AN ISSUES ASSESSMENT FOR THE USAID/GOVERNMENT OF EL SALVADOR

WATER MANAGEMENT PROJECT
(Project No. 519-0303)

Submitted to:

USAID/El Salvador
San Salvador, El Salvador

By:

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PREFACE

This issues assessment of the El Salvador Water Management Project has been prepared by Checchi and Company under the terms of an IQC delivery order from the United States Agency for International Development. The evaluation team was composed of the following individuals:

Donald R. Fiester - Team Leader

Stephen R. Morgan - Private Sector Specialist

Field work in El Salvador was carried out over a four-week period in November and December of 1987. The team presented a draft report to USAID/El Salvador before departing and participated in a debriefing session, during which several valuable suggestions and corrections of fact were made by the staff of USAID. These were followed by written comments received after the team returned to the U.S. Comments have been considered and included in this report where appropriate. However, the opinions and recommendations expressed are those of the Checchi evaluation team.

ACRONYMS AND ABBREVIATIONS

ARSP	Private Sector Irrigation Association Asociación para Riego del Sector Privado
ASPENT	Salvadorean Association of Producers and Exporters of Non-traditional Products Asociación Salvadorena de Productores Exportadores de Productos No Tradiciaonales
BH	Mortgage Bank Banco Hipotecario
CENCAP	National Training Center Centro Nacional de Capacitación
CENTA	Center for Agricultural Technology Centro de Technología Agropecuaria
DGRD	General Directorate for Irrigation and Drainage Dirección General de Riego y Drenaje
ENA	National School of Agriculture Escuela Nacional de Agricultura
FUSADES	Salvadoran Foundation for Economic and Social Development Fundación Salvadorena para el Desarollo Económico y Social
GOES	Government of El Salvador Gobierno de El Salvador
MAG	Ministry of Agriculture Ministerio de Agricultura
OA	Water Office Oficina de Agua
OCOPROYMAG	AID Project Coordinating Office Oficina Coordinora de Proyectos MAG-AID
OSPA	Agricultural Sector Planning Office Oficina Sectorial de Planificación Agropecuaria
PP	Project Paper
WS II	Water Synthesis II Program (AID/ Washington technical support Project)
USAID	U.S. Agency for International Development Agencia para el Desarollo Internacional de Los Estados Unidos

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EXECUTIVE SUMMARY

A. INTRODUCTION

This represents the first in a series of planned evaluations of the USAID/GOES Water Management Project (Project No. 519-0303). The purpose of the Project, which was authorized in August 1985, is to promote diversified irrigated farming in El Salvador through institutional strengthening, technical transfer, training, and credit assistance. Project activities include:

- o Assistance to public sector irrigation planning, extension and training institutions to provide improved support to farm-level water management and irrigated agriculture. Assistance is being provided to six GOES agencies in the areas of policy development, planning, and systems management. In addition, the public sector component seeks to strengthen the capabilities of the national extension service to train farmers and to initiate a university-level curriculum in irrigated agriculture.

- o Assistance to private firms engaged in or directly connected with intensive agriculture and export marketing research and development. This assistance is aimed at promoting new investment through: (1) provision of technical assistance, credit, and training to farmers for the production of irrigated fruits and vegetables; (2) financing new or expanded packing and processing plants; and (3) export marketing assistance. FUSADES is the implementing organization for the private sector component.

The evaluation was carried out by Checchi and Company Consulting, Inc. under IQC No. PDC-0085-I-00-6097-00. Donald Fiester (Team Leader) and Stephen Morgan (Private Sector Specialist) made up the evaluation team.

B. PURPOSE OF THE EVALUATION

The overall purpose of the evaluation was to examine selected design elements of the Water Management Project to determine if they should be reprogrammed, under present and expected circumstances. The evaluation team was instructed to address the following five issues, reflecting USAID's concern that the Project may have been over-designed and that certain design assumptions, particularly those regarding complementarity between Project components, may no longer be valid:

1. Is ENA's role as defined in the PP still valid given administrative and budgetary changes which have occurred in the past year? Will it be able to carry out its responsibilities under the Project?

2. What is or should be CORPREX's role in the implementation of the Project?

3. Can the objectives of the private sector component be met with greater efficiency and less potential conflict of interest under FUSADES' proposed restructuring of implementation roles and responsibilities?

4. Is the Export Market Risk Guarantee (EMRG) a mechanism of the R&D Credit Fund necessary?

5. What additional incentives, if any, should be given to irrigation equipment-supply firms to increase their promotional activities?

These issues were selected because both the public and private sector components of the Project had been slow to gain momentum. The planned reorganization of FUSADES, as well as changes proposed in the roles of CORPREX and DIVAGRO, also prompted USAID to request an outside review at this time. In keeping with the issue-oriented nature of the assignment, the evaluation team did not examine all aspects of Project implementation; Project staff performance, for example, was not taken into consideration.

C. METHODOLOGY

Field work in El Salvador was carried out from November 16 to December 10, 1987. Pertinent background documents were reviewed and 17 meetings were held with 37 people in USAID and the major private and public sector organizations involved in the Project. A draft report was submitted to USAID/El Salvador prior to the team's departure. This final report incorporates the comments of USAID and GOES officials on the draft.

D. GENERAL OBSERVATIONS

This is one of the most important Projects in USAID/El Salvador's portfolio in terms of potential for encouraging agricultural entrepreneurs, expanding employment, improving the use of scarce land and generating foreign exchange. It can improve the country's level of technical expertise and stimulate cooperation between its private and public sectors. The Project should lead to the introduction of new labor-intensive, high-profit, non-traditional export crops.

El Salvador does not have much of a tradition of irrigated agriculture. An estimated 200,000 Ha. are available for cultivation during the dry season. Consequently, the Project calls for expansion of training programs for technicians and farmers in water management, and for augmenting the capabilities of irrigation equipment suppliers to design, install and maintain systems. The Project should also serve to stimulate private firms to invest in new processing facilities and to market new crops abroad. Government agencies are to be strengthened in order to complement private sector efforts. They are to be provided with training, technical assistance and appropriate equipment.

E. FINDINGS AND RECOMMENDATIONS

ISSUE NO. 1: Is ENA's role as defined in the Project Paper still valid given administrative and budgetary changes which have occurred in the past year? Will it be able to carry out its responsibilities under the Project?

RECOMMENDATIONS:

1. There is a definite need for and interest in irrigation training at both the B.Sc. and vocational levels in El Salvador. One is not a substitute for the other.

2. ENA is the best location for this training due to its physical plant and theoretical educational experience. However, it cannot grant B.Sc. degrees (Licenciatura) without a change in its statutes.

3. Since time is of the essence in starting the new B.Sc. program in irrigated agriculture, the Government or ENA must provide to USAID, in writing, evidence that ENA will be able to grant the B.Sc. in irrigated agriculture by July 31, 1988. As a safeguard, USAID should organize a working committee to select an alternate institution able to assume the training function if ENA cannot provide this assurance.

4. The Government must permit approved staff members to go to the U.S. for graduate training no later than March 31, 1988. The Government must also agree to continue their salaries while they are abroad and assure that they will be reincorporated into the ENA staff upon their return.

5. Since ENA is the principal source of extension agents in El Salvador, it should include in-depth training in irrigated agriculture in its vocational program for all students.

6. Due to the financial problems that ENA is now experiencing, USAID should conduct an in-depth analysis of ENA's financial situation and management needs as a basis for discussions with the school and the Government.

DISCUSSION:

El Salvador lacks technicians trained in water management, crop production and export marketing, at both the university and vocational levels. If this Project is a success, several hundred appropriately trained technicians will be needed. There is a strong interest among the students at ENA for such training, and the school has the essential classroom and field facilities. However, it needs the modern irrigation equipment that is to be provided through the Project.

ENA is facing three major problems that must be resolved soon if it is to grant university degrees: (a) it must amend its statutes so that it is legally able to grant the B.Sc. degree; (b) its staff must be permitted by the Government to go abroad for advanced training; and (c) it must overcome any existing financial problems that could impede Project activities.

A mechanism exists in ENA's charter which permits the school to amend its statutes in order to grant university degrees. USAID should identify another educational institution to replace ENA in the event this amendment cannot be processed within a reasonable amount of time.

USAID must help to resolve with the Government problems surrounding ENA staff training. At present, instructors cannot leave the country for long-term training; their salaries are not continued while they are away.

The evaluators were told that ENA was experiencing financial problems that will become more serious with the termination of USAID support through another Project. An analysis of this situation is warranted to determine the magnitude and scope of the school's financial problems, their impact on this Project, and possible solutions.

ISSUE NO. 2: What is or should be CORPREX's role in the implementation of the Project?

RECOMMENDATIONS:

1. The support to CORPREX originally envisioned for the Project should not be initiated. The functions that were to be transferred to CORPREX should continue to be handled by FUSADES.

2. The Loan Committee of FUSADES should have the broadest possible representation from industry as well as from FUSADES.

3. FUSADES and USAID should study the advisability of providing funds to CORPREX for training farmers in irrigated agriculture. It is hoped that CORPREX will broaden its membership to represent all sectors in the perishable and processed food export field.

DISCUSSION:

CORPREX was created to manage the Project's loan portfolio and to assist farmers, packers, processors and vendors to increase exports of non-traditional products. The process of incorporating CORPREX, begun over two years ago, is still not completed. CORPREX's membership consists largely of irrigation equipment suppliers. This raises issues of conflict of interest with respect to CORPREX's role in granting loans for irrigation equipment, and calls into question CORPREX's objectivity in Project implementation.

FUSADES has developed most of the institutional capacity needed to manage and operate the Project. To shift management responsibility to CORPREX at this point would cause yet another setback in the Project, duplicate efforts, and

increase administrative costs. CORPREX could, on the other hand, play a role in promoting irrigated agriculture and in training farmers in all phases of growing, processing and selling produce in foreign markets. For these purposes, FUSADES and USAID may wish to consider providing modest financial and technical assistance to CORPREX.

ISSUE NO. 3: Can the objectives of the private sector component be met with greater efficiency and less potential conflict of interests under FUSADES' proposed restructuring of implementation roles and responsibilities? Recommendations are provided separately for each of eight FUSADES' proposals.

PROPOSAL: Permit FUSADES to receive the total interest derived from the lending operation.

RECOMMENDATIONS:

1. No more than 50% of the interest from loans, net of payments to the Mortgage Bank (Banco Hipotecario) for its costs in handling the loan portfolio, should be made available to FUSADES for operational expenses. The remaining interest should go back into the Loan Fund.

2. USAID should encourage FUSADES to identify other sources of funds in order to expand its services to the private sector.

DISCUSSION:

In the judgement of the evaluation team, there is merit in increasing the size of the loan portfolio to cover demand and any losses resulting from the Marketing Risk Guarantee Mechanism. The team did not find evidence that FUSADES' Project operations were being hampered by a lack of funds. The team's recommendations essentially follow the current system for financing FUSADES' operations under the Project.

PROPOSAL: Permit FUSADES the flexibility of investing 51% of the capital required in a Project.

RECOMMENDATION:

FUSADES should not be permitted to take an equity position in any Project funded under the loan program.

DISCUSSION:

At present, FUSADES is not permitted to invest in any Project-funded operation. As proposed, FUSADES could grant a loan to a Project and operate it for up to ten years. This would change the character of FUSADES from a non-profit, development institution to one that competes directly with the private sector that it is committed to help, and could bring about a conflict of interest situation.

PROPOSAL: Eliminate the requirement that irrigation equipment dealers guarantee 20% of any FUSADES-approved loan that provides funds for the purchase of a dealer's equipment.

RECOMMENDATION:

1. The 20% Risk Guarantee imposed on equipment suppliers should be removed at once.

2. All input suppliers should be advised of this change and encouraged to lower their equipment prices to Project borrowers accordingly.

DISCUSSION:

Suppliers should not be held responsible for the equipment loans. FUSADES studies each loan proposal carefully and analyzes the creditworthiness of prospective clients. FUSADES also takes the risk for the loan. The removal of the guarantee requirement may also reduce equipment prices, since some suppliers reportedly are increasing their prices to cover the 20% risk.

PROPOSAL: Modify the requirement for five Model Pilot Projects under Model "B" loans.

RECOMMENDATIONS:

1. USAID should drop the requirement for five "pilot Projects" to permit FUSADES to finance as many Projects as can qualify.

2. FUSADES should solicit Project proposals from different areas of the country to encourage broader participation.

DISCUSSION:

Under its present rm of operation, FUSADES will surpass the required numbe of Model B pilot Projects and will do so in a responsible manner. FUSADES should be encouraged to seek Project opportunities in other areas of the country in order to generate employment and to improve distribution of Project benefits. Some of these areas, moreover, are capable of producing products that are not now being financed, but for which there are good markets.

PROPOSAL: Eliminate the public bidding requirement for the selection of operators of pilot firms, when requested.

RECOMMENDATION:

Competitive bidding for the pilot Projects should be not be required.

DISCUSSION:

If the proposal to drop the requirement for five Model B pilot Projects is accepted as recommended, then this competitive bidding requirement will be superfluous.

PROPOSAL: Reclassify the resources assigned to the R&D Loan Fund and extend the final contribution date to December 31, 1992.

RECOMMENDATIONS:

1. USAID should amend to Project agreement to incorporate proposed line item adjustments in the budget for the Loan Portfolio.

2. It is too early to determine if an extension in the Project completion date is warranted. It is recommended that this decision be postponed until the mid-term evaluation.

DISCUSSION:

FUSADES has proposed several line item adjustments to the Project budget for the credit component. These include an increase in funds available for "Model B" lending (including loans for packing and processing plants as well as irrigation systems) from $1.75 million to $4.0 million, due to high demand; and corresponding reductions in the production credit and marketing credit funds. In the evaluators' judgment, the requested changes are reasonable and will in fact strengthen the Project since the increased investment in processing facilities would increase the "market pull" for production.

Because of strong demand for Project credit facilities, it is quite possible that loan funds will be exhausted before the Project Completion Date. This issue should be examined by the mid-term evaluation, when there will be more evidence on which to base a decision.

PROPOSAL: Increase the amount of funds held in dollars by FUSADES to permit the purchase of equipment offshore.

RECOMMENDATIONS:

1. FUSADES should have authority to maintain sufficient funds in a dollar account to finance off-shore purchases of specialized equipment for Model

"B" loan packing sheds, processing plant equipment and other materials required for the production of non-traditional exports.

2. The dollar account should also be available for the purchase of equipment through local suppliers for loan recipients under Model "A".

3. A study should be undertaken to evaluate how effective local equipment suppliers are in maintaining spare parts inventories and in repairing the equipment that they sell.

DISCUSSION:

The evaluation team could find nothing in the Project documentation that would limit the amount of funds that could be held in dollars for the purchase of equipment under approved loans. Dollars must currently be obtained from the Central Bank, a process which takes about six weeks and delays deliveries of locally-purchased irrigation equipment and spare parts. It may also restrict the purchase of essential specialized packing plant and processing machinery which is presently unavailable in El Salvador.

PROPOSAL: Increase the limit of authority of FUSADES to authorize activities under the Project.

RECOMMENDATIONS:

1. The decision to increase FUSADES' lending authority should be deferred until USAID is fully confident that the organization has the capability to administer larger amounts of U.S. funds than at present. This can be determined when the reorganization of FUSADES has been completed.

2. USAID should review its contract approval process to assure that, in emergencies, technical assistance can be obtained as rapidly as possible.

DISCUSSION:

FUSADES now has authority to let technical assistance contracts for amounts up to $50,000, and wants this limit to be increased to $100,000. The evaluation team could find no evidence of problems in securing needed technical assistance within the present limit. Furthermore, FUSADES may soon be reorganized and its capability for adhering to USAID contracting regulations in the future is unknown. For these reasons, an increase in the lending limit at this time is not justified. However, in the event that a problem arises that requires contracting an expert on short notice, USAID should review its contracting procedures to permit FUSADES to engage the required expertise.

ISSUE NO. 4: Is the Export Market Risk Guarantee Mechanism of the R&D Loan Fund necessary?

RECOMMENDATIONS:

1. The Project is too new to determine whether or not the Market Risk Guarantee Mechanism will be critical to its success. The mechanism should be continued at least until the mid-term evaluation, at which time more information will be available on which to base judgments as to its necessity.

2. USAID and FUSADES should conduct an in-depth study to ascertain if a crop insurance program could replace the Market Risk Guarantee in the future.

DISCUSSION:

The Project provides a mechanism to reduce borrower risks whereby the Project Loan Fund assumes one-half of borrowers' equipment loan indebtedness if borrowers could prove that they are unable to repay due to unusual conditions in foreign markets. The fact that this mechanism has not as yet been tested (virtually no Project-related exports have been made to date) is insufficient reason to eliminate it at this time, since it may be needed to avert bad publicity for the Project. Nevertheless, at some time in the future the cost of risk avoidance should be shared by the borrower, possibly through a crop insurance system.

ISSUE NO. 5: <u>What additional incentives, if any, should be given to irrigation equipment supply firms to increase their promotional activities?</u>

RECOMMENDATIONS:

1. USAID should authorize FUSADES to maintain a dollar account to finance equipment purchased abroad for both Model "A" and "B" loans.

2. An in-depth evaluation should be conducted of the customs duties system as it pertains to irrigation equipment. This study should also address the problem of customs agents' classification of certain kinds of equipment and inputs to assure that the taxes are appropriate.

3. The feasibility of a bonded warehouse should be examined as a means of holding suppliers' equipment inventories and spare parts until sold.

4. A study should be conducted of possibilities for selecting only a few well-known, reliable brands of equipment to be purchased with FUSADES loans. Concurrently, about five reputable dealers could be selected to sell this equipment. This would serve to reduce inventories and ensure adequate maintenance systems.

5. FUSADES should be permitted to make loans for furrow irrigation systems in conjunction with both Model A and Model B loans.

6. Purchase of land-leveling equipment and land-leveling costs should be authorized under Project loans.

7. Advertising and promotion of the Project should be greatly expanded in order to attract more farmers and potential processors. If funds presently available for this purpose are inadequate, they should be increased.

DISCUSSION:

A number of direct and indirect incentives have been suggested to increase participation in the Project by equipment suppliers and others. As previously stated, a dollar account would help suppliers to purchase imported equipment and spare parts. In the judgment of the evaluation team, there are too many brands of equipment--some good and some very poor--being offered to prospective loan recipients. If the number of prospective brands and dealers were reduced, it would be easier to ensure adequate demonstration supplies and sales inventories. It would also be easier to maintain stocks of spare parts and provide good maintenance.

The team noted that suppliers were importing and storing their inventories on their own accounts. By using a bonded warehouse, either public or private, suppliers could reduce their inventory costs.

Customs duties for some irrigation system components are extremely high. Duties on other imported components may also be high because incorrect "use" categories are assigned by customs agents. This situation should be reviewed and findings should be discussed with proper Government officials to obtain needed changes.

Furrow irrigation, the most widely used and economical system for growing crops, is not authorized under the Project. This irrigation system should be permitted to avoid placing Salvadoran farmers at a competitive disadvantage vis-a-vis producers in other countries.

The Project needs to be promoted more aggressively with all parties involved, not just irrigation suppliers. It should be explained and sold to the public via newspapers, radio, television and word of mouth. Emphasis should be placed in promotional materials on its importance to the national economy as well as on opportunities for personal gain by those participating.

F. OTHER IMPORTANT OBSERVATIONS

During the field work for this study, the evaluation team noted some other problems and activities which merit attention. These are:

1. Need for improved public and private sector coordination. The team observed that there was no formal means for the public and private organizations involved in the Project to meet formally and resolve common problems. The team also found a desire at the technical level of the public sector to collaborate and cooperate with the private sector. Regular monthly meetings should be arranged between representatives of both sectors to share information on current activities, problems, and

accomplishments. Other means should be sought to further private/public sector collaboration, which will be critical to the Project's success.

2. Improving CENTA's technical capacity. There are no funds in the Project for upgrading the staff of CENTA, El Salvador's principal research institution, in irrigated fruit and vegetable production, processing and exporting. These technical areas are so important to the nation's future that local specialists should be trained to conduct applied research, train trainers, direct programs and evolve new, well-adapted types of high-demand plants for the country's farmers. The technical skills needed in a number of these areas have already been identified.

3. Budget year. At present, the Project operates on a calendar year, which is not appropriate for managing research on crops planted in October and harvested in March. After December 31, government technicians will have no funds until their new work plans are approved by USAID. The team also noted that some work plans presented in March 1987 had not been approved by November. It is suggested that the Project's fiscal year be changed to July 1 - June 30 to circumvent this problem, at least partially.

4. Market news information. The team observed that FUSADES now receives PRONET, the market news and price reporting service from the U.S. It is suggested that this market information be broadcast via radio and television daily. This will help to advertise the Project, and will assist farmers with their planting decisions.

5. CENTA's readiness to conduct research. The team found the attitude of government technicians toward the Project to be positive. CENTA managers in particular expressed a desire to cooperate and to put technicians in the field this year. Since the necessary equipment has not yet been ordered, CENTA will need authorization to rent equipment in order to get research activities underway. USAID and FUSADES should provide assistance as needed to facilitate CENTA's involvement.

G. LESSONS LEARNED

The team discussed a number of issues with USAID staff and Salvadoran government officials, executives and farmers. Among the most pertinent of the issues were:

1. Time Allotted to the Project. Changing cropping patterns in El Salvador requires much more time than has been allotted to this Project. Coordination between private and public sectors is difficult to establish. Changes taking place throughout the agricultural sector have impeded progress. Investor confidence is low. Similar efforts in the future should be planned to last at least eight years.

2. Initial Availability of Technical Assistance. Farmer interest in this effort waned during the two years between Project approval and the arrival of long-term U.S. advisors. Expertise has not been available on a continuous basis. When USAID lacks staff technicians it should make

every effort to hire capable specialists immediately upon Project commencement.

3. Public and Private Sector Cooperation. Public and private sector parties involved this Project have begun to cooperate only recently. After early meetings representatives of both sectors went their separate ways. vehicles and equipment promised. To overcome friction USAID should work constantly with both sectors.

4. Keeping Salvadoran Officials Informed of the Project. Senior staff turnover is high in the Salvadoran government. Most (but not all) appropriate functionaries were presented copies of the Project Agreement shortly after its approval. Many of their successors, however, have not been informed of the Project. USAID should not assume that new Salvadoran personnel have been fully briefed, and stand ready to provide copies of important Project documents.

5. Continuity of USAID Administration. One person within USAID should hold responsibility for the Project. He or she should be at post for at least four years during the implementation period.

AN ISSUES ASSESSMENT FOR THE USAID/GOVERNMENT OF EL SALVADOR WATER MANAGEMENT PROJECT (Project No. 519-0303)

Section One

INTRODUCTION

A. Project Background

Between 1960 and 1978, El Salvador's GDP grew by an impressive 5.4% annually. Contributing to this growth were, first, a favorable world economic situation and the rapid expansion of the Central American Common Market; second, expansion of urban industry; and third, a significant increase in agricultural output.

In the early 1980's, GDP declined sharply as international interest rates rose and world prices for traditional Salvadoran exports declined. El Salvador lost two of its major regional markets, Nicaragua and Costa Rica, due to friction with Nicaragua. By the end of 1983, GDP had dropped by 33% and exports by 35% from 1978 levels.

Agriculture is the mainstay of the Salvadoran economy. It accounts for 25% of GDP, provides employment for over 50% of the nation's work force and generates over 60% of export earnings. From 1978 to the mid-1980's, agricultural output fell by 18%. Rural unemployment, already at 55-60% in the late 1970's, increased to more than 75% during some months in 1983. Adding to the sector's economic difficulties were the impact of the Government's land reform program and the nationalization of coffee and sugar exports. Producer income and agricultural foreign exchange earnings have declined, along with availability of capital and willingness to invest. A shortage of arable land presents formidable obstacles to sustained expansion. Income per hectare is too low to offer much hope to rural residents; with a labor supply of 600 person-days per hectare per year, the nation's cropping pattern demands only 90 person-days of work. Coffee, a highly volatile commodity, provides half of the total jobs.

In late 1984, the Government of El Salvador and USAID began discussions on a new Project that would address problems of the country's rural sector. It was agreed that a crash program was needed that would focus on generating employment and rural income, increasing foreign exchange earnings and expanding the use of irrigation for the production of export crops.

An eight-man Project design team began work in El Salvador in early 1985. The team, headed by Dr. Sam Daines, included specialists in a number of areas related to water resources and agribusiness. The resulting Water Management Project was authorized by USAID on September 28, 1985.

The Project Paper correctly identified the constraints to rural development in El Salvador, noted above, which current rural investment policies did not address. The PP also described opportunities in the production

of irrigated, high-value, labor-intensive non-traditional crops for export.

El Salvador holds a comparative advantage in winter fruits and vegetables for the U.S. and European markets. Irrigation is one of the few options available to open up new land for cultivation, thereby generating rural employment and foreign exchange earnings.

At the time the PP was prepared, only about 13% (35,000 ha. of 280,000 ha.) of the irrigable cropland in El Salvador were partially irrigated. Little of this partially irrigated area was devoted to fruit and vegetable production, and only about 10,000 ha. were considered to be consistently producing under irrigation. Some 7,618 ha. were in government hands and the rest (for which no good data were available in 1984) had been developed by private farmers. Indeed, it is estimated that El Salvador imports annually from Guatemala the equivalent production of some 7,000 ha. of fruits and vegetables that could be grown domestically.

Under the new Project, emphasis was to be placed on the private sector for production, processing and marketing in order to build upon existing experience and capacity. A few growers were involved in the production and export of fruit and vegetable crops. A number of Salvadoran companies sold pumps and water distribution equipment. Several private packing sheds and food processing plants were in operation.

To complement private sector activities, the GOES recognized the need to strengthen several Government agencies through the provision of training and equipment. These agencies would then be able to more effectively address irrigation policy issues, develop improved irrigation systems, teach groups of farmers to manage their own irrigation districts, and carry on with the Project's activities after its completion.

B. Project Description

The goal of the Water Management Project is to generate employment, income and foreign exchange for El Salvador. The Project purpose is to promote and stimulate diversified irrigated farming in El Salvador through institutional strengthening, technology transfer, training and credit assistance. Project activities are divided into two segments: (a) support of public sector irrigation planning, extension and training institutions to provide improved support to farm-level water management and irrigated agriculture, and (b) support of private sector firms engaged in or directly connected to intensive irrigated agriculture and export marketing R&D.

Project activities are narrowly focused upon the development of crops for export in which El Salvador has a comparative advantage and for which irrigation is necessary. In order to develop these crops, the Project seeks to: (1) identify the most profitable, labor intensive fruit, vegetable and specialty crops, (2) develop precision irrigation systems,

(3) train producers and processors in new production and packaging technologies, and (4) improve the marketing of these products in foreign countries.

In the private sector, primary emphasis is placed on training farmers and farm managers in production, processing and export marketing of perishable crops; transfer of cost-effective technologies in precision irrigation system design, construction and operation for improved irrigated crop production; the establishment of a flexible credit system; the development of new or expanded processing plants; and improvements in the export marketing of both processed and fresh products.

In the public sector, the Project focuses on strengthening Government agencies' capacity to improve irrigation policies, planning, extension and training that will reinforce improvements in the private sector. The GOES also recognized needs to introduce education programs at the university level in irrigation systems design, water management, irrigated crop production and export crop marketing. With these programs, Salvadoran technicians would to be able to assume full responsibility at both the technical and the operational levels for irrigation support activities at Project completion.

The total cost of the Project was $25.2 million, including A.I.D. grant funds of $5.3 million for the public sector activities and $13.5 million for the private sector component ($10 million of the private sector grant was to be deposited in the Banco Hipotecario (BH) for the R&D Credit Fund). Another $2.5 million in local currency was to be made available from the PL480 program. The balance of approximately $3.9 million was to come from in-kind contributions from participating public and private sector institutions. The expected life of the Project was five years.

1. The Private Sector Component

The objective of the Project's private sector component is to strengthen the technical and financial capability of private firms and farms to use water from rivers, streams and aquifers for the production, processing and marketing of labor-intensive, non-traditional export crops.

The Salvadoran Foundation for Economic and Social Development (FUSADES) was selected as the private sector grantee and made responsible for coordinating all private sector activities until such time as a Private Sector Irrigation Association could assume this responsibility. FUSADES' function was to promote the development of private irrigation firms to design, supply, install and service pumps, sprinkler and trickle irrigation systems. In addition, five integrated commercial-scale pilot Projects were to be created through the combined efforts of FUSADES and the Irrigation Association. FUSADES was also charged with expanding the capability of packing and processing firms and irrigated farms producing for export. Initially, FUSADES was to assume operational responsibility for all actions under the private sector component of the Project.

The Private Sector Irrigation Association was formed in 1985. The Association members were to include representatives of irrigation equipment suppliers, agricultural consultants, farmers, and marketing firms. As soon as it was legally constituted, the following actions were to take place:

a. FUSADES was to transfer Project implementation responsibilities to the Association. After the transfer, FUSADES would continue to monitor the Association's operations and finances.

b. The Association would, with the help of two U.S. long-term advisors, provide technical and financial support to farmers, processors, packers and marketers participating in the program.

c. The Association would make loans to qualified private individuals for precision irrigation systems for use on their farms (Model A).

d. The Association would also make loans and provide technical assistance to five firms that would undertake development of five pilot Projects involving integrated irrigation systems and export marketing (Model B).

e. A special R&D Credit Fund would be created in the Banco Hipotecario to provide credit under the two models. This line of credit would be managed by a Credit Committee within the Association once the Association had been legally constituted. Until that time, estimated at some two years, the Loan Committee would operate under FUSADES. Feasibility studies would be approved by the Credit Committee, and the loans would be made by the Banco Hipotecario. Loan disbursements to the ultimate borrower would be drawn from the Fund at commercial rates, since the new ventures were to be operated as commercial enterprises.

f. In addition to the above, the Project would establish a program of assistance to irrigation input suppliers and well drillers, consisting of financial support for the employment of additional staff through salary payments and training of these new employees to assist the loan recipients.

g. Since the export products to be financed under the Model B credits would be high risk, one-half of the cost of producing and marketing these new commodities would be guaranteed to borrowers.

It was envisioned that the Association would ultimately take complete responsibility for program implementation. Its role would be to interest national or foreign investors in irrigated export crop production, or in the operation of processing plants, canneries and freezing plants and the marketing of the resulting agricultural products in foreign countries. The Association would assist the

investors to prepare feasibility studies, secure loans, advise on the most appropriate production practices, and provide training on all phases of the new ventures during their first several years. Senior U.S. technical advisors would be made available through the Association to provide training to irrigation firms, farmers and exporters receiving loans for irrigation systems, processing facilities, and export production.

2. The Public Sector Component

The objective of the public sector component was to strengthen Government institutions engaged in irrigated agriculture, water management, water policy development, farmer extension and training, and irrigation planning in order to improve public sector effectiveness in these areas. The institutions that were to receive Project assistance were the Agricultural Technology Center (CENTA), The National School of Agriculture (ENA), the General Directorate of Irrigation and Drainage (DGRD), the Agricultural Sector Planning Office (OSPA) and the Office of Water (OA).

The public sector planning institutions (OSPA, OA and DGRD) were to be assisted by the Project through U.S. long and short-term technical assistance, equipment, visits to water districts in other countries and foreign short courses and workshops. The intent was to improve their capability to design smaller, more cost effective systems, and to organize farmer groups to operate and manage their own systems through the establishment of irrigation districts. They would also be assisted in updating and modernizing water law as well as strengthening their ability to develop and analyze new alternatives for future water policies.

CENTA and ENA would receive U.S. long and short-term technical assistance, equipment, as well as local and foreign long-and short-term training to upgrade their capacity to train farmers, agronomists and extension agents in irrigation and irrigated agriculture. CENCAP was to be the site of numerous short courses for farmers and extension agents.

C. Project Modifications

Since the Project began in 1985, the GOES, USAID, and FUSADES have agreed to several modifications in order to increase the efficiency of Project implementation and to overcome deficiencies in the original design. These modifications are as follows:

1. The contract procurement ceiling, beyond which FUSADES must secure USAID concurrence, was increased from $20,000 to $50,000.

2. FUSADES was initially given responsibility for creating a Loan Committee to review loan feasibility studies and make recommendations to the Banco Hipotecario, based on which the BH would review the creditworthiness of loan applicants and disburse funds from the R&D

Credit Fund. After Project approval, it was learned that Salvadoran banking regulations require 20% cash reserves for trust accounts of this type. In order not to tie up more than $2 million of Project funds in reserves, FUSADES (with USAID concurrence) opened a normal commercial account for the Project. FUSADES' Loan Committee assumed responsibility for both the technical and financial aspects of loan applications, including client creditworthiness. These responsibilities were to pass to the Association when it became operational.

3. USAID was represented on the FUSADES Loan Committee under the original Project organization. This was subsequently deemed counter to USAID policy, and the USAID representative was removed from the Committee in October 1987. FUSADES is now reorganizing the Committee.

Section Two

SCOPE OF WORK, TEAM COMPOSITION, AND METHODOLOGY

A. Scope of Work

The overall purpose of this evaluation was to examine selected design elements of the Water Management Project in the light of progress to date, and to determine if these should be reprogrammed, under present and expected circumstances. The Scope of Work called for the evaluation team to address five specific issues, as follows:

1. Is ENA's role as defined in the PP still valid given administrative and budgetary changes which have occurred in the past year? Will it be able to carry out its responsibilities under the Project?

2. What is or should be CORPREX's role in the implementation of the Project?

3. Can the objectives of the private sector component be met with greater efficiency and less potential conflict of interest under FUSADES's proposed restructuring of implementation roles and responsibilities?

4. Is the Export Market Risk Guarantee (EMRG) mechanism of the R&D Credit Fund necessary?

5. What additional incentives, if any, should be given to irrigation equipment supply firms to increase their promotional activities?

A copy of the complete Scope of Work is included in the appendix to this report.

B. Team Composition and Assessment Methodology

The assessment team was composed of two experienced agriculturalists with prior evaluation experience: Donald Fiester, Team Leader; and Stephen Morgan, Private Sector Specialist. Upon arrival in El Salvador, the team reviewed the Scope of Work with USAID Rural Development Office staff and Project managers to seek their guidance on the overall assessment objectives and methodology. The team was provided with background material including the Project Paper and Project Agreements with FUSADES and the Ministry of Agriculture. It was also provided with information on FUSADES' proposed restructuring of Project implementation roles and responsibilities.

After examining the pertinent documentation, the team developed a preliminary action plan for the evaluation process which was reviewed and approved by the Private Sector Officer in USAID's Rural Development

Office. USAID staff made several valuable suggestions which strengthened the proposed approach.

Field data collection and interviews were carried out over a two-week period from November 16-30, 1987. A total of 17 in-depth meetings (some lasting more than seven hours) were held with over 50 individuals (see Annex 1) involved in various aspects of the Project, including representatives of FUSADES, CENTA, the General Directorate of Irrigation and Drainage, OSPA, OCOPROY, CENCAP, ENA, CORPRES, and AGRIDEX. The names and affiliations of these individuals are presented in Appendix 1.

The team was accompanied to all meetings by USAID/RDO support staff representatives Ing. Agr. Rodolfo Cristales and Ing. Agr. Luis Antonio Gonzales, whose extensive experience and contacts in El Salvador's public and private sectors as well as within USAID were invaluable in setting up meetings and providing background on the institutions and their operations.

In order to understand fully the implications of the issues being addressed, the team felt it was important to review the overall structure and operations of each agency and institution. During each interview, respondents were invited to discuss the function of their operations from their own viewpoint. The team appreciated the frankness and openness on the part of those interviewed in both the public and private sectors and their cooperation in providing the requested documentation.

Section Three

ISSUES ASSESSMENT

This section presents the findings and recommendations of the issues assessment. Each issue is addressed separately. The presentation begins with a statement of the issue, followed by the team's overall conclusions and recommendations. It concludes with a discussion section which provides findings to support the team's conclusions and recommendations.

A. Issue No. 1 -- The Role of ENA

IS ENA'S ROLE AS DEFINED IN THE PP STILL VALID GIVEN THE ADMINISTRATIVEAND BUDGETARY CHANGES WHICH HAVE OCCURRED IN THE PAST YEAR? WILL IT BE ABLE TOCARRY OUT ITS RESPONSIBILITIES UNDER THE Project?

CONCLUSIONS AND RECOMMENDATIONS:

The decision to support the National School of Agriculture (ENA) as the center for university-level training in irrigated agriculture remains valid. ENA is the best location for training because of its physical plant and its experience in both vocational and theoretical education.

1. There is a definite need for and interest in training for irrigated agriculture at both the B.Sc. and vocational levels in El Salvador. One is not a substitute for the other.

2. ENA cannot provide a B.Sc. without a change in its authority to permit granting higher degrees. The school must be able to provide a Licenciatura (university degree) to its graduates.

3. Since time is of the essence in starting the new B.Sc. level training program in irrigated agriculture, the Government or ENA (at's discretion) must provide to USAID, in writing, evidence that ENA will be able to grant a Licenciatura in Irrigated Agriculture by July 30, 1988. As a safeguard, USAID should organize a working committee to select an alternate institution to assume this function in case the ENA is not granted authority to issue a B.Sc. equivalent degree.

4. ENA must upgrade its staff to assume full responsibility for university-level training after departure of U.S. advisors. The Government of El Salvador must permit selected staff members to begin English language training no later than March 1988 so that they can gain proficiency before the U.S. academic year begins. The GOES must reaffirm its commitment to continue trainees' salaries during this period, and to reincorporate the trainees into ENA to provide instruction upon their return.

5. Since ENA is the primary source of extension agents and farm leaders in the country, the team recommends that it integrate in-depth

training in irrigated agriculture into its vocational educational program.

6. Due to ENA's current financial problems and the increased burden that the new B.Sc. program will place on the school, the team suggests that USAID conduct an audit and a management analysis. This would provide a basis for restructuring the school's financial and administrative systems if necessary.

7. The irrigation, computer and visual aids materials promised for ENA must be delivered to the school and put into proper use.

DISCUSSION:

The availability of adequate numbers of competent technicians is the single most important factor in determining whether or not El Salvador will be able to compete successfully in export markets on a sustained basis. This market demands quality products at favorable prices. There is a need for quality local technical expertise at all levels--not only in irrigation and water management. Assistance must be available from plowing to harvesting and marketing. The team has evaluated this issue with these observations in mind.

Central to the development of non-traditional agricultural exports from El Salvador is the training of professionals at both the university and vocational levels. A university curriculum in irrigated crop production must be initiated. Without this, it will be necessary for students to go to universities in the U.S., Chile, Brazil, Mexico or other countries. Language differences and high costs would make this impossible for many students. Technicians would not be available in necessary quantities, and development would lag.

The team supports the incorporation of various irrigated agriculture and water management topics into the vocational training program at ENA and comparable institutions. Graduates will be extremely important to agricultural development as farm foremen and managers, extension agents and seed salesmen. Graduates of vocational programs are not substitutes for university graduates. They do not have the in-depth education necessary to serve as the leaders who will enable El Salvador to compete with other, more advanced, export producers in Latin America over the long run.

The PP calls for the provision of a four-person U.S. technical team to work both at CENTA and ENA for 2 1/2 years. This team will provide approximately 48 person-months of support to ENA for "the development and teaching the basic courses for a B.Sc. degree in irrigated agriculture". In addition, CENTA and ENA will be provided with 30 person-months of short-term technical assistance plus irrigation equipment, micro-computers and video training equipment. Four ENA staff members will receive M.Sc. or M.B.A. degrees essential to the new degree program. According to the PP, they will be trained in (1) Irrigated Agriculture;

(2) Plant Pathology; (3) Rural Organization and Extension and (4) Agribusiness Management.

In assessing the need for training at ENA at the university level, in terms of the original role assigned to ENA under the Project, the team evaluated the following factors:

1. Demand for Graduates

There is little reason to train Salvadoran technicians at the B.Sc. level in irrigated agriculture if there are no employment opportunities for those who complete the program. In the next two or three years only a few B.Sc. personnel trained in irrigated agriculture will be required. However, if this Project can show concrete examples of the profitability of irrigated export crops, the demand for technicians trained at both the university and vocational levels will grow rapidly. University graduates will be needed to conduct research, design systems and manage public and private sector programs. Vocational trainees will be in great demand as extension staff, farm foremen and managers, and sales personnel.

The team inquired whether there was any interest among ENA students in continuing their studies for another one or two years in a B.Sc. course in irrigated agriculture after completing requirements for the Agronomo degree. ENA surveyed its students through a written questionnaire (see Annex 2). Results indicated that of the 199 students surveyed 159, or 79%, would be interested in this training.

It is not practical, however, to think that students will want to complete one or two additional years of intensive technical instruction without receiving an advanced degree. A case in point is the ongoing change in structure of the Escuela Agricola Panamericana (EAP) in Honduras. There has been pressure on the school for many years to grant a full B.Sc. degree. EAP is now extending its program of instruction to four years so that its students can receive a degree and compete with the Ingenieros Agronomos of the region for jobs.

The team asked people at ENA, CENTA, FUSADES as well as the Presidents of FUSADES, CORPREX, a private irrigation equipment supplier, and a private consultant, for their assessment of the current situation and future needs. Discussions, though admittedly limited in scope and possibly skewed in perspective, brought out the following:

- El Salvador does not have a tradition of irrigated agriculture. Over 95% of the crops grown in the country are produced under rainfed conditions. It is estimated that there are some 300,000 ha. of land that can be irrigated. For all of this area to be converted to irrigation, there must be financial successes in irrigated crop production for export. This will require a large number of people to be trained at all levels in new technology.

Highly qualified people will be needed to teach, conduct research, design and install systems and guide production, post-harvest handling, shipping and marketing of a variety of crops. Particular attention must be given in the training program to educating farmers, laborers and others in the importance of product quality. At present, there are fewer than 20 people with university degrees for these essential tasks.

- o In the next two or three years, FUSADES will need from ten to forty people trained in irrigated agriculture and the design and review of feasibility studies. Attempts to find technically qualified people thus far, through advertising in newspapers, have not been successful. The Head of RIEGO and a private sector equipment supplier mentioned that, as their needs grow, they might have to hire specialists from the public sector.

- o The few packing plants now in operation have some expertise in managing their own operations and in assisting farmers who grow crops for them. As new plants are added to the system, additional staff will be needed. Some employees can be trained in short courses but operations managers and key technical personnel will require a higher level of training if the enterprises are to be successful.

- o There will be a need for 100-250 farm managers over the next five to seven years to manage the field operations of the larger export companies. Some of these can be trained graduates of the University of El Salvador and the country's nine private universities. However, none of these institutions presently offer training in irrigated agriculture.

- o As the sale of irrigation equipment increases, there will be opportunities for more trained people to work in sales and maintenance. Demand is now very small but significant growth should begin with the first successes in export sales. This, in turn, will lead to increased equipment sales opportunities.

2. ENA's Capacity to Teach Irrigated Production

ENA has sufficient classrooms for the ongoing Agronomo training program and, according to its Director, can make space available for training in irrigated agriculture. Its campus has over 150 ha. of excellent land. With the arrival of new equipment that has been selected by the Water Synthesis II advisors, the school will have a good operational base for the proposed training program. Currently, other institutions are using the facilities of ENA and CENTA for the field training of their students.

The assessment team did not have the opportunity to evaluate staff teaching capability. It is the team's impression that the present staff of ENA needs much more classroom training and field work in irrigated agriculture.

A shortage of operating funds may hinder the new training program. The Government has not increased its allotment to the school for at least three years. The school is some 230,144.26 Colones in debt (since 1983). Because of its poor financial condition its credit is cut off periodically. Also, its physical plant is suffering from some deterioration.

An in-depth analysis of the financial and accounting system of the school is warranted. About 94% of the school's budget is being spent on the bare essentials of its training program. Yet, its administrative staff is reported to consist of 197 people! A significant amount of the cost of food for students is being provided from PL-480 contributions and the sale of a portion of the production from the school farm.

3. Interest of the School in Providing the New Water Management Training Program

The team discussed the implications of the new training program with school officials to determine their interest in irrigated agriculture. It is evident that the present administration of the school is committed to the program. Indeed, officials feel that this is a unique opportunity to make the school a university. They have organized a Curriculum Committee composed of their senior staff, representatives of the Ministry of Education and OSPA. This committee has prepared a preliminary curriculum and has outlined each course. They are awaiting the arrival of the U.S. advisors to complete the program design. In addition, officials expressed their desire to develop a systematic means of working with FUSADES and commercial producers so that their students can secure hands-on training.

Several instructors have studied water management and irrigation systems design at the University of Utah. They have already begun to include aspects of this training in their courses. This should be expanded to include courses, in all three years of the present program, in irrigation systems operation and maintenance, irrigated crop production, drainage systems, harvesting and packing for export. Classroom activities should be complemented by in-depth practical field experience.

4. Willingness of ENA to Send Staff to the U.S. for Graduate Training

The subject of sending ENA staff to the U.S. for graduate training was discussed in depth with ENA's Director. It is recognized that the school must provide further training for its professors if they, in turn, are to provide quality education to students. In April 1987, the school selected five senior instructors to go to the U.S. in accordance with the Project Agreement and advised the Ministry of Agriculture of their choices in writing, as required. They were informed that no staff could be sent for training, in spite of the agreement with USAID.

It appears that the Government is reluctant to continue to pay the salaries of staff members while they are out of the country, as stipulated in the Project Agreement and approved by the Government in 1985. Under AID regulations, the United States is not obligated to pay the living costs for the families of married students either in the U.S. or in their native country while students are on scholarship. This places a severe hardship on the students and their families.

5. ENA's Legal Basis for Granting a Degree in Irrigated Agriculture

Under its 1956 charter, ENA grants "Agronomo" degrees to students who finish its three-year curriculum. It cannot offer a B.Sc. in irrigated agriculture. To do so would require that the school become a university.

The Original Decree under which the ENA was created states in Article 3 the following:

> "The previous paragraph notwithstanding. ENA can become a university when its Administrative Council takes the decision to do so, and [the school] completes the required legal procedures." ("No obstante lo dispuesto en el inciso anterior, cuando el Consejo Directivo de la "ENA" así lo decida, podrá convertirse en universidad, cumpliendo para ello con las disposiciones legales correspondientes.")

The Director of the school indicated that he felt there would be little opposition to the school's conversion to a university since neither the University of El Salvador nor any of the country's nine private universities offer degree training similar to that contemplated under the Project.

The administration of the school has formed a working committee to investigate courses of action. The Committee (Comisión de la Universidad Agraria) is composed of professionals from OSPA, ENA, CENTA, CENCAP, and the Ministry of Education. The Committee will cooperate with ENA's Administrative Council, which is now meeting regularly for the first time since 1982.

B. Issue No. 2 -- The Role of CORPREX

WHAT IS (OR SHOULD BE) CORPREX'S ROLE
IN THE IMPLEMENTATION OF THE Project?

CONCLUSIONS AND RECOMMENDATIONS

After a thorough analysis of this issue, the team concluded that, due to the reduced role of CORPREX and the existence of a competent staff and administration in FUSADES:

1. Support to CORPREX for the original purposes of this Project should not be initiated. The functions which were to be transferred to CORPREX should continue under FUSADES.

2. Since the Loan Committee of FUSADES will be small and hold responsibility for the approval of all loans, it must be organized to permit representation from a broad spectrum of agro-industry.

3. FUSADES and should study the advisability of providing funds to CORPREX, on a proportional basis, for the education of farmers and extension agents on the merits, systems and operation of irrigated agriculture. The team further hopes that CORPREX, during this process, develops its membership to represent all of the sectors involved in the perishable and processed food products export field.

DISCUSSION

The Project Paper called for the development of a private, non-profit irrigation association to promote diversified irrigated agriculture. FUSADES would be responsible for providing assistance for the formation of the Association and assist it in securing its legal status ("Personaria juridica"). After the transfer of the loan fund and operational responsibilities to the Association, FUSADES would have continuing monitoring and evaluation responsibility for the Association's operations. It would have two U.S. consultants to assist it for the first three years. Its Board would have nine members including a representative of FUSADES. Representatives from USAID and two other organizations would become ex-officio members.

When operational, the Association would manage the technical aspects of feasibility study approval; the Banco Hipotecario (BH) would evaluate creditworthiness of prospective clients and disburse funds from the "Restricted Loan Fund." The Association would also provide technical assistance to individual farmers and five pilot irrigation Projects, and install irrigation systems for private farmers.

During the process of forming the Association, FUSADES and USAID learned that the Restricted Loan Fund would have to have to fulfill a 20% reserve requirement. Commercial accounts, on the other hand, do not have reserve requirements but they must be held by corporations. With USAID's concurrence the Association was reorganized into a corporation, "CORPREX," in order to permit it to operate as intended. The Trust Account was changed to a commercial account in the BH.

It has taken some two years to secure the legal status of CORPREX (July 1985 - July 1987). It will take until early 1988 to register it in the social security system and inscribe it in the Registro Civil, Direccion de Contribuciones, Direccion Mercantil and the Ministerio de Salud.

In the interim, while CORPREX was securing its legal recognition, FUSADES was charged with conducting all aspects of the private sector irrigation systems program. FUSADES used several organizations including FORTAS,

DIVAGRO, FIDEX, PRIDEX, DIVAGRO and Riego, and created CORPREX and ASPENT, to support a range of private sector activities. These organizations were used to provide technical assistance, training and loan funds for the Project's activities. They generated interest and designed, planned and financed specific private farm and processing/production programs for the export of non-traditional crops. Through DIVAGRO and Riego, FUSADES analyzes feasibility studies prepared by outside consultants and input supply companies. Its marketing group analyzes the market for potential products in the U.S. and other markets and studies the feasibility of loan proposals in terms of markets and the potential profitability of proposed enterprises.

It was envisioned that the Association would have representatives from a broad range of enterprises as members. These would include equipment suppliers, well drillers, irrigation consultants, export processing firms, perishable food packers, producers, exporters and transport system operators. Unfortunately this has not been the case. CORPREX is composed of almost all of Salvador's irrigation equipment suppliers (about 30) and fewer than ten other commercial organizations. As a consequence it is hard to foresee how CORPREX can objectively appraise feasibility studies with a loan Board composed largely of members from input supply companies.

FUSADES suggests that a different system of operations be developed. This team concurs. FUSADES proposes that it retain responsibility for the Loan Approval process through FIDEX and reorganize the Riego section into DIVAGRO. This would give it the capability to evaluate technical aspects of loan proposals. It would continue to use its marketing section, PRIDEX, to study markets and the marketing elements of proposals.

FUSADES has thus delegated to FIDEX much of the responsibility for this Project's credit components. FUSADES' Credit Committee is assisted by FIDEX's staff in the evaluation of each proposal. Loan proposals that meet FUSADES' criteria are then sent to FIDEX review and final approval.

The original organizational role for CORPREX called for activities in seven different areas. Under the proposed restructuring CORPREX would function solely as a trade association, protecting members' interests, providing technical assistance to borrowers and promoting irrigated, export-oriented agriculture to farmers and cooperatives. It would have a small staff of three to five members and two contract advisors, and would receive funds for operations from FUSADES.

The cost of the residual CORPREX functions has been estimated at about $125,000 per year, for an office manager, controller, bookkeeper, several technical staff members and several field agents. Services to be provided duplicate those of FUSADES.

C. Issue No. 3 -- Evaluation of the Proposed Restructuring of FUSADES and CORPREX

CAN THE OBJECTIVES OF THE PRIVATE SECTOR COMPONENT BE MET WITH GREATER EFFICIENCY AND LESS POTENTIAL CONFLICT OF INTEREST UNDER FUSADES' PROPOSED RESTRUCTURING OF IMPLEMENTATION ROLES AND RESPONSIBILITIES?

RECOMMENDATIONS

This team has reviewed the various changes proposed by FUSADES to improve Project operation. In general, objectives can be better met by FUSADES than by CORPREX or the Association. FUSADES HAS the motivation, administrative capability and experience necessary to carry out the Project's operations at less cost. The team does not, however, support all of FUSADES' suggested changes in the organization's operation and authority.

1. PROPOSAL: Permit FUSADES to receive all interest from Project lending operations.

   RECOMMENDATIONS:

   a. That no more than 50% of the interest from outstanding loans be made available to FUSADES for operational expenses after deducting 5% for the BH to cover costs incurred in handling loans. Remaining interest should go to the Credit Fund.

   b. USAID should encourage FUSADES to identify other sources of funds in order to expand its services to the private sector. These new funds could come from charges for certain types of technical assistance, for example.

2. PROPOSAL: Permit FUSADES the flexibility of investing up to 51% of the capital required in a Project and assume an equity position.

   RECOMMENDATION

   That FUSADES not be permitted to take equity positions in any Project funded under this program.

3. PROPOSAL: Eliminate the requirement that irrigation dealers guarantee 20% of FUSADES-approved loans for the purchase of their equipment.

   RECOMMENDATIONS

   a. That the 20% risk responsibility now imposed on equipment suppliers be removed at once.

b. That all equipment suppliers be advised of this change and encouraged to reduce the cost of equipment sold to Project borrowers.

4. PROPOSAL: That the requirement for the development of five model pilot Projects under model "B" be modified.

RECOMMENDATIONS

a. USAID should eliminate the requirement for only five "pilot Projects" in order to permit FUSADES to finance as many Projects as possible.

b. To the extent possible, FUSADES should encourage proposals from different areas of the country to provide opportunities for more of El Salvador's rural population to participate in this Project. This suggestion should be implemented without any weakening of the present rigorous analysis and approval process.

5. PROPOSAL: Eliminate the requirement for public bidding for the selection of operaters of the pilot firms when a request is made.

RECOMMENDATION

Competitive bidding for the selection of processing plant operators should be terminated.

6. PROPOSAL: Reclassify the resources assigned to the fund of operations of the Project and extend the Project Assistance Completion Date to December 31, 1991.

RECOMMENDATIONS:

a. The team supports the changes proposed by FUSADES in the credit component and recommends that USAID make the required changes.

b. It is too early to determine if an extension in the Project Assistance Completion Date, from December 31, 1990 to December 31, 1992, is warranted at this time. The team therefore recommends that this decision be postponed until the Project's mid-term evaluation.

7. PROPOSAL: Increase funds held in dollars to permit the purchase of equipment abroad.

RECOMMENDATIONS

a. That FUSADES have authority to maintain sufficient funds in a dollar account to finance offshore purchases of specialized equipment for Model "B" loans for packing shed, processing plant equipment and other necessary for the processing and marketing non-traditional crops.

b. That the dollar account also be available for the purchase of irrigation equipment through local suppliers for loan recipients under Model "A".

c. That a study be undertaken, possibly using Water Synthesis II staff and a U.S. commercial input supplier, to evaluate how effective local equipment suppliers are in maintaining spare parts and repairing the equipment that they sell. Those companies that are supplying good service to producers and processors should have access to dollar funds for the purchase of new equipment and repair parts more rapidly than is possible at present.

8. PROPOSAL: Increase the limit of authority of FUSADES to authorize expenses for activities under the Project.

RECOMMENDATIONS

a. That the request for an increase in authority for contracting technical services be deferred until USAID is fully confident that FUSADES has the capability to administer higher levels of U.S. funds in an appropriate manner following its reorganization.

b. That USAID review its contract approval process and assure that timely procedures are in place to guarantee that, in cases of emergencies, approval for technical assistance contracts can be approved as rapidly as possible.

DISCUSSION OF ISSUE NO. 3

The role of FUSADES as the irrigation program's initial managing entity was described in the Project Paper. FUSADES was to coordinate activities and serve as Grantee for the private sector component. As the Irrigation Association (CORPREX) gained legal status and became fully operational, it was to take over FUSADES' functions.

To handle irrigation activities in the interim FUSADES formed its "Riego" division. Riego's functions were: (a) To strengthen the technical and financial capabilities of private firms, (b) Exploit water resources, (c) Promote production and marketing of labor-intensive, non-traditional crops, (d) Assist firms to design, supply, install and service irrigation equipment, and (f) Establish five irrigated commercial-scale pilot Projects for export crops.

The Evaluation team made a point of examining the legal status of FUSADES for the purpose of determining if the proposed revisions in its organization, objectives, actions or conditions of the Foundation could pose some identifiable problem that would require further inquiry. There seems to be no potential conflict related to the objectives of the

organization. (Reference: Diario Oficial. Tomo No. 280, numero 164, Martes, 6 de Setiembre de 1983. pg. 7-10).

The proposed changes in the organization and operations of FUSADES appear to be a result of FUSADES' concern that if certain functions are turned over to CORPREX (as suggested in the PP) a conflict of interest might arise due to CORPREX's private sector composition. In addition, CORPREX activities would essentially duplicate several of those of FUSADES. For example PRIDEX, a division of FUSADES, already has a telegraph link with U.S. wholesale markets as well as an office in the U.S. to provide continuous information on new market opportunities.

The eight changes in the organization and operations of FUSADES, under their proposed modifications, warrant individual comment. Each issue is discussed below as presented in the Proposal provided to USAID. Comments follow.

1. PERMIT FUSADES TO RECEIVE THE TOTAL INTEREST DERIVED FROM THE LENDING OPERATION.

   Under the present agreement FUSADES places 50% of the interest that is received from loans into the Credit Fund, after deducting 5% to cover the operational expenses of the BH. The rest of the interest would be split, with 30% of the remainder going to FUSADES and 20% to CORPREX when it is fully managing the private sector program. Until now, since Corprex has not been fully and legally capable of carrying out the operations of the Project, the remainder of the interest has gone to FUSADES to cover its costs for operation under the Program.

   Under the revision proposed by FUSADES, all of the interest, after deducting 5% to cover the costs of the BH, would go to the general operation budget of FUSADES.

   There is great merit in the concept of building up the Credit fund as rapidly as possible. This would permit FUSADES to make more loans for production to private producers, processors, shippers and marketers. The team strongly supports all efforts to expand the Credit Fund since it is critical to the success of the entire Project.

   Too, as the Project continues, some borrowers will inevitably default. Given the marketing problems that some farmers and processors will face, the program may possibly have to assume 50% of these losses. Putting at least 50% of the interest derived from the loans outstanding back into the Loan Fund will contribute to the desired expansion of the Loan portfolio. These are major factors for not supporting the proposal.

   It is recognized that if FUSADES assumes all of the functions of CORPREX as proposed, it may have some increase in costs. The team believes that these can be met by frugal management of the funds provided by the Project. It should not be the goal of USAID to cover

all of the expenses of FUSADES. USAID should encourage FUSADES to seek out other sources of income to meet its ongoing expenses.

2. PERMIT FUSADES THE FLEXIBILITY OF INVESTING UP TO 51% OF THE CAPITAL REQUIRED IN A Project.

In this Project's design there is no provision permitting FUSADES to invest in export operations. The proposed change would sharply alter the function and operation of FUSADES. It would permit making loans and assuming operational management of new enterprises for up to ten years. At that time, FUSADES would spin off its interests, turning them over to the private sector. Presumably, purchasers would not be members of FUSADES or its technical or administrative staff, although this is not clearly spelled out in its proposal.

Under the proposed change, FUSADES conceivably would not only make the feasibility study, approve it and provide the technical assistance, but also hold major responsibility for operations and make management decisions.

This proposal causes considerable concern. It would change FUSADES from an institution working for the good of all of the interests in the private sector to an institution that would be competing with the very private interests that it is committed to assist.

Changing the role of FUSADES in such a way would raise the spector of FUSADES not providing assistance to potential competing enterprises with the objectivity that the current private sector situation deserves and needs. Also, it could create a conflict of interest if a private operator proposed an attractive proposal and FUSADES insisted on an equity position in the Project even though the operator himself could manage it efficiently.

3. ELIMINATE THE REQUIREMENT THAT IRRIGATION DEALERS GUARANTEE 20% OF ANY FUSADES-APPROVED LOAN THAT PROVIDES FUNDS FOR THE PURCHASE OF DEALER EQUIPMENT.

Under the present operation of the Loan Fund, the Loan Committee of FUSADES reviews each loan with the assistance of its various sections in terms of the market for the products proposed, the design of the irrigation system, the construction of the processing or packing plant, the operational plan and the creditworthiness of the investors. On the basis of this detailed analysis, the Loan Committee approves or rejects the loan.

In addition, under the terms of the PP, the equipment supplier is paid the full amount of the equipment. However it is responsible for 20% of the cost of the equipment sold for up to ten years in trust, in case that the client does not pay FUSADES the full amount of the loan. As a result, the equipment suppliers have increased the cost of equipment by 20% to cover their potential indebtedness. The result

has been a significant increase in the cost of the equipment to borrowers.

Evidently, the designers of the Project did not take into account this unexpected consequence of the 20% trust obligation. This has had a negative affect on the use of loan funds for the purchase of irrigation systems under the Project.

Since FUSADES makes loans and assumes full responsibility for each loan under the Project, this condition exceeds requirements imposed by any financial institution known to the Evaluation team. There is no need for equipment suppliers to be held responsible for loan obligations.

4. THAT REQUIREMENTS FOR THE DEVELOPMENT OF FIVE PILOT ProjectS UNDER MODEL "B" BE MODIFIED.

The Project Paper recommends five "pilot Projects" under Model "B." Additional Projects could be initiated if desired. The five pilot Projects would be developed by private entities and offered by CORPREX to potential loan recipients under competitive bidding procedures. Winners would be awarded loans for pilot processing facilities, and for irrigation systems to help in production of crops to be processed.

As of October 30, 1987, FUSADES' Loan Committee has made three loans under Model "B" for the construction of processing plants and associated irrigation systems. Five loans for precision irrigation equipment for individual farms are now active. In addition, seven new requests for credit are under review; it is evident that FUSADES will surpass the five-Project goal of the Project Paper. The present composition of the active loan portfolio of FUSADES is presented in Annex 3.

FUSADES is encouraging the submission of Project proposals from qualified firms and individuals rather than stressing area development strategies. This is proper. To attempt to enter this highly competitive non-traditional export field requires utilizing the most capable individuals and firms available in order to produce the highest quality products possible, at competitive prices, and in sufficient quantities to persuade U.S. wholesalers or supermarket chains to abandon current suppliers in order to handle Salvadoran products.

5. ELIMINATE THE REQUIREMENT FOR PUBLIC BIDDING TO SELECT FIRMS TO OPERATE THE FIVE PILOT ProjectS

It makes no sense to this team for the five pilot Projects to be designed and then opened to public bidding. Under this system, low bidders might win Projects but lack the expertise necessary for success. Bidding for equipment and construction services is an accepted method of procurement. But bidding is not appropriate for

selecting individuals and firms to organize and operate commercial enterprises. This applies especially to the operation of perishable commodity marketing firms. This proposal has strong merit and should be approved.

6. RECLASSIFY THE RESOURCES ASSIGNED TO THE FUND OF OPERATIONS OF THE Project AND EXTEND THE LOP TO DECEMBER 31, 1992.

Under the current agreement, the Irrigation and Export Marketing R&D Credit Fund was created to: 1) finance farmers' purchases of irrigation equipment (Model "A"); 2) finance private firms' purchases of facilities and equipment for packing, processing, marketing and transporting non-traditional products to foreign markets (Model "B"); 3) provide production credit for irrigated farming; and 4) provide marketing credit.

Under FUSADES' proposed revision of the budget, amounts for several line items would be changed on the basis of experience to date and the volume of requests under consideration. FUSADES proposes that no reduction be made in funds for irrigation equipment under Model "A" (although investment in irrigation equipment will probably be less than originally estimated); that the amount reserved for processing and packing equipment and facilities (Model "B") be increased from $1.75 million to $4.0 million; that production credit be reduced to $1.0 million from $1.5 million; and that marketing credit be reduced from $3.0 million to $1.25 million.

In reviewing the reasons for these changes, the team found that the demand for processing plant credit had proven far greater than initially foreseen. Fortunately, processing and packing facilities are the key to the success of this Project; they are vital for handling increased volume from production loan recipients and from producers of related inputs. Therefore, the amount that FUSADES has requested for processing plants is reasonable and should have the highest priority in the use of Project funds.

The reduction in funds available for production credit should not have any marked effect on the program unless national banks reduce production lending or interest rates increase significantly. Most applicants for loans under this Project currently obtain production credit from other sources.

Marketing credit could be reduced, but should not be eliminated altogether. Reduction has been suggested since no loan requests have been made to date; however, the Project has not yet entered its marketing phase. The need has not yet been tested. After production begins marketing credit may be useful to avoid cash flow problems, late payments to producers and a decline in confidence in exporting. It is worth mentioning, however, that in Guatemala, marketing credit does not exist. There, effective mechanisms have been developed to handle the flow of payments from foreign buyers to local processors and growers. Similar procedures may be developed in El Salvador

after Project completion, when marketing channels have been successfully opened.

Thus, the changes requested in the line item budget are reasonable and will strengthen the Project.

7. INCREASE DOLLAR FUNDS TO PERMIT THE PURCHASE OF EQUIPMENT ABROAD

Obtaining authorization to purchase dollars for equipment from the Central Bank often takes more than two months. This is the first step in a process of ordering, receiving and delivering equipment which usually takes six to eight months. A typical transaction timetable follows:

December 1	Initiate the request in the Banco Nacional
January 15	Deposit 25% of the cost of the transaction
February 15	Line of credit opened (U.S. Ex-Im Bank)
February 28	Order placed with the manufacturer
May 30	Manufacturer places product on truck for transport to the port
June 15	Shipment departs from the U.S.
June 25	Shipment arrives in El Salvador
June 30	Merchandise clears customs and arrives at the dealer's warehouse

Equipment and parts not manufactured in El Salvador must be purchased abroad. They should be available to dealers and users on short notice.

The present procurement process could deter investment in non-traditional production systems. If irrigation equipment spare parts are needed for the forthcoming growing season, for example, delays can mean the difference between success and bankruptcy for growers. Crops can wither if they lack water for seven days.

The procurement process should be shortened in any way possible. One obvious way to do this (suggested by FUSADES employees, its president and a private equipment dealer) is to permit FUSADES to establish a dollar account in its name accessible to importers. This would save six to eight weeks for each transaction, shortening the procurement process by 25%.

This team has reviewed all of the Project background material available to it. It found no impediments to holding funds in a dollar account for the import of U.S. equipment under approved loans.

8. INCREASE THE LIMIT OF AUTHORITY OF FUSADES TO AUTHORIZE EXPENSES FOR ACTIVITIES UNDER THE Project.

At present, FUSADES is authorized to let technical assistance contracts up to $50,000 without approval. FUSADES now requests that this amount be increased to $100,000.

During conversations with FUSADES officials, the team could not identify any specific instances in which the $50,000 limit had been a deterrent to Project progress. Officials claimed that it had recently taken USAID more than a month to approve technical assistance contract; however, the timing of this assistance was not critical.

AID should streamline its approval process. In the future, situations might arise requiring experts to solve production problems on short notice. For example, a new disease or insect problem arises might have to be identified and controlled immediately.

Since FUSADES is new to this type of operation and does not yet have a performance record that will assure that it is ready to administer all aspects of the program on a timely and competent basis, there is presently insufficient evidence to warrant a change in this area. At the mid-term evaluation, this issue should be reviewed again.

). Issue No. 4 -- Need for the Export Market Risk Guarantee Mechanism

IS THE EXPORT RISK GUARANTEE MECHANISM OF THE R&D CREDIT FUND NECESSARY?

RECOMMENDATIONS

1. The Project is too new to tell if the Marketing Risk Guarantee Fund will be important to its success. The Fund should be continued at least until the mid-term evaluation.

2. USAID and FUSADES should conduct an in-depth study to ascertain if a crop insurance program is warranted. This could replace the Market Risk Guarantee Fund in the future.

DISCUSSION

The Project calls for an Export Market Risk Guarantee Fund (EMRG) to protect borrowers in the event of "failure of the market." Under this mechanism, farmers agree to pledge both equipment purchased and resulting harvests as collateral for Project loans. If they are unable to repay, and if they have grown the specific export crops promised under Crop Cultivation Agreements they have made with the lender, they will be liable for only half their losses. FUSADES will assume the other half. A Project reserve fund has been set up to cover these potential losses.

To date few borrowers have expressed interest in this mechanism. Yet, it is too early in the Project to state whether or not it should be terminated; export marketing has not yet begun. And lack of interest may be due to borrowers' lack of knowledge of the Guarantee Fund. As the Project evolves the EMRG may become an important factor in borrowers' investment decisions. This will become more likely as farmers and processors without export experience begin to comprise the major market for new loans.

For the future, the team recommends a crop insurance plan. This would not be free, like the EMRG. Crop insurance would be paid by borrowers desiring to insure themselves against both market failures and crop losses. Costs would be modest. The plan could be made a requirement for granting loans or could be made available to farmers investing their own capital. Such programs are used successfully in the United States and many other countries there is no reason one could not be made to work in El Salvador.

E. Issue No. 5 -- Need for Additional Incentives to Equipment Supply Firms.

WHAT ADDITIONAL INCENTIVES, IF ANY, SHOULD BE GIVEN TO IRRIGATION EQUIPMENT SUPPLY FIRMS TO INCREASE THEIR PROMOTIONAL ACTIVITIES?

RECOMMENDATIONS

1. That USAID authorize FUSADES to maintain a dollar account for financing the dollar costs of equipment including the purchase of pumps, tubing, risers, sprinklers, plastic tubing, and emitters needed to install efficient irrigation systems. These funds must be equally available to Model A and Model B operations.

2. That USAID and FUSADES, with assistance from U.S. experts in the marketing of irrigation equipment, conduct an in-depth study of the taxation system for irrigation equipment. In this analysis, special attention should be given to the differences in the classification of different types of equipment by GOES Customs agents and the effect this has on taxes paid by suppliers.

3. Since equipment suppliers are now importing their equipment and holding it in their own warehouses at high costs, a bonded warehouse specialist should be contracted to conduct a study of the feasibility of a private bonded warehouse company, similar to those in the U.S.

4. That FUSADES conduct an assessment of possibilities for standardizing equipment to reduce required spare parts inventories and assure that adequate protection is given to the purchaser that his system is amply supported by an efficient maintenance program.

5. That USAID authorize FUSADES to permit the use of furrow irrigation systems in conjunction with either wells or river pumping systems for both Model A and Model B credit lines.

6. That purchases of land leveling equipment be permitted under Project loans and that costs for land leveling be included in irrigation system installation costs.

7. That the advertising and promotion of this Project to the public be greatly increased to attract more farmers and processors. If funds for this purpose are limited, they should be increased.

DISCUSSION

Local equipment suppliers comprise an integral part of the production system. They should sell good equipment and have an adequate inventory of spare parts. They must also provide maintenance services to insure that farmers' investments are not lost due to lack of quality service.

During discussions with FUSADES/USAID and a major equipment supplier, it became evident that a major factor in the sale and use of irrigation equipment will be success in sales of non-traditional products abroad. Due to the fragile nature of the Salvadoran economy, lack of confidence in the short-run political situation, fear of land reform and the increasing strength of trade unions, many prospective investors are at present reluctant to invest, awaiting signs of change. Many will be reluctant until they believe that profits are commensurate with risks.

Discussions with a number of key individuals in both the public and private sectors led us to conclude that the idea of offering new incentives has merit. The team offers the following suggestions in the hope that they will increase investment and production:

1. Increase the availability of dollars for offshore procurement.

   Establishment of a dollar account to facilitate equipment purchases has been suggested by FUSADES in its plan for restructuring itself and CORPREX. Decreasing delivery time for imports from eight to six months should serve as an incentive to dealers to carry adequate inventories.

   Clearly, in order to succeed in the export of perishable commodities, there is a need for readily available dollars for irrigation dealers to purchase new equipment and spare parts. Without financial assistance, dealers will not have dollars immediately available and unnecessary delays will result.

   Although thirty companies sell irrigation equipment in El Salvador, only one sells irrigation equipment as its principal activity. As a result many firms sell equipment, but only a half dozen have sales volume to warrant a good inventory of spare parts and properly trained service staff.

In the case of one major irrigation supplier, further discussion of the situation disclosed that his sales have decreased drastically since 1979. This individual characterized his business as follows:

- o In 1979 irrigation equipment accounted for 70% of total sales. The remainder was for other types of water control equipment (e.g. water valves, industrial pipe). Now, 30% of sales are for irrigation and 70% for other uses.

- o Total volume of sales today is about one half that of 1979.

- o Almost all of the irrigation equipment sold in 1979 was for food crops. Today most of the equipment sold is for irrigating pastures.

This illustrates some of the factors restricting input suppliers from carrying a large inventory of new equipment and parts. It is evident that there is a need for readily available dollars to avoid costly delays and to make equipment available to potential producers.

2. Conduct a study of the taxation and import classification system as it affects this Project.

There are tax costs associated with the import of irrigation equipment and its distribution. For pumps this is only about 5%. However, for risers and plastic tubing for the drip systems taxes may be 35%. Since supplies and equipment are to be used for generating foreign exchange, which is also taxed, it would be worthwhile to conduct an in-depth study to see if these charges can be reduced or eliminated.

It has also been noted that when equipment arrives in El Salvador, it is frequently classified by the customs agents as if it were for home use. As an example, specialized irrigation tubing, needed for drip irrigation systems, is classified as if it were garden hose. The difference in the tax for these two uses is large. Because of these problems, a thorough study of the classification system (and its application by custom agents) is warranted during analysis of the agricultural equipment tax system.

3. Possible need for a bonded warehouse

In the U.S., input suppliers could not work without a bonded warehouse system. Most equipment dealers use this system to store excess inventory until it is sold. They purchase equipment in large amounts and deposit it in public or private warehouses, receiving negotiable warehouse receipts for which they can secure bank loans. This reduces the amount of capital tied up in inventory, yet assures the suppliers immediate access to their stock. Such a mechanism would be even more important for dealers in El Salvador who are a long distance from the manufacturers of equipment and spare parts. At

present, most of the suppliers in El Salvador are carrying their own inventory, thus limiting the turnover of their capital.

A modern warehousing system could provide an incentive for suppliers in El Salvador to stock larger amounts of inputs than at present. It could also improve the effectiveness of their capital. For these reasons, an analysis of this mechanism is warranted.

4. Standardization of irrigation equipment.

A broad array of irrigation equipment is currently available to prospective clients. Some, sold by reputable dealers, is of high quality and has a record of low maintenance costs. Other dealers are selling equipment that is inferior. When this fails during the production cycle, farmers must replace it on short notice. Reportedly, some dealers offer different types of equipment from catalogs for which they do not carry spare parts. These dealers often sell at lower prices.

The team feels that at this stage it is important to protect the Project's clients. For this reason, and FUSADES should study the possibility of selecting a few superior brands of irrigation equipment and choosing a few responsible local dealers. The dealers chosen must be willing to carry the selected precision irrigation equipment, maintain an adequate inventory of the most frequently requested spare parts, and have good repair facilities and trained personnel.

5. Use of furrow irrigation.

Furrow irrigation and land leveling, for the production of vegetables and fruit, are not included in the "precision" irrigation systems permitted by this Project. Furrow irrigation is the most widely used system for the production of vegetables worldwide. It is also the least expensive system to install and operate. If correctly managed, it can be one of the most successful and effective water application methods available. And, it can be classified as a "precision" watering system if the producer learns to use it properly. If not permitted under this Project, lack of this system will place Salvadoran farmers at a disadvantage.

When properly managed, furrow irrigation must include:

a. Knowledge of soil composition.
b. Availability of quality water (source).
c. Land leveling (gradient and furrow run).
d. Use of the proper drainage at the end of the row.
e. Establishment of the furrows (corrugation programmed to the crops that will be produced).
f. Identification of the economic costs and losses of water to determine whether headers and main laterals should be of dirt or pipe.

Since the water loss from ditches can vary from 7% to 50% of source discharge per mile of ditch, it is important to avoid excesses in designing furrow irrigation systems. To improve furrow irrigation system efficiency in El Salvador, where water is at a premium at times, this team recommends that furrow irrigation systems be designed using gates pipe.

The costs of furrow irrigation systems are much lower than those of the sprinkler or drip systems now authorized under the Project. As an example, in California today, the cost of a 30-acre furrow irrigation system is quoted at about $450 per acre. This includes a diesel pump mounted on a trailer, uptake and discharge attachments, and enough gated main line to irrigate a 30-manzana farm (total cost $13,500.00 F.O.B. California).

In El Salvador a large difference exists between the estimated costs of the approved systems in comparison with furrow systems:

1. Furrow system 3000 Colones/manzana.
2. Drip " 7000-8500 " "
3. Sprinkler " 5500-8000 " "

In addition, for many vegetable crops in the tropics it is almost impossible to control diseases using sprinkler systems. Likewise, some crops are damaged when water comes in contact with the ripening fruit on the ground. Both of these problems are avoided if proper furrow irrigation is used.

In Guatemala, Mexico and other major export market competitors, the large majority of the crops are grown using furrow irrigation. If the farmers of El Salvador are not permitted to use this system, they will produce at higher costs than farmers in other countries. In some years this could make the difference between profit and loss.

6. Use of land leveling equipment.

It is noted in the PP that the purchase of irrigation equipment does not include land leveling equipment as a required tool for precision irrigation. For any furrow irrigation system, as well as for most sprinkler systems, it is essential for fields to be level (or of a uniform slope) to cultivate quality crops. In the case of furrow irrigation it is imperative to have the field properly graded to assure efficient water usage.

Leveling the field is the first step in successful irrigation. This requires an analysis of the soil structure, texture, percolation rate and sub-soil conditions, in order to provide the information needed to properly locate the header system or main line tubing as well as the drainage system itself. Without proper land grading, it is almost impossible to assure uniform wetting of the field and complete surface drainage when water deliveries are terminated.

The effects of improper land leveling are as follows:

1. Excessive water evaporation in poorly drained areas can result, over time, in salting and other adverse soil reactions.

2. Undulations over the field often result in decreased yields and quality for crops that cannot withstand prolonged wet conditions.

3. Prolonged wet conditions often result in an increase in root and foliage diseases. In some cases water in contact with fruit or vegetables will adversely affect quality.

4. Wet soil conditions in low spots can seriously affect maturity and harvest costs.

Land leveling equipment should be available and used as part of the irrigation process. It is not feasible for all farmers to acquire this specialized equipment to use for only a few days per year, however. The team therefore suggests that two units be purchased initially and operated by a custom land preparation company. Costs for this service would be included in irrigation system installation loans. Since some farms will be small and some large, two sizes of equipment for land leveling should be purchased to achieve operational efficiency.

7. Advertising and promotion of the Project.

During conversations the team gained the impression that there had not been consistent promotion of this program to farmers. Courses for extension agents and technicians include discussion of the Project and its merits but this does not assure that all farmers know that it is possible to secure loans, develop their farms and sell their products in foreign markets. Many prospective entrepreneurs still do not know of the services of the program's services and the FUSADES assistance available to them.

More advertising and promotion is urgently needed on a continuing basis at all levels, including farmers, truckers, packers and shippers. Too, more effort may be warranted in the U.S. to develop joint ventures -- especially in the packing, freezing and marketing of fruits and vegetables.

Section Four

OTHER IMPORTANT OBSERVATIONS

During the course of conversations with the staffs of USAID, FUSADES, CORPREX, CENTA, DGRD, ENA, OSPA, CENCAP, OA, et al., other important problems were mentioned which were not included in the Scope of Work. Some of these may already be under consideration by USAID, FUSADES or private sector agencies. The team feels that it is its responsibility to bring these issues to the attention of Project managers for their consideration. They can be grouped under the following headings:

A. Project Coordination

RECOMMENDATIONS

1. That AID discuss the possibility of the public sector Administrative Council and FUSADES meeting monthly to better coordinate the development of annual work plans and to exchange information on progress and problems which the two groups can solve together.

2. That the technical staffs of CENTA and FUSADES meet monthly to discuss progress and agree on future cooperative work plans.

3. That USAID authorize PL-480 funds to be used by CENTA to rent pickups and buy locally any equipment or materials (sprayers, seeds, tools, fertilizers, etc.) needed for research and demonstrations related to the Project.

DISCUSSION

In El Salvador, there have been periods of cooperation between the Government and the private sector. During other periods, public and private interests have been widely separated. It appears to us that, until about six months ago, there was strong disagreement between the Government and the private sector. As a result, FUSADES has been establishing its own field experiments and making technical recommendations to farmers without any input from CENTA or other Government agencies.

However, during discussions the team was pleasantly surprised to find a new atmosphere in the public sector at the technical level. This can possibly lead to a new era in cooperation.

The team fully recognizes that differences exist between technicians and Government officials. It was not in the country long enough to evaluate the depth and intricacies of these two distinct perspectives. The team was convinced, however, that technical leaders presently feel that they can collaborate with the private sector and wish to proceed rapidly. This is very positive. Both groups have much to gain from collaboration.

Unfortunately, the team did not find the same interest within the private sector. Individuals seemed to be telling us that they had "talked with the public sector once and they didn't give us the information we needed so we are not interested in further conversation. We plan to obtain information we need without further dialogue with the public sector."

CENTA's Sub-Director and technical staff stressed that they wanted to collaborate with FUSADES on this Project. They are willing to assign several of their horticulturalists, soil scientists, pathologists and entomologists full-time to conducting research on crops that will be grown by loan recipients. They can work, if provided transportation, in the areas where loans are being made. They offered their laboratory and other technical support needed for a successful production program. In addition, they are updating the technical information contained in old production bulletins and will publish new editions within the next few months. They feel these will assist farmers producing for export as well as for their own use.

CENTA is handicapped by not having the vehicles and irrigation equipment promised under the Project (AID has as yet not approved these purchases in spite of the fact that the documentation was completed some 18 months ago). Without this equipment, they cannot be effective in conducting research at CENTA and in the Project areas. They will have to develop improved field/laboratory analysis correlations so that their fertilizer recommendations will be accurate for new crops. They can also help to test new varieties for export.

After the team's discussions with the management and staff of CENTA, the Deputy Director of CENTA called the Director of Riego to reaffirm their interest in collaborating on this Project. He also requested a meeting with FUSADES to find out what they needed and how CENTA's staff could cooperate with Riego in the field. A meeting was held the next day. The team understands that it was quite successful and that a new climate of cooperation was beginning to develop. Other meetings are already planned between the two groups.

These two groups cannot continue to work separately. Each needs the cooperation and assistance of the other. For example, if a loan recipient needs water from a stream, either he or FUSADES must secure approval from the DGRD. If FUSADES continues to do all of its own research (as is now planned) it will have to duplicate the soils, pest identification and other laboratory facilities of CENTA. If FUSADES needs to identify a new disease or insect, it will always have to import a specialist or increase its own staff. Today, much of this capability exists at CENTA.

There is a need for the two groups to immediately begin to work together. If FUSADES duplicates efforts and is successful, its activities will eventually be curtailed. No public sector in Latin America will allow a private sector entity to continue operating indefinitely without close cooperation with the public sector.

There is no formal schedule for meetings between Project-assisted Government agencies and FUSADES. It is essential for both groups to discuss their progress and future plans, and Project clients' production and processing problems. Together they may find solutions that each group, working alone, might not.

Many of CENTA's present clients will not participate in FUSADES' export promotion programs. Nevertheless, they often produce vegetables for the local market or could do so with proper training. It is estimated that El Salvador now imports annually from Guatemala some 7000 Ha. of fruits and vegetables that could be grown in the country.

B. Improving CENTA's Technical Capability

RECOMMENDATIONS

1. That USAID consider granting graduate scholarships to CENTA staff for studies in soils, pathology, entomology, oleraculture, pomology, plant breeding, agricultural engineering and agronomy.

2. That funds be provided to the CENTA library for purchase of publications essential to the production, post-harvest handling and marketing of fruits and vegetables.

DISCUSSION

Properly trained professionals are an absolute necessity if El Salvador is to develop its non-traditional agricultural potential. Few of CENTA's employees have advanced degrees related to production and post-harvest technology for crops to be grown under this Project. Staff consists almost entirely of Ingeniero Agronomos with general training; only five have M.Sc. degrees. None have training in fruit and vegetable research or production technology.

Advanced training for CENTA staff was not considered in the Project's design. With the present positive attitude in CENTA and probable needs in the near future for large numbers of new technicians, it is imperative for CENTA staff be sent for advanced training.

A large portion of the Water Synthesis II assistance funds have not been spent. Possibly, some of these funds can be used to train selected CENTA employees in olericulture, pomology, soils, pathology, entomology and post-harvest technology.

In the Project budget there are no funds for publications on commercial production of fruits and vegetables for the CENTA library. And, CENTA does not have catalogs from the major seed companies of the U.S. and Europe. Their collection of material from the American Society for Horticultural Sciences is woefully dated; this series is one of the best sources of fruit and vegetable research findings in the world. Likewise, CENTA's scientific abstract collection is dated. In order to avoid duplication of earlier efforts elsewhere, it is essential to improve the library.

C. Budget Year

RECOMMENDATION

That the Project year be changed from the calendar year to July 1 - June 30 in order to coincide with the planting and production year.

DISCUSSION:

At present, the Project operates on a calendar year basis. However, cultivation and marketing of most of the winter crops for which El Salvador has a comparative advantage will occur between September and April. If CENTA were to begin planting in October for harvest in January or February, its fiscal year would terminate on December 31 before crops matured. CENTA would have no funds to continue work until a new annual plan was approved by the Government and AID. At times this has taken several months. Crops could die and results of experiments could be lost.

We suggest that AID and the GOES study the possibility of changing the Project fiscal year to July - June in order to overcome this problem. In our talks with OSPA, we learned that this could be done even though the Government fiscal year runs from January to December.

D. Market News Information

RECOMMENDATION

We suggest that FUSADES diffuse PRONET price reports daily throughout El Salvador by both radio and newspaper.

DISCUSSION

FUSADES now receives PRONET market news on a regular basis. This information is provided to growers, packers, processors and exporters only when they visit the FUSADES office. FUSADES has not considered making the information available to newspapers or radio as a tool to attract new clients.

An excellent way to encourage farmers to consider production alternatives is to provide them with information on which to base decisions. Market news is key to this process. Experience has demonstrated that, when farmers hear about high prices for export products and compare them with process their current crops, they soon change their growing patterns.

It has been established through the Basic Village Education Research Project in Guatemala that radio is an excellent means of reaching large numbers of farmers with up-to-date information at low cost. Broadcasting PRONET information would be excellent advertising for FUSADES and could have a major impact on farmers' decisions on what to produce and for what market.

E. CENTA's Readiness to Conduct Research This Year

RECOMMENDATION

We suggest that AID make every effort to help solve CENTA and RIEGO operational problems in order to facilitate the initiation of research this season.

DISCUSSION

CENTA officials wanted to begin research this season (September 1987 - May 1988) but U.S. advisors did not arrive. CENTA also lacked needed equipment promised under the Project, such as an irrigation system for the field station at Zapotitlan, vehicles and visual aids. These had not yet been approved by AID.

These delays detract from the momentum of the Project. They are inexcusable. Interest at CENTA is presently high but if the organization does not receive the support offered for their part of the program, the interest will wane. USAID must clear any obstacles that are holding back this work.

Not all Project research can or should be carried out at CENTA's research station. Many diseases and soil problems are indigenous to other areas of the country; it is imperative for CENTA to work in these regions. Officials agree with this but pointed out that they lacked transportation to go to the field. Again, they did not have AID approval to purchase the vehicles authorized under the Project. The specifications for these vehicles were developed by the Water Synthesis II advisors some 18 months ago.

At the time the consulting team was in El Salvador the export growing season was just beginning. CENTA officials stated that they could make at least five technicians available immediately. Some PL 480 funds were available. The team recommended that CENTA officials request USAID authorization to use these funds to rent vehicles to start field work.

CENTA has met recently with FUSADES to determine areas for collaboration this season. Perhaps, in regions where FUSADES has made loans and where packing plant construction or new processing operations will begin next year, CENTA could begin to develop the production packages needed by growers. Some growers must have irrigated land available; they might permit CENTA to put in experiments on their land. Pathologists and entomologists could examine fields now being planted and monitor them throughout the growing season to study any diseases that appear. USAID should watch progress in this area closely.

CENTA intended to send their technicians to the field daily. Some fields are at long distances from CENTA'S headquarters; it would be a poor use of time for technicians to travel for two hours each way. Technicians should be stationed in areas where work is to be done. In production of

vegetables, it is essential for technician to be in the field daily. CENTA recognized this but lacked lodging for technicians. To rent a house for the season requires CENTA to provide an impossibly long list of information to the government. FUSADES might be able to assist in this area; the organization has some discretionary funds and does not have to comply with the same government regulations as CENTA.

Problems can be solved if a positive dialogue can be initiated between CENTA, FUSADES and AID. All parties must remember that the growing season is now underway and that they must work together to make the most progress possible this year.

Section Five

LESSONS LEARNED

The following are the most salient points enunciated during discussions with public and private sector officials.

A. Time Allotted

Starting a new area of agricultural production requires much more time, technical assistance, training and financial support than has been provided under this Project. This is especially true since the Project attempts to implement major changes in both public and private organizations and to create a new private sector agency, CORPREX. The Project's tasks are made even more difficult by the country's political and social problems and the changes taking place in the rural sector. Not only must the Project overcome production and marketing obstacles but it must also serve to convince individuals to invest in an extremely risky business during a period when confidence is not high.

B. Initial Availability of Technical Assistance

Leadership on the part of USAID and its contractors is extremely important to introducing new technologies and cultivation systems. When USAID does not have the required technical expertise on its staff, it is very important to provide from the outset technicians with both theoretical and applied experience in the commodities to be promoted.

Unfortunately, at the start of this Project this expertise was not available on a continuous basis. Thus, farmer interest has eroded during the last two years. Now that the advisors are arriving, it will be difficult to recover some of the momentum lost to date. For the public sector, no assistance was available until some two years after Project approval. Eighteen months of the implementation period have been lost. Future Projects that attempt to introduce new products and systems should be planned to last at least eight years. They should have top-flight expertise available from the start.

C. Public and Private Cooperation

Coordination between the public and private sectors was poor at the beginning of the Project. In part this was the result of a lack of confidence in the public sector on the part of the private groups and individuals involved. Likewise, the public sector agencies were engaged in supporting the land reform program of the Government. Thus, after an initial attempt at dialogue, both groups went their separate ways. Both public and private organizations feel, nevertheless, that their activities are complementary and that they should work together.

Early in the Project USAID attempted to bring public and private sector groups together with only moderate success. Following this initial

effort, it appears that the AID staff began to work with each group individually. Public officials mentioned that USAID's interests had seemed to lie with the private sector and that the Agency had not approved requests for equipment and technical support promised to government organizations under the program. Public officials' interest waned.

In mid-1987, there was a change in the attitude of the public sector agencies, especially at CENTA. This change apparently was not made clear to USAID's new staff managing the Project. As a result some time was lost before they could begin to bring the two groups closer together. This experience has shown that positions and attitudes can change in important ways over time, but that perseverance is necessary on a continuing basis to overcome obstacles to cooperation and collaboration.

D. Informing Salvadoran Government Officials of the Project

When the Project agreement was signed in 1985, copies were provided to Government leaders for transmittal to their staffs. In some cases this was done. In others, either agencies did not receive copies of the agreement (and thus were unaware of their assigned roles) or received copies but continued their previous agendas. Too, due to rapid turnover in senior Government staff, directors often did not know the full details of the program and did not take actions expected of them. USAID frequently assumed that these agencies fully understood the agreement, their roles and responsibilities.

It is evident that USAID should not assume that new local personnel have been fully briefed and have access to Project documentation. National Governments often do not have good systems for briefing new staff. AID must develop its own system and be prepared to provide copies of the most important Project documentation. This should be done at first meeting.

E. Continuity of USAID Administration

During the two years that this Project has been in operation, USAID has had several different employees backstopping it. At times different employees, and even different divisions, monitored the private and public sector components. This is quite conducive to breakdowns in Project coordination.

One person within USAID should hold responsibility to the Mission Director for success of the entire Project. This person should be at post for at least four years during the implementation period, and should have competent local technicians assisting him or her in its management.

ANNEXES

ANNEX 1: PEOPLE INTERVIEWED

ANNEX 1. PEOPLE INTERVIEWED

NO.	NAME	POSITION
	AGENCY FOR INTERNATIONAL DEVELOPMENT	
1.	Kenneth Ellis	Rural Development Officer
2.	Clemence J.Weber	Deputy Rural Development Officer.
3.	Jeffrey H. Allen	Agriculture Officer
4.	Frank Skowronski	Private Development Officer
5.	Felix Rodolfo Cristales	USAID, RDO.
6.	Luis Antonio Gonzales	USAID. RDO.
	FUSADES	
1.	Eduardo Nunez Iraheta	Executive Director/FUSADES
2.	Raphel Alvarez Zaldivar	Director of Programs/FIDEX
3.	Filadelfo Leopoldo Baires	Executive Director/RIEGO
4.	Luis Carlos Paloma	Programa de RIEGO,
5.	Rafael Alverez Zaldivar	Director/FIDEX
6.	Genaro Martinez	Controller/Supervisor
	CENTA	
1.	Carlos Garcia Barrios	Sub-Director, CENTA
2.	Jose Victor Salazar	Project Coordinator
3.	Jose Rene Alvarado Lozano	Technical Coordinator
4.	Avidio Bruno	Chief, Div. Tech. Seeds
5.	Oscar Mauricio Coto Amaya	Chief, Dept. Horticulture
6.	Tojo Enrique Calderon	Chief. Div. Research
7.	Victor Manuel Rodriguez	Dep. Chief, Research
8.	Edgar Noel Ascencio	Chief, Research Unit
9.	Eduardo Huidoloro	Extension Service Advisor CENTA/STC/AID
	GENERAL DIRECTORATE OF IRRIGATION AND DRAINAGE	
1.	Fernando Martinez Novoa	Director General, DGRD
2.	Jose Guadeloupe Mendez	Chief, Div. of Irrig.Tech.
3.	Rene Gonzalo Menendez M.	Project Coordinator

OSPA

1.	Salvador Centena Rivera	Chief, Division of Operations and Administration.
2.	Joaquin Alfredo Flores	Chief, Division of Projects
3.	Vilma Osorio deChavarria	Project Specialist
4.	Martha Rosales de Lopez	Programming Specialist for International Cooperation

OCOPROY

1.	Camilo Roberto Guevara M.	Executive Coordinator
2.	Salvador Araya Zelaya	Executive Assist.

CENCAP

1.	Carlos Cruz Avalos	Director General
2.	Gilsenio Orrellana	Technician in Agricultural Training
3.	Luis Ernesto Huevo	Technician in Agricultural Training
3.	Ricardo Jiminez	Chief, Dept. of Planning

ENA

1.	Marcos Gregorio Sanchez	Director General
2.	Samuel Salazar Genovez	Coodinator of Projects
3.	Leonides Aparicio	Advisor

CORPREX

1.	Guillermo Alfaro Castillo,	President/CORPREX

AGRIDEX

1.	Nelson Olof Gonzales	Irrigation Engineer

ANNEX 2: STUDENT INTEREST IN IRRIGATION MANAGEMENT AT ENA

ANNEX 2. STUDENT INTEREST IN IRRIGATION MANAGEMENT AT ENA

Results of a Questionnaire given to the Students at the Escuela Nacional de Agricultura.

QUESTION: If the school , in 1988, offered a degree at the superior level in AGRICULTURA BAJO RIEGO, giving the degree of"Licenciatura" or "Ingenero Agronomo" in this field,as a compliment to your Agronomo degree during two or three years, would you be interested in studying in this field?

Student year	YES		NO		ABSTAIN		TOTAL	
	No.	%	No.	%	No.	%	No.	%
Third year	35	76	9	19	2	4	45	100
Second year	49	74	17	25	-	-	66	100
First year	75	36	12	13	-	-	87	100
TOTALS	159	76	38	19	2	1	199	100

ANNEX 3: THE CURRENT LOAN PORTFOLIO OF FUSADES

ANNEX 3. CURRENT LOAN PORTFOLIO OF FUSADES

According to the information provided to this Evaluation Team, the status of the loans granted up to November 1, 1987 are as follows:

A. MODEL "A" LOANS

LOAN RECIPIENT	AMOUNT (Colones)	PURPOSE
1. Jose Manuel Moreno	52,301	irrig. equip. for 4 mz's.of cucumbers, tomatoes and string beans.
2. Inversiones Santa Maria. S.A.	167,500	Drip system for15 mz's. of coffee.
3. Sociadad La Esperanza SA	10,000	Drilling deeper well.
	77,828	Drip system for 4.75 mz. of roses.
4. Carlos Rene Granilla Hernandez	197,000	Landleveling and improvement of an existing irriga-tion system.
(same)	34,606	Electric pumping system.
(same)	30,059	Electric pumping system & accesssories for sprinkler irrigation of 11 Mz's of coffee.
(same)	102,280	Micro-spray irrrigation system for 8mz's. of fruit trees.
5. Exportadora Salva-dorena S.A.	1,960,000	Irrigation equipment for 100 mz's. of canteloupe and extra equipment for irrigation.
Subtotal Model "A:"	19,204,084	

B. MODEL "B" LOANS.

1. Sociadad Agricola Samayoa Lopez Avila	367,724	Working capital, off-shore raw material purchase and marigold processing.
2. Agroindustrias Diversas S.A. (292 stockholders)	117,220	Drip irrigation for 100 mz's. of cucumbers.
(same)	2,183,336	Working capital.
3. Pedro Urquilla Shonenberg	4,256,240	Construction and equipping processing plant for freezing fruits and vegetables.
Subtotal Model "B:"	6,924,520	
TOTAL ALL LOANS	26,128,604	

ANNEX 4: STATEMENT OF WORK

USAID El Salvador
AID Project 519-0303

Water Management
EVALUATION No. 1 - SCOPE OF W...

I. PROJECT TO BE EVALUATED:

The Water Management Project consists of te... to the public and private sectors of El Salvador to provide policy support, technical and credit assistance, technology transfer, and training services to producers, packers and exporters of irrigated, labor-intensive non-traditional agricultural products to extra-regional markets.

A. Project Strategy:

The role for irrigation in El Salvador is a narrow, yet very critical one. It hinges on shifting agriculture to high value, labor-intensive export crops that create jobs and generate foreign exchange. Because development of irrigated agriculture has proceeded at a slow pace, the strategy of the Project focuses on:

1. accelerating the transfer of cost-effective technologies in irrigation and irrigated agriculture;

2. setting up more agile credit mechanisms for the needed investment in precision irrigation systems and

3. developing export marketing channels to attract private investment into the irrigated production of high-risk, but profitable nontraditional export crops.

B. Project Description:

The goal of the Project is to generate employment, income and foreign exchange for El Salvador. The purpose of the Project is to promote diversified irrigated farming in El Salvador through institution strengthening, technology transfer, training, and credit assistance. Project activities are divided into two segments:

1. support of public irrigation planning, extension and training institutions to provide improved support to farm-level water management and irrigated agriculture; and

2. support of private firms engaged in or directly connected to intensive agriculture and export marketing research and development.

C. Public Sector Activities:

The objective of the public component of the Project is to provide technical and financial assistance to the following public institutions so that GOES efforts in extension, training and planning of irrigation are strengthened:

1. CENTA - the Agricultural Technology Center;
2. ENA - the National School of Agriculture;
3. CENCAP - the National Training Center;
4. DGRD - the General Directorate of Irrigation and Drainage;
5. OSPA - the Agricultural Sector Planning Office; and
6. OA - the Office of Water

The extension and training institutions, CENTA and ENA, will be provided long and short-term technical assistance, training in and outside of El Salvador, and equipment in order to increase their capacity to train farmers, agronomists and extensionists in irrigation and irrigated agriculture. CENCAP will be the site of numerous in-country courses which the Project will support.

The planning institutions, DGRD, OSPA, and OA, have responsibilities for overall planning and evaluation of public irrigation development programs. They will receive technical support and training in these areas, as well as research in irrigation policy.

D. Private Sector Irrigation Development:

The objective of the private component is to strengthen the technical and financial capability of private firms and farms to exploit the abundant water resources which lie in year-round rivers, streams and accessible aquifers for the production and marketing of labor intensive, non-traditional export crops.

FUSAIES, (the Salvadoran Foundation for Economic and Social Development) is the grantee for this component and the overall coordinator of the component activities. COPPREX (the Corporation for Irrigated Export Agriculture) a private irrigation association which includes irrigation equipment suppliers, irrigated agriculture consultants, farms and marketing firms is responsible for implementing this component of the Project.

Technical assistance to COPPREX consists of two long-term advisors (a Senior Agribusiness Advisor and Controller/Supervisor) and the local employees necessary to provide technical and financial assistance to participating farmers, packers/processors and exporters of labor intensive, nontraditional crops produced under irrigation.

Assistance provided by COPPREX to promote the development of irrigated agriculture consists of two basic support models:

1. Model A - Involves providing the technical and financial support necessary for the purchase and installation of precision irrigation systems on private farms; and

2. Model B - Involves the selection of private firms, through an open bidding process, to develop five pilot projects requiring precision irrigation in diversified export crops and export marketing.

A special R & D Credit Fund, has been established in a local bank to finance subprojects under both models.

CORPREX does not implement any of the pilots under Model B but will simply provide a mechanism to assist interested private firms in proposal development, and provide ongoing technical support to the firms during the first few years of irrigation development and production and marketing research and development.

Specific short-term technical assistance to Model B pilots will be made available under the Project. Irrigation equipment sellers and well drilling firms are being encouraged to expand their field agent staffs to provide technical support to the participating farmers through a program of temporary salary support and training.

E. Cost of the Project:

The total cost of the Project is $25.2 million. AID is providing $5.3 million in grant funds for the public sector component. (This includes $0.7 million to finance start-up and evaluation costs of the overall Project). AID is also providing $13.5 for the private sector component. ($10.0 million of this is for the R&D Credit Fund). An additional $2.5 million in local currency from the PL-480 Program is being made available as counterpart to the Project activities. Participating institutions are providing an estimated $3.9 million in local currency in the form of in-kind contributions.

II. PURPOSE OF THE EVALUATION:

A. Timing:

Three evaluations are scheduled to take place during the life of the Project. This will be the first and is taking place approximately 24 months after Authorization (8/26/85). A second, originally scheduled for mid-LOP will likely take place 18 months from now; the third at about the time of the PACD.

B. Reason for the Evaluation:

Both public and private sector components of the Project have been slow to get started. While considerable complementarity exists between components, particularly in the training and the technical assistance programs, the elements of each are distinct and herein lies many of the reasons for conducting the evaluation at this time.

There is also a concern that the project may be overdesigned. While differences, actual implementation and original project design may be partly due to the delays in getting started, it appears that some of the tenets of the Project are no longer viable. For example, the Project assumption that irrigation equipment dealers can and will provide quality technical assistance to project beneficiaries has not been proven to be true. Also high equipment prices has dampened farmer enthusiasm to take out irrigation loans. The presence of many of these dealers on FUSADES' Board of Directors and/or COPPREX's Board may constitute a conflict of interest that merits further consideration. The evaluation team must examine the validity of this and other critical Project design assumptions in arriving at the answers to the questions detailed below.

The above concerns about the design of the Project will have to be examined in the context of the recently announced, but not yet completed, realignment of FUSADES' programs dealing with agriculture such that:

1) COPPREX's role in promoting irrigation credit and providing technical assistance is being changed. Its financial operations will be passed to FIDEX, a mechanism devised by FUSADES to administer investment lines of credit for both industrial and agricultural lending. COPPREX will continue and eventually become independent of FUSADES but will specialize in promoting irrigation technology and providing technical assistance.

2) DIVAGRO (an agricultural diversification program funded under AID Project 519-0265) will be expanded to provided technical backstopping for both the R&D Credit Fund and new Project activities under an AID funded Agribusiness Project now in design.

The overall reason for the evaluation is to examine certain elements of the original design of the Project to determine if they should be reprogrammed, under present and expected circumstances. If a reprogramming is indicated, the evaluation should map out recommendations in clearly articulated, actionable statements.

C. End Users of the Evaluation:

USAID/El Salvador, FUSADES, COPPREX and selected entities and individuals of the Ministry of Agriculture will be the principal beneficiaries of evaluation findings. Not all of the document will be distributed to all the beneficiaries. The findings, recommendations and conclusions should be

drafted and translated to facilitate distribution of only those results directly pertinent to the entity involved.

While a secondary consideration, selected results of this evaluation will also be shared with the participants in the Water Management Workshop tentatively scheduled for the fall of 1987 which is being organized by LAC/DR/RD. To the extent the findings are relevant to the topics of the Workshop they should be so grouped in a separate section.

D. Timing and Other Considerations:

The evaluation should get underway as soon as possible. The August 1987 start-up date for the evaluation is scheduled in the Mission's monitoring and evaluation (M&E) plan and approved in the Action Plan.

The results of the evaluation will probably not have much impact on the manner in which CORPREX/FUSADES is proceeding to respond to farmer interest in loans during the current rainy season. However, as interest builds in the program, the nature of the relationship between FUSADES, CORPREX, irrigation equipment suppliers, technical assistance firms, and end users will have to be reviewed and very possibly revised, particularly in view of the expected role of FIDEX and DIVAGRO. Similarly, the ability of the public sector entities to carry out their expected roles should be examined in light of problems of institutional budgetary support and administrative capacity.

III. STATUS OF PROJECT ACTIVITIES TO DATE:

Except for recent months, progress in implementing the Project since Authorization has been slow.

The A.I.D. direct contracts for technical assistance for both public and private sector components have only recently entered into final negotiations. Signature is expected by late July and arrival of the advisors in September 1987. FUSADES has succeeded in contracting advisors for CORPREX: the Senior Agribusiness Advisor, the Controller/Supervisor and the Training Advisor.

The R&D Credit Fund has been established within a local bank, and CORPREX's statutes of incorporation have been legalized. Formal publication in the official gazette is scheduled for August 22, 1987. The regulations governing the administration of the R&D Credit Fund have been developed and are being formalized.

CORPREX has proceeded to promote irrigation, assist in the design of irrigation systems, prepare feasibility studies, review and formally consider loan applications, and has approved four irrigation loans.

Progress in the public sector has not been as notable. Action plans for the implementation of activities have been submitted by the majority of the public sector entities but have not advanced significantly pending the arrival of the technical assistance teams.

IV. STATEMENT OF WORK:

The team of evaluators will focus its investigation on the following questions:

A. Is ENA's role as defined in the PP still valid given administrative and budgetary changes which have occurred in the past year? Will it be able to carry out its responsibilities under the Project?

B. What is or should be CORPREX's role in the implementation of the Project?

C. Can the objectives of the private sector component be met with greater efficiency and less potential conflict of interests under FUSADES' proposed restructuring of implementation roles and responsibilities?

D. Is the Export Market Risk Guarantee (EMRG) mechanism of the P&D Credit Fund necessary?

E. What additional incentives, if any, should be given to irrigation equipment-supply firms to increase their promotional activities?

V. METHODS AND PROCEDURES:

The manner in which the evaluation team will set out to obtain the information needed to answer the above questions is expected to consist mostly of personal interviews with key representatives of the institutions involved, and an examination, in the case of ENA in particular, of its performance under A.I.D. Project 519-T-0265 "Agrarian Reform Sector Support." The evaluators should also examine whether DIVAGRO, as expanded by FUSADES' realignment, will be capable of carrying out the Project's objectives as efficiently as originally contemplated in the Project Paper.

A. Duration and Time Phasing of the Evaluation:

The Mission expects that this evaluation will be carried out within a period of three weeks. No special phasing of the arrival of the evaluation team is necessary. There should be two evaluators on the team to cover the implementing entities adequately and expeditiously.

B. Logistical Arrangements:

The evaluators are authorized to work a six-day work week including holidays. All interviews, document reviews, data collection, analysis and report writing will take place in San Salvador and its environs. Few if any site visits to the field are anticipated. The security situation in El Salvador requires that all Mission personnel take precautions in moving about and the evaluators will be governed by the same regulations pertaining to Mission personnel. Beyond that, there are no unusual hardships or rigorous

E. Other Evaluations:

A discussion of any previous evaluation(s) reviewed with a brief description of conclusions and recommendations made in earlier report(s) should be included in the report. The evaluators should discuss briefly what use was made of other evaluation(s) in their review of the Project, for example the 0265 evaluation.

F. Lessons Learned:

This section should present, to the extent feasible, any development benefits that have resulted from the Project to date, including a discussion of the techniques, approaches, Project design considerations which proved to be most effective or had to be changed and why. A discussion of what aspects of the Project have not worked or have not been carried out as designed, and why, should also be included.

G. Contents:

The report should also include a paginated Table of Contents.

H. AID Evaluation Summary:

The evaluation team should prepare, subject to Mission review and approval, a draft abstract for inclusion in the A.I.D. Evaluation Summary.

I. Submission of the Report:

The evaluation Team Leader will be responsible for seeing the report through to a timely, professional completion. The Executive Summary portion of the report should be translated into Spanish. The final draft of the Executive Summary and the report in English, will be submitted one week before the expected departure of the Team Leader. The final Spanish translation of the Executive Summary should be submitted within 30 calendar days of receiving the final draft in English. The finished, final and formally completed report in English should be submitted with the final version of the report in Spanish.

J. Debriefings:

The Team Leader will be responsible for scheduling weekly briefings, as a minimum, with the designated Mission staff. A formal entrance and exit briefing with participation by senior Mission management and staff offices will be scheduled. Additional briefings and consultations will be scheduled as necessary to insure the evaluation is on track to a timely and responsive conclusion.

conditions that would unduly affect working conditions. Administrative and logistical support necessary to produce the evaluation report will be the responsibility of the contractor.

VI. COMPOSITION OF EVALUATION TEAM:

The evaluators -- led by a team leader responsible for final editing and preparation of the report -- will be expected to be well-experienced agriculturalists who are knowledgeable about irrigation and who have past experience evaluating water management projects or projects with water management components.

Spanish language, certified by the contracting firm, at the equivalent of FSI S-3, R-3 is indispensable.

VII. REPORTING REQUIREMENTS:

The evaluation team should prepare a written report (in English and in Spanish) containing the following sections:

A. Executive Summary:

This should include the purpose of the evaluation, methodology used, findings, conclusions, recommendations, and comments on lessons learned. It should be a self-contained document and complete enough so that the reader can understand the evaluation without having to read the entire document.

B. Scope of Work:

This section should include a copy of the scope of work under which the evaluation was carried out. The methodology used should be explicity outlined. Any deviation from the scope will be explained.

C. Team Composition:

This section should list the evaluation team, including host country personnel, their field or expertise and the role they played on the team.

D. Evaluation Findings, Conclusions and Recommendations:

Each of these should be clearly presented, enumerated if possible, grouped by entity being discussed and cross referenced so as to adequately support the evaluation. They should be presented in a separate section of the report if convenient, so that the reader can easily locate them. The recommendations should be priority actions that can be taken by the USAID and implementing entities.