whole, therefore, the monetary value of CDF contribution to the cost of establishing a unit area of olive orchard does not exceed 30% of total costs.

#### Impact of subsidy

The impact of subsidy advanced by CDF on the success of the seedling distribution project was evaluated carefully through detailed interviews with respondent beneficiaries and technicians. When asked what they felt about the prices they paid for seedlings, 20% of respondent farmers rated them as high, 60% fair, and 20% thought that prices of olive seedlings were low. And when asked if the cost of seedlings might have been a reason for not having requested more of them, only 10% respondents replied positively. Both groups of respondents were then asked about the anticipated impact on demand for olive seedlings should subsidy on price be totally relaxed, or alternatively be raised to cover up to 50% of delivery price, instead of 30 - 40% at the present.

Respondent technicians agreed by a great majority that the amount of subsidy on prices does not carry a significant weight in deciding on the number of seedlings requested by farmers, at least as long as prices are kept at a sufficiently competitive level. Sampled beneficiaries, on the other hand, expressed a slightly more positive correlation between level of prices (as influenced by subsidies) and projected demand. But when asked to ascertain the relative importance of subsidy on price of seedlings i.e. after isolating it from the transportation service, its rating was not particularly high (see previous section on auxiliary services).

The relatively low rating of the impact of subsidy on the demand for seedlings can be viewed in other quantitative economic indicators. Counting on the average number of olive seedlings received by beneficiaries (45 seedlings), the total amount of subsidy channelled to a single beneficiary per season amounts approximately to \$ 38, including indirect subsidy. But this number of seedlings occupies roughly an area of three donums, which commits owners to an extensive volume of expenditure before their orchards commence commercial production. For example, ploughing cost alone amounts to \$ 95 per year (for three donums). Accordingly, a farmer's decision to grow more olives entails such profound financial and labour obligations that he is unlikely to give much weight when making that decision to the modest amount of subsidy advanced on the cost of seedlings. The practical ramifications for this argument will be discussed under the section on recommendations.

The net impact of the seedling distribution project, it should be emphasized, goes much beyond the amount of subsidies advanced to its beneficiaries. Through a balanced package of services involving preliminary contacts with nurseries, promoting tree culture through successful demonstrations, transporting seedlings to homes of interested customers, it was possible to achieve a remarkable achievement under unusual circumstances. As we shall see in a later section the credit for the success of this endeavour involved other groups, but the role of CDF, whether in the form of advancing subsidies or other services, has been central to its success.

PROCEDURAL EVALUATION

Selection of beneficiaries

Receiving and processing of applications for seedlings at a scale involving almost all West Bank villages is much beyond the administrative means available to CDF . Therefore this job has been delegated to the field staff of the Department of Agriculture and cooperative societies. Extension and cooperative agents communicate with farmers either directly or through local councils and mukhtars, who begin early in the season by listing names of applicants and desired quantities, and simultaneously receive due payments. Lists of names and corresponding payments are then channelled to the project coordinator.

The above-described mechanism has attained a pronounced efficiency in reaching out interested farmers in all regions. But there has been some confusion regarding the ceiling imposed on the number of olive seedlings allotted to a single beneficiary, usually not exceeding 50. The rationale behind this restriction was presumably to avoid transferring of a large amount of subsidy to wealthy landlords, and to hedge against the possibility of channelling subsidized seedlings to businessmen who would later sell them .

Measures taken to restrict the supply of seedlings to larger land owners have been strongly criticized. It is argued that the present olive growing euphoria should be effectively invested in maximizing the area under olives before a sharp change in this regard may take place. Furthermore, the economic activity generated by establishing larger orchards permeates to lower income strata in rural communities (e.g. in the form of ploughing and picking operations) to an extent which is not less significant than the returns accruing to landlords themselves. Besides , when larger farmers are not supplied with their requested seedlings, they are implicitly denied of the transportation service, which to them is more significant than the amount of subsidy on price.

### Constraints on supply

The seedling distribution project has had to cope with several constraints on supply. In the case of olives the problem stemmed basically from shortages arising from a substantial rise in demand for olive seedlings in Jordan, which has embarked since 1964 on a much more vigorous seedling distribution project through the assistance of UN specialized bodies and AID. This has boosted prices and caused a sharp decline in supply available to local customers. In recent years, however, several new nurseries have been established and production capacity of olive seedlings has risen to over 0.6 million seedlings, which is expected to satisfy local demand and export requirements. This will lead to the loosening of what has been largely a monopolistic market, thus helping in reducing prices and maintaining higher quality standards.

The supply situation for other kinds of seedlings is much more confused. Production of vine seedlings grafted on Phylloxera-resistant root stocks has been delegated to a local nursery, which seems to have failed in producing seedlings of the desired quality and quantity. This is an important bottleneck for vigorous expansion in vineyards, an objective which is strongly desired by Palestinian development economists. On the other hand, seedlings of almonds, apricots, and plums were produced locally only at a very limited scale, hence they are produced mainly from Israeli nurseries, often at the risk of buying the wrong variety.

Another difficulty on the supply side was posed by transportation problems, especially when the number of seedlings requested by farmers in a certain region was not large enough to justify sending a truck. That has reportedly caused some inconvenience to disadvantaged beneficiaries in remote areas.

### Quality of seedlings

The quality of olive seedlings was considered satisfactory by respondent specialists and beneficiaries. This relates to such visible signs as their general condition and freedom of pest infections. There are, however, some differences in quality between local nurseries in

such attributes as thickness of stem and amount of growth. There was a general feeling that Abdul-Handi's seedlings were better in both attributes.

The more serious question in regard to quality of olive seedlings relates to the variety used. The most popular variety is an indigenous strain known as Nabali, which is often grafted on less productive rootstocks. The main risk which frightens olive farmers is the possibility that the variety they receive is not Nabali. They will be sure of that only 4 - 5 years after the seedlings are planted. Should there be wide-scale complaints in this regard, that will constitute a devastating blow to the olive seedling project. In the light of markedly rising supply of seedlings, CDF exercise an increasing pressure on nurseries both in regard to quality and price.

Problems relating to quality were more pronounced in the case of other kinds of seedlings distributed by the CDF. Quality of grapes seedlings produced by Abu-Ghazaleh's nursery and distributed by voluntary agencies was considered unsatisfactory by extension agents farmers. Likewise, apricot seedlings procured from Israel and distributed by CDF two years ago turned to be of an undesirable variety instead of Hamawi, which is far more popular. The Department of Agriculture complains further that apricot seedlings were grafted on the wrong rootstock. In any case, the number of grape and apricot seedlings distributed by CDF is relatively small, and this experience offers valuable guidelines for the future.

To summarize, no quality problems have risen so far in regard to olive and almonds, but several such problems emerged relative to apricots and grapes. Consequently, it is felt imperative that voluntary agencies take more rigorous measures in regard to maintaining high quality standards( see later section on recommendations).

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### Role of project coordinator

The seedling distribution project is handled by the CDF through one of its agricultural staff, Mr. Khalil Aloul, in cooperation with the office Director and clerical staff. The role played by the project coordinator was vital to the success of the project since he integrated its segments in an efficient package, covering all steps from initial purchase to the final delivery of seedlings. This role was rated highly by respondent farmers and specialists who expressed satisfaction for the coordinator's efforts. He was described as dedicated, hard working, and easy to communicate with. Nevertheless, it is clear that the CDF seedling project coordinator is markedly over-worked during the distribution season. He handles a considerably larger number of seedlings than that of MCC, and has to serve a wider area which, on the average, is more than 65 miles away from his home.

### Relations with the Military Administration

Although the Military Government has not openly opposed the seedling distribution program, yet it has imposed a number of restrictions and has frequently raised questions about its continuation. The most serious problem had been that, in each of the four years of program, approval had been withheld until such a late point that doubts were raised whether approval could be given at all. This has created many difficulties in practice, and raised the possibility that cash advance to nurseries might be forfeited. The reasons given for the delay involve bureaucratic constraints which are applied heedless of the fact that seedlings must be distributed by a certain point in the seasons if they are to be planted at all.

There are several indications that a change in official attitudes is imminent and that the Military Administration is about to launch a more overtly hostile policy relative to the seedling project. This is expected to take many forms of restrictions. A new "nursery law" is about to be promulgated which, though officially aimed at regulating production and distribution of seedlings, may be taken as an excuse to restrain production

and possibly close down some nurseries. Most recently there has been serious talk among senior officials at Beit El about issuing licenses for all major types of farming, whereby the area of each is strictly limited to a certain quora. The practical ramifications of this measure could be very grave since that will offer Israeli authorities, effective means for directly curtailing "undesirable" patterns of agriculture.

An important leverage is still exercised by Israeli authorities through their annual clearance arrangements of the project. No one can confidently predict continued approval for coming seasons. It is more likely that the Military Government will try to implement some measures which would restrain the present pace of seedling distribution. This is an important consideration for both CDF and MCC in planning their distribution activities for the future, and it makes it even more necessary for them to indicate their intention to continue the seedling distribution program.

#### Relations with extension and cooperative staff

CDF has received extensive help from all district offices of the Extension and Cooperation Departments, mainly by acting as intermediaries with interested farmers. This involved signing in new orders, collecting sale proceeds and channelling them to the CDF project coordinator, and facilitating delivery of seedlings to homes of beneficiaries. Besides, extension staff provide technical help when that is needed, especially by new olive growers.

It is clear, therefore, that the services provided by extension staff constitute an integral part of the seedling distribution project and that their role is probably not less important to the success of the project than that played by voluntary agencies. The importance of these services has been duly acknowledged by the coordinating staff of CDF and MCC, who have also noted that cooperating extension agents are usually not rewarded for the intensive effort they put into the project.

Maintaining active and warm working relations with extension staff is of critical importance to the success of this project. Achieving this objective may require allowing for some form of non-monetary remuneration for some extension technicians, most fittingly by providing them with training opportunities in a seminar organized by voluntary agencies.

Services of extension and cooperative staff other than those related to seedling distribution were poorly rated by beneficiary farmers. This relates, for instance, to the lack of assistance in demonstrating chemical weed control techniques, introducing small tractors able to plough hilly orchards, promoting fertilization (practically none is applied at the present), and facilitating more effective rejuvenation pruning. The main reason for not getting more actively involved in these essential services is the lack of budget allocations arising from official increasing disinterest in olives and tree culture.

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## PROSPECTS AND RECOMMENDATIONS

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### 1.0 Scale of operation

The demand for olive seedlings is expected to undergo a further rise during the coming 2 - 3 seasons before it cools off to a stable pace. The rise in demand will be particularly pronounced for olives due to many factors, most importantly, the following :

- a. A large proportion of land is still available for this purpose. It is estimated that the West Bank contains about 300,000 donums which are of such a topography and rainfall that permits growing only a narrow range of crops, most commonly olives. The potentially fit area amounts to slightly less than one third of the area presently under olives.
  - b. The olive tree is noticeably versatile in regard to its cultural requirements. Under adverse conditions farmers can curtail their services drastically to the point of considering their olive orchards merely as unattended forests. But unlike all other fruit trees they can survive rough intervals and be rejuvenated easily under better circumstances.
  - c. Olive culture is markedly flexible on its labour requirement, whether in terms of amount of labour input or level of skill. Consequently, olive farming could be feasible even when wages are high, as they are now, because olives are the residual claimant for available labour supply.
  - d. Notwithstanding its modest net monetary returns, olive culture provides rural communities with a staple oil which otherwise would cost much to purchase.
  - e. Production and delivery mechanics of the olive seedling distribution project have evolved so efficiently that they liquidated most of the procedural problems which farmers faced for a long time.
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On the other hand, the thrust towards growing olives is likely to be thwarted by counter-measures taken by Israeli authorities, which conceive of any form of tangible land use, especially constructing of buildings and fruit tree orchards, as potential obstacles to its expansionary land and confiscation policies.

The above-described variables make it too conjectural to envisage accurate changes in supply and demand for olive seedlings. However, assuming a continuation in the present state of affairs, the researcher expects a steady rise in the number of seedlings distributed upto 0.3 million in 1983 (50% increase over 1982) and 0.5 million in 1984. Demand will settle thereafter in the range of 0.2 - 0.3 million per season for 3 - 5 more years.

In view of all pertinent facts, the researcher proposes the following recommendations regarding the scale of operation in the seedling distribution project :

- 1.1 Unrestricted expansion in olive growing on all land in classes III and IV, except those receiving less than 300 millimetres of rain (12 inches). CDF and MCC are recommended to proceed at a larger scale in the distribution of olive seedlings, possibly exceeding 250 thousand seedlings in 1983. No problems are anticipated in securing the needed supply in the light of the greatly expanded output of local nurseries.
- 1.2 CDF and MCC are recommended to ask nursery owners give a guarantee that the olive variety they handle is Nabali. Should it turn out to be so nursery owners should be liable for indemnity.
- 1.3 Further efforts should be exerted to promote the production and distribution of grape seedlings of desirable varieties (mostly late maturing) grafted on Phylloxera-resistant rootstocks. This necessitates a more active CDF involvement with producing nurseries, both technically and financially. Past experience with Abu Ghazaleh's nursery should be very helpful in redressing the project on a more efficient basis.

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- 1.4 CDF is recommended to initiate contractual arrangements with qualified nurseries for the purpose of producing apricot seedlings of the Hamawi variety and figs of desirable varieties at a pilot scale of some 10,000 seedlings per year of each. Fig orchards suffer at the present of a drastic decline as a result of an acute and epidemic infection with the fig scally insect (*Ceroplastes rusci*) and the stem borer (*Batocera rufonaculata*). CDF can assist growers in two ways, firstly, by helping them control fig pests, and secondly, by distributing seedlings on interested growers.
- 1.5 No sizeable expansion in plum orchards is foreseen due to occasionally severe problems of surplus produce. There is room, however, for distributing a relatively large number of seedlings in northern districts, mainly for purposes of family consumption.
- 1.6 Almonds are grown at a wide scale without much need for help, because they are easy to grow by direct sowing of seeds. But voluntary agencies could do a lot to assist farmers in introducing improved varieties.
- 1.7 For the sake of better land utilization and in order to save on the cost of cultural operations and secure a cash income during the long interval it takes for olive orchards to commence commercial production, the researcher proposes encouraging growers in certain areas to interplant olives with grapes raised in the creeping method. This practice has been promoted in Jordan by FAO and UNDP with a marked success. It is recommended that CDF take active interest in disseminating this practice at a limited scale by providing olive growers with grape seedlings at a subsidized price. In contrast, interplanting olives with almonds, as widely practiced in Tulkarm district, should be discouraged due to resulting damage on olives.

2.0 Distribution policies and procedures

- 2.1 CDF is urged to lift all restrictions on the number of olive seedlings distributed. Ensuing financial obligations are not likely to rise substantially because of subsidy adjustments proposed below.
- 2.2 Distribution of seedlings should commence few weeks earlier, preferably by the first week of January. Otherwise, distribution may have to continue late in the season, with the possibility of suffering of an early stoppage of rainfall

3.0 Subsidy and prices

- 3.1 The researcher recommends a gradual decrease in the proportion of subsidy which has been assumed by CDF. If combined with other measures to increase the number of seedlings sold, such as the elimination of the ceiling on the number available to each farmer, there is likely to be a sustained increase in the total number distributed. Furthermore, it can be assumed that competition among seedling nurseries, which will soon result from the recent establishment of additional nurseries, will help to keep prices relatively low, so that the decreasing CDF subsidy will not result in an unduly large increase in the cost of seedlings. At any rate, CDF should seek to maintain the price at the same or only at gradually increasing levels so that farmers will have stable expectations and confidence that the program will continue.

Nevertheless, there is a strong case for initiating a system of double-tier prices whereby quantities of up to 50 seedlings are sold at subsidized rates, and those above that limit are supplied at cost price.

- 3.2 Cost of procurement arrangements and transportation should be covered by CDF and MCC on all types of seedlings they handle. This is an important form of indirect subsidy which is likely to be more effective in disseminating tree seedlings than subsidy on price. It is strongly recommended that this service be offered free to all interested farmers.
- 3.3 Subsidy on grape seedlings should be maintained, and possibly raised, in an effort to get farmers to use the recommended types of seedlings at a wider scale, in lieu of direct planting of pruned cuttings. No subsidy on prices is recommended for apricots and figs.

#### 4.0 Supportive services

The seedling distribution project should be augmented by a number of auxiliary services which are aimed at achieving its broader objectives of raising farmers' incomes and strengthening their attachment to their land. Raising profitability of orchards is an important step in this regard. The following measures are recommended for that purpose.

- 4.1 Providing farmers with technical and financial help in reclaiming hilly land is an important prerequisite for more productive orchards. But due to the excessively high cost of reclamation and marginal profitability of rainfed orchards it is recommended that reclamation practices be restricted to the bare minimum, especially in regard to excavation operations and construction of stone walls. And in any case it is not recommended that CDF get involved in this kind of project, as long as there are more worthy and less momentous options.
- 4.2 In contrast to land reclamation, development of agricultural roads deserves very special attention. Passable roads expedite modernization of production practices and facilitate efficient marketing of produce. Furthermore, aid advanced for this purpose entails a regional impact involving a large number of farmers and serving a variety of purposes.

It is strongly recommended that CDF offers greater support for the purpose of constructing agricultural roads. Priority should be given to those areas where CDF considers other forms of active involvement, such as distributing a large number of seedlings or introducing weedkillers, picking hormones, and orchard-type tractors.

- 4.3 The intensification of tree culture in rainfed area requires a larger supply of water for two vital purposes : irrigating seedlings early in their life and in spraying of weedkillers and other pesticides. It is recommended that CDF expands its current program of cistern construction to cover a much wider area, and to tie that service with the seedling distribution project. Priority should be given to the reconstruction of deserted cisterns instead of digging new ones.
- 4.4 Assisting farmers in reducing tillage costs helps raise their profit margins and accentuates their interest in farming. This could be achieved by introducing orchard-type tractors which are fit for operation on moderately hilly slopes. Tractor ploughing through custom arrangements may cost about half that by animals. CDF can provide a great help in that direction by facilitating the introduction of the proper kinds of tractors at a pilot scale. Eligible groups of farmers will be offered a loan for this purpose in the range of \$15 - 20 thousand.
- 4.5 Another effective measure which should be considered for this purpose is the use of weedkillers as a partial substitute for ploughing , especially that the suggested technology has been already tried with considerable success. CDF could be very helpful in this regard by conducting a large number of demonstrations in cooperation with qualified technicians from the Department of Agriculture and local universities. Furthermore, CDF could

could help in setting up few spraying service units which would perform spraying operations to neighbouring farmers through custom arrangements. Should CDF help in introducing this innovation through pilot projects, that may constitute a major breakthrough in developing West Bank rainfed orchards.

#### 5.0 Relations with other institutions

- 5.1 Because of evidently growing Israeli opposition to the seedling distribution project, it is strongly recommended that voluntary agencies try to distribute as many seedlings as they possibly can before Israeli authorities impose more effective restrictions in this regard.
- 5.2 Relations between CDF and extension staff should be carefully maintained and actively cultivated. Besides continued coordination with extension staff in processing of applications and delivering requested seedlings, CDF should try accomplish the following:
- a. Maintain close and constant contacts with extension agents for the purpose of identifying local needs and recommended corrective measures.
  - b. Designate one or more senior horticulturists from the extension staff as seasonal consultants to CDF on technical matters relating to seedling distribution. This is intended to safeguard against grave mistakes which may entail serious backlash.
- 5.3 Voluntary agencies (CDF and MCC) are urged to sponsor some form of an annual seminar to which they invite all concerned extension and cooperative personnel. Such a seminar would last for two days during which participants will discuss important issues relating to horticulture in the occupied territories. Visiting lecturers, mostly from Jordan and the UNDP, will be invited to give relevant talks. This activity will constitute a form of remuneration to cooperating staff, and in the same time it fills a small gap in a badly deficient area, namely, service training of extension personnel.
- 5.4 CDF's continued cooperations with MCC in the seedling distribution project is essential for its success. This cooperation can take several forms , such as :

- a. A more functional geographic division of activities whereby each agency would serve certain district .
- b. Better coordination of purchasing arrangements in an effort to reduce prices and adopt effective quality control measures.
- c. Both agencies should participate in meeting the costs of a part-time consultant horticulturist (see 5.2 b) and the annual seminar on rainfed horticulture (see 5.3).

6.0 Project management

6.1 Due to the rapid expansion in the seedling distribution project and the possibility that CDF might get more actively involved in related auxiliary services. It is proposed that CDF appoints another horticulturist to work in collaboration with the present project coordinator. For practical reasons, it is strongly recommended that the new recruit be a resident of northern districts.

6.2 Raising the technical aptitude of the present coordinator in the technology of rainfed horticulture is very helpful in improving the services rendered by CDF, especially if it is decided that this agency would expand its activities in this field. An important step in this regard is providing the project coordinator with carefully tailored training programs. It is recommended to start out by offering him 3 - 4 weeks of training in Jordan where he would be affiliated with a similar project sponsored by FAO and World Food Program.