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UNCLASSIFIED

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DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D.C. 20523

PARAGUAY
PROJECT PAPER
MINIFUNDIA CROP INTENSIFICATION

LAC/DR:79-14

Project Number:526-0118

UNCLASSIFIED

AUG 15 1979

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR (LAC)

FROM: LAC/DR, Marshall D. Brown

Problem: Authorization of a FY 79 \$1.9 million grant for Minifundia Crop Intensification in Paraguay.

Discussion: The purpose of the project is to establish within CREDICOOP (a small-farmer oriented agricultural cooperative federation) an agribusiness capability on a pilot basis to promote and finance the supply of inputs and, consequently, the production, processing, and distribution/export of labor-intensive food crops such as fruits and vegetables in the minifundia area of central Paraguay.

The project will establish a system for the production and marketing of selected fruits and vegetables by approximately 600 small farm families. These families will be recipients of technical assistance and credit for production and marketing provided through CREDICOOP. Farm income gains of 20% annually are anticipated.

The total cost of the project over the five year implementation period will be \$4.49 million. The AID grant of \$1.9 million will finance short and long-term technical assistance, small farmer credit, construction of storage and processing facilities, related office space and equipment, training (including video tape facilities), and evaluation. CREDICOOP, the grantee and implementing agent, will contribute approximately \$2.58 million in small farmer credit, construction, personnel and training, and per diem, transportation and operating expenses. In addition, the Swiss Government will contribute \$10,000 in technical assistance in the area of farm implement technology. The CREDICOOP contribution accounts for 57% of total project cost, thus satisfying the requirement of Section 110(a) of the FAA.

The DAEC reviewed and approved the project on June 13, 1979, with the following modifications to the project paper:

- (1) that the life of the project be extended from three to five years to allow sufficient time for the full utilization of technical assistance;
- (2) that the project budget, benefit/cost analysis, production plan, project flow chart, and implementation plan be revised and expanded to reflect the longer duration of the project;
- (3) that an implementation plan for the life of the project be prepared;
- (4) that a projected consolidated balance sheet and source/application of funds to be added to the PP and additional financial

analyses be provided to substantiate projected credit needs; (5) that a Condition Precedent to Initial Disbursement be added to provide for a time-phased implementation plan submitted by CREDICOOP; (6) that a Condition Precedent to disbursement for a refrigerated truck be added which requires a study of alternative methods for meeting project transportation needs; (7) that a covenant be added to require CREDICOOP to submit annual work plans prior to incremental funding in subsequent years; (8) that a section be added to describe how CREDICOOP will manage the project activities and modifications in the structure of CREDICOOP as a result of the project; and (9) that technical assistance in agribusiness management be added to reinforce institution-building aspects of the project. As a result of the inclusion of additional technical assistance and a re-calculation of project credit requirements, AID's contribution to the project increased from \$1.5 million to \$1.9 million and CREDICOOP's from \$1.9 million to \$2.58 million.

The Initial Environmental Examination recommending a Negative Determination was approved on June 18, 1979.

The Bureau for Human Rights and Humanitarian Affairs concurs in the authorization of this project.

The project is included in the FY 1979 Congressional Presentation; an Advice of Program Change is not required.

Recommendation: That you sign the attached Project Authorization and Request for Allotment of Funds (PAF) Form, thereby authorizing USAID/Paraguay to negotiate and sign a Project Agreement for the Minifundia Crop Intensification Project.

Attachment: TAB A - PAF

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D. C. 20523

ASSISTANT
ADMINISTRATOR

PROJECT AUTHORIZATION AND REQUEST FOR ALLOTMENT OF FUNDS

Name of Country: Paraguay
Name of Project: Minifundia Crop Intensification
Number of Project: 526-0118

Pursuant to Part I, Chapter 1, Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize a Grant to the Central Cooperativa Nacional de Ahorro y Credito in Paraguay ("CREDICOOP") of not to exceed Four Hundred Forty-Five Thousand United States Dollars (\$445,000) (the "Authorized Amount") to help in financing certain foreign exchange and local currency costs of goods and services required for the project described in the immediately following sentence. The project consists of assisting CREDICOOP, in cooperation with the Ministry of Agriculture's extension service ("SEAG") and the National Institute of Agronomy ("IAN"), to provide small land holders with the technology, extension services, production credit, transportation services, and processing and marketing facilities necessary to diversify and intensify their production of fruits and vegetables (the "Project").

I approve the total level of AID appropriated funding planned for the Project of not to exceed One Million Nine Hundred Thousand United States Dollars (\$1,900,000), Grant, including the Authorized Amount, during the period FY 1979 through FY 1983. I approve further increments during that period of Grant funding up to \$1,455,000, subject to the availability of funds in accordance with AID allotment procedures.

I hereby authorize the initiation of negotiation and execution of the Project Agreement by the officer to whom such authority has been delegated in accordance with AID regulations and Delegations of Authority, subject to the following essential terms, covenants and major conditions, together with such other terms and conditions as AID may deem appropriate:

A. Source and Origin of Goods and Services

Except for ocean shipping, goods and services financed by AID under the Project shall have their source and origin in Paraguay or in the United States, except as AID may otherwise agree in writing. Ocean shipping shall be procured in the United States, except as AID may otherwise agree in writing.

B. Conditions Precedent to Initial Disbursement

Prior to any disbursement, or to the issuance of any commitment documents under the Project Agreement, CREDICOOP shall, except as AID may otherwise agree in writing, furnish to AID, in form and substance satisfactory to AID:

(i) Evidence that Project subagreements have been signed with the directors of SEAG and IAN and that such subagreements (a) clarify the operational and fiscal responsibilities of all the entities named therein, and (b) demonstrate adequate support and commitment on behalf of the Government of Paraguay to proceed with the implementation of the Project; and

(ii) A time-phased implementation plan for the Project.

C. Condition Precedent to Disbursement for Technical Assistance

Prior to any disbursement, or to the issuance of any commitment documents under the Project Agreement, to finance Title XII and/or other long-term technical assistance activities, CREDICOOP shall, except as AID may otherwise agree in writing, furnish to AID, in form and substance satisfactory to AID, a signed contract for each such activity.

D. Conditions Precedent to Disbursement for Specific Project Activities

Prior to any disbursement, or to the issuance of any commitment documents under the Project Agreement, to finance any of the following specific activities, CREDICOOP shall, except as AID may otherwise agree in writing, furnish to AID, in form and substance satisfactory to AID:

(i) For building construction: a detailed, time-phased plan for completing the building, together with copies of all bid proceedings and contracts related to such construction;

(ii) For any procurement: a written description of the procurement procedures to be followed by CREDICOOP;

(iii) For any training: a time-phased plan for all in-country training;

(iv) For all farmer subloans: an accounting control plan;

(v) For new personnel to be hired for the Project: a time-phased staffing plan for new positions, indicating number, job title, salaries and anticipated duties, such plan to designate one person (other than the General Manager) as the Project Manager; and

(vi) For trucks: a detailed analysis of the transportation requirements of the Project and alternative approaches to meet these requirements, including truck rentals (prior to procurement, if any, of such trucks).

E. Covenants

CREDICOOP shall covenant and agree, except as AID may otherwise agree in writing, that it shall:

(i) Authorize or cause to be authorized new staff positions necessary to carry out the Project as planned with a salary structure adequate to attract and maintain qualified personnel in such positions;

(ii) Be solely responsible for all construction cost overruns with respect to any building construction undertaken as part of the Project; and

(iii) Submit to AID annual work plans (including credit requirements based on crop projections) for each year subsequent to the first year of the Project prior to AID approval of incremental funding for each such year.

Edward W. Coe
Assistant Administrator
Bureau for Latin America
and the Caribbean

Aug 15 1979
Date

Clearances:

GC/LAC, J. Kessler	<u>JK</u>	date	<u>8/13/79</u>
LAC/SA, R. Burke	<u>RB</u>	date	<u>2/13/79</u>
LAC/DR, T. Brown	<u>TB</u>	date	<u> </u>
LAC/DR, M. Brown	<u>MB</u>	date	<u> </u>

GC/LAC:GMV JK er:ec:8/9/79:x29182

AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT PAPER FACESHEET		1. TRANSACTION CODE <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-right: 10px;">A</div> A = ADD C = CHANGE D = DELETE		PP <hr/> 2. DOCUMENT CODE 3
3. COUNTRY/ENTITY PARAGUAY		4. DOCUMENT REVISION NUMBER <div style="border: 1px solid black; width: 20px; height: 20px; margin-left: 10px;"></div>		
5. PROJECT NUMBER (7 digits) <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 10px;">526-0118</div>	6. BUREAU/OFFICE A. SYMBOL LA	B. CODE <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 10px;">05</div>	7. PROJECT TITLE (Maximum 40 characters) <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 10px;">MINIFUNDIA CROP INTENSIFICATION</div>	
8. ESTIMATED FY OF PROJECT COMPLETION FY <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 10px;">83</div>		9. ESTIMATED DATE OF OBLIGATION A. INITIAL FY <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 10px;">79</div> C. FINAL FY <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 10px;">83</div> D. QUARTER <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 10px;">4</div> (Enter 1, 2, 3, or 4)		

10. ESTIMATED COSTS (\$000 OR EQUIVALENT \$1 -)						
A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L/C	D. TOTAL	E. FX	F. L/C	G. TOTAL
AID APPROPRIATED TOTAL	165	280	445	775	1125	1900
(GRANT)	(165)	(280)	(445)	(775)	(1125)	(1900)
(LOAN)	()	()	()	()	()	()
OTHER U.S.						
1.						
2.						
HOST COUNTRY			643			2580
OTHER CONORIS)	10			10		10
TOTALS	175	923	1,098	785	3705	4190

11. PROPOSED BUDGET APPROPRIATED FUNDS (\$000)									
A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		E. 1ST FY <u>79</u>		H. 2ND FY <u>80</u>		K. 3RD FY <u>81</u>	
		C. GRANT	D. LOAN	F. GRANT	G. LOAN	I. GRANT	J. LOAN	L. GRANT	M. LOAN
(1) FN	253	075		445		632		384	
(2)									
(3)									
(4)									
TOTALS				445		632		384	

A. APPROPRIATION	N. 4TH FY <u>82</u>		O. 5TH FY <u>83</u>		LIFE OF PROJECT		12. IN-DEPTH EVAL. SCHEDULED <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 10px;">MM YY 12 81</div>
	Q. GRANT	R. LOAN	S. GRANT	T. LOAN	V. GRANT	U. LOAN	
(1) FN	397		42		1900		
(2)							
(3)							
(4)							
TOTALS		397		42		1900	

13. DATA CHANGE INDICATOR. WERE CHANGES MADE IN THE PID FACESHEET DATA, BLOCKS 12, 13, 14, OR 15 OR IN PRP FACESHEET DATA, BLOCK 12? IF YES, ATTACH CHANGED PID FACESHEET.

14. ORIGINATING OFFICE CLEARANCE <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 10px;">1</div> 1 = NO 2 = YES		15. DATE DOCUMENT RECEIVED IN AID # OR FOR AID # DOCUMENTS. DATE OF DISTRIBUTION <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 10px;">MM DD YY 5 17 79</div>	
SIGNATURE 		DATE SIGNED <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 10px;">MM DD YY 5 17 79</div>	
TITLE USAID/Director, Paraguay		DATE SIGNED <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 10px;">MM DD YY 5 17 79</div>	

AGENCY FOR INTERNATIONAL DEVELOPMENT
PROJECT IDENTIFICATION DOCUMENT FACESHEET
 TO BE COMPLETED BY ORIGINATING OFFICE

1. TRANSACTION CODE

A A = ADD
 C = CHANGE
 D = DELETE

PID

2. DOCUMENT CODE

3. COUNTRY/ENTITY

PARAGUAY

4. DOCUMENT REVISION NUMBER

5. PROJECT NUMBER (7 DIGITS)

526-0118

6. BUREAU/OFFICE

A. SYMBOL LA B. CODE 05

7. PROJECT TITLE (MAXIMUM 40 CHARACTERS)

MINIFUNDIA CROP INTENSIFICATION

8. PROPOSED NEXT DOCUMENT

A. **2** 2 = PRP
 3 = PP

B. DATE **12/77**

10. ESTIMATED COSTS

(\$000 OR EQUIVALENT, \$1 = #126)

FUNDING SOURCE		BASE
A. AID APPROPRIATED		1,500
B. OTHER U.S.	1.	
	2.	
C. HOST COUNTRY		500
D. OTHER DONOR(S)		
TOTAL		2,000

9. ESTIMATED FY OF AUTHORIZATION/OBLIGATION

a. INITIAL FY **79**

b. FINAL FY **81**

11. PROPOSED BUDGET AID APPROPRIATED FUNDS (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		E. FIRST FY 1979		LIFE OF PROJECT	
		C. GRANT	D. LOAN	F. GRANT	G. LOAN	H. GRANT	I. LOAN
(1) FN	253	075		475		1,500	
(2)							
(3)							
(4)							
TOTAL				475		1,500	

12. SECONDARY TECHNICAL CODES (maximum six codes of three positions each)

140

150

13. SPECIAL CONCERNS CODES (MAXIMUM SIX CODES OF FOUR POSITIONS EACH)

BS

R/AG

EQTY

LAB

TECH

14. SECONDARY PURPOSE CODE
 133/163

15. PROJECT GOAL (MAXIMUM 240 CHARACTERS)

To increase the income and employment of small farm families.

16. PROJECT PURPOSE (MAXIMUM 400 CHARACTERS)

To assist Paraguay in a concentrated effort to intensify crop production in the minifundia or Central Zone and to develop related marketing/processing systems.

17. PLANNING RESOURCE REQUIREMENTS (staff/funds)

PRP preparation: 9 WW marketing specialists (FY 1977 Tech Support funds);
 4 WW A.I.D. direct-hire agronomic and food processing expertise.
 PP preparation: 12 WW contract consultant services.

18. ORIGINATING OFFICE CLEARANCE

Signature

Title

57

(Date)

MM DD YY

19. DATE RECEIVED BY
 AID/W, or for AID/W DOCUMENTS
 DATE OF DISTRIBUTION

MM DD YY

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UNATTACHED ANNEXES (in TAG/DR files)

- A. Resume's of CREDICOOP Administrators (included in AID/W files)
- B. Plans and Cost Estimates for 611(a) Compliance
- C. Clippings file of Paraguayan newspaper articles on horticulture
- D. Principal consultant's reports related to Project Preparation
(one each in bulk files.)
- E. Working Agreement between CREDICOOP and SEAG
- F. Financial Statement of CREDICOOP

II. DETAILED PROJECT DESCRIPTION

A. Summary

The small farmer in Paraguay is largely dependent on the production of a few export crops for his income. His production of food crops is a secondary activity, usually limited to low yielding grains. Prior efforts to diversify into fruits and vegetables have had limited success due to obstacles preventing farmers from applying improved technologies to their production processes and to failures in the marketing system, such as poor quality control, inadequate packing, and undependable transportation. While there appear to be numerous incentives to diversify production into fruits and vegetables, it does not seem feasible to do so unless all the factors of production and marketing are brought together in a reliable and efficient system providing small farmers adequate returns for their risks and efforts.

This pilot project proposes to create a system for the production and marketing of fruits and vegetables by 600 small farm families. These families will be recipients of technical assistance and credit for production and marketing provided through CREDICOOP, a private cooperative central; will be located in the minifundia (small farm) zone of Paraguay, an area densely settled in small holdings; and will grow and sell crops offering the best production and price potentials. The findings of this five-year Project may then be replicated nationwide, with adjustments for climatic and other variations between regions within Paraguay. Farm income gains of 20% annually are anticipated, as well as income protection against market fluctuations in other export crops, and an improved local food supply.

The Project will include training for technicians and farmers, employing classroom and mobile videotape modes with presentations in the Guaraní language; research in production and marketing involving the Ministries of Agriculture and of Industry; credit for production and marketing; technical assistance extension to the participating farmers; and the construction of a packing/processing/cold storage plant to be owned and operated by CREDICOOP. The \$1,900,000 AID grant will finance technical assistance to be provided by U.S. universities via Title XII (\$450,000); credit; and construction, equipment, and evaluation costs. CREDICOOP's counterpart (\$2,580,000) will cover the costs of land, construction and equipment, credit, and new personnel and operating costs.

The Project is technically, financially, and economically feasible. CREDICOOP has successfully administered several previous AID-assisted activities, and is capable of carrying out this Project. The Project is consistent with the AID strategy in Paraguay, which emphasizes local institution building in agriculture and pilot programs which address the problems of the rural poor.

B. Background

1. The Problem

The minifundia farmer, whose economic world is a few partially cultivated hectares of land, and who buys little and sells little, still controls a large share of Paraguay's arable land. For every commercial farmer in Paraguay there are perhaps as many as one hundred campesino or subsistence farmers, many of whom work less than ten hectares of land. Yields upon these small farms are generally low, an intolerable defect in a country where food demand is increasing faster than food production. Although Paraguay has traditionally produced enough food for its own needs, it is increasingly clear that the nation's farmers are neglecting food production in order to concentrate on monocultural export crops, such as cotton, tobacco, and soybeans. This emphasis on monocultural production is evident even on small farms, as illustrated by the fact that approximately sixty percent of Paraguay's cotton production originates on farms of less than twenty hectares. Yet, it appears that the economic situation of small family farmers has not improved significantly as a result of producing export crops.

2. The Proposal

The Mission submitted a PID for the proposed Project in 1977. The proposal was based upon the growing recognition that it was necessary both to diversify and improve the productivity of Paraguayan agriculture. Project designers felt that, given the proper combination of circumstances, small land units of minifundias could be richly productive, as they are in Germany, Japan and Taiwan. Project designers accepted the argument summarized by World Bank President Robert McNamara that "There is ample evidence that modern agricultural technology is divisible and that small-scale operations need be no barrier to raising agricultural yields."

The challenge in developing the proposal was to identify a systematic way of introducing at the small farm level modern production technologies for fruits and vegetables, the enterprises thought most promising for achieving increased production and income. The essential problem was that of how to bring the stimulus of commerce into peasant agriculture so that minifundistas could begin to purchase yield-increasing inputs such as improved seeds and fertilizers, and so they could sell their increased yield to pay for these inputs while making a profit. This economic transformation will not be easy to achieve with fruits and vegetables, which while potentially profitable, are risky to produce, transport, store and market.

After approval of the PID two A.I.D. staffers, Mr. Donald Fiester and Mr. Stephen C. Ryner, completed studies, respectively, on "Fruits and Vegetables Potentials for Paraguay" and "An Overview of Food Preservation in Paraguay". The former report summarized the agronomic limitations on intensified fruits and vegetables production in the central zone; the latter

described facilities existing for food processing in Paraguay. Dr. Roy M. Nakayama, horticulturist at New Mexico State University, provided a historical perspective to these studies with his 1970 "Report and Recommendations on Selected Horticultural Crops for Paraguay". Recognizing that marketing was critical to the success of the proposed Project, AID contracted with the firm of J.A. Reyes, Associates, Inc. to carry out a "Market Study of Fruits and Vegetables in the Central Zone: A Commodity System Approach." A Paraguayan consulting firm, Fretes Ventre y Asociados, in a two volume work entitled "Basic Studies for a Minifundia Crop Intensification Project in the Central Zone of Paraguay", evaluated the social, economic, and technical feasibility of the Project. The results of this study are considered in greater detail in the Technical, Social and Economic sections of this Project Paper. Finally, the USAID retained Dr. Rafael Cintron, an experienced horticulturist, to review the overall design of the Project and to assess the appropriateness of the crops selected. Copies of all of these studies are in AID/W files.

One conclusion emerging from these reports is that the proposed Project must lead to a vertically integrated production/marketing system if it is to be successful. Providing only one or two inputs, such as better processing or improved seeds, will not adequately control the risks associated with growing fruits and vegetables. Another conclusion is that a sizeable effort will be required in producer education, on-farm demonstrations, and group persuasion. The Project requires considerable outlays of credit to minifundistas, many of whom have little experience using it. Participation will call for a "revolution of the mind" among subsistence farmers who are, by necessity, oriented more toward security than opportunity. In the minifundia zone survival is the overwhelming objective, and to some even planting hybrid seeds is an unacceptable risk. The Project will search out producers who are willing to try new approaches, and will focus on production of crops with which they are already familiar. The risks of innovation will be neutralized to some extent by the technical assistance, credit, and marketing aid provided by CREDICOOP. In addition to the support provided by CREDICOOP, other factors are encouraging minifundistas to diversify and intensify their crop production: traditional monocultural crop prices recently dropped in the world market, hurting small farmers who were overly dependent on cash earnings from them; and Paraguay's expanding domestic market as well as the international one promises to be very profitable for fruit and vegetable products. In addition, official attitudes toward cultivating fruits and vegetables and other nontraditional or minor crops have changed since this project was first proposed. The influential daily newspaper, ABC Color, dedicated a recent editorial to the necessity of ending monoculture. In part the editorial says "It is well that we encourage the production of those exportable agricultural products that presently have sustained demand and high prices in the foreign market, but not at the expense of producing insufficient food items of vegetable origin, which must not become scarce and expensive in an agricultural economy; that is happening in our country with the importation of rice, vegetables, fruits, etc., with high prices adversely affecting the family shopping basket." Unattached Annex D,

contain numerous newspaper clippings confirming the trends noted in this editorial. The clippings also show that several private enterprises have responded to the growing demand for such products by building cold storage facilities and by encouraging cooperative marketing of such crops as bananas and pineapple.

To date no single institution, or combination of institutions, has been able to provide an adequately integrated production and marketing system for fruits and vegetables. Efforts by the public and private sectors have failed to provide farmers with the knowledge, security, price incentive, markets, and credit for launching a national crop intensification/diversification program. While completing this Project Paper the Mission met with numerous representatives of the private and public sector. Although there was unanimous enthusiasm for the Project, and many individuals and institutions have expended their own funds to encourage fruit and vegetable production, none had yet put into operation the integrated farm to market system needed.

It is now apparent that CREDICOOP is the institution most capable of implementing the Project, in coordination with various GOP and private entities.

3. CREDICOOP

CREDICOOP is a central of credit unions (here used interchangeably with cooperatives) formed in 1973 to provide technical and financial assistance to credit unions and to promote the growth of the credit union movement in Paraguay. CREDICOOP's services include the promotion and organization of new credit unions, training of their management and administrative personnel, and auditing, insurance, and other technical services.

CREDICOOP operates under a charter issued by the Directorate of Cooperatives in the Ministry of Agriculture, and is assisted in its agricultural extension efforts by the Ministry's extension service (SEAG). The growth and current scale of CREDICOOP is illustrated in the following table:

CREDICOOP Membership and Operations

	Members: Credit Unions (Rural & Urban)	Members: Individuals	Share Capital of Members	Agric. Loans to Cooperatives
1974	28	11,594	\$ 774,087	\$ 60,000
1978	42	15,945	\$ 2,772,508	\$ 1,389,000

CREDICOOP today provides production and marketing credit to 32 rural credit unions encompassing approximately 3.0% of the 200,000 small farm families in Paraguay.

(a) A.I.D. Assistance to CREDICOOP

A.I.D. will have provided a total of \$5,209,300 in assistance to CREDICOOP through FY 1980.

i. Grant No. 526-0101

Grant funding contributing to CREDICOOP's development began in 1970 with a \$500,000 agricultural Credit Union Project which led to the founding of CREDICOOP in 1973 and continuing CUNA technical assistance, now being provided by two CUNA advisors who will complete their tasks in 1979. Cumulative AID Grant funding to CREDICOOP (excluding this proposal) totals \$1,928,000.

ii. Loan 526-T-027

This \$3,000,000 Loan was signed in June 1975, amended in December 1976, and will be fully disbursed by June 1979. The Loan financed credit, technical assistance, and marketing services provided to member cooperatives by CREDICOOP. The effect of the Loan has been to create a steadily increasing demand for production and marketing credit from an expanding portion of the small farmer target group.

iii. OPG No. 5/78 (1978)

As often occurs in new ventures, several credit unions became financially overextended and required special assistance, both technical and financial, in recovering. These special operations have been financed through the establishment of a "stabilization fund" project drawing on this OPG, the National Development Bank, and CUNA itself. Of the total project cost of \$417,900, the OPG provided \$281,300.

iv. Effectiveness of this Assistance

An evaluation carried out in 1977 by the USAID, CREDICOOP, the National Development Bank, the Ministry of Agriculture, and CUNA reported favorably on the progress of these various AID-funded activities and the status of CREDICOOP and its members. CREDICOOP provides services to its members in a satisfactory manner, and is approaching financial self-sufficiency somewhat ahead of schedule. The majority of its member cooperatives are growing steadily in numbers of shareholders, assets, lending volume, and profitability. Future growth will depend in large part on CREDICOOP's continued financial soundness and ability to expand its capital base.

(b) Other Assistance to CREDICOOP

CREDICOOP recently received a loan of \$500,000 from the IDB to finance cotton production, the most important cash crop for small farmers in Paraguay. They also received assistance on a lesser scale from

the Peace Corps (8 man-years of audit and crop production TA); the Canadian group "Desarrollo y Paz", a \$35,000 donation; a SEAG extension agent from the Ministry of Agriculture; and a financial advisor from the National Development Bank. CREDICOOP has not had access to the IDB funds controlled by COLAC due to the availability of AID Loan 027 funds, which will be exhausted in the next few months.

C. Project Description

The Project will assist CREDICOOP to promote the production, processing and marketing of selected fruits and vegetables grown in minifundia zones throughout Paraguay, especially in the central area. CREDICOOP will promote increased production of tomatoes, bananas, pineapple, and strawberries in approximately ten districts. CREDICOOP will utilize its present organizational structure and general knowledge of Paraguayan marketing conditions to assure that the increased production resulting from crop intensification will be marketed nationally and internationally, with the producing farmers receiving an equitable share of the income created.

1. Production

Members of individual cooperatives will decide which of the four products they wish to grow and market. To assist coop members in making their decisions CREDICOOP and USAID technicians will discuss with them the potential costs, benefits, production obstacles, and marketing arrangements for each of these crops. Once they have selected their crops, farmers will be advised as to how they can best increase their agronomic and economic returns on their small plots by using improved crop rotation systems. To do this a team of technicians from CREDICOOP, the USAID, the National Extension Service (SEAG), and the National Agronomic Institute (IAN) will collaborate to develop technology packages for intensive production of various fruit and vegetable combinations. Farm production plans, such as those found in the Economic Analysis Annex, will be adapted to each farmer's needs.

Once technological production packages are developed by the interdisciplinary cross-institutional teams, mass communications techniques will be employed to train farmers in recommended production techniques for the fruits or vegetables they have chosen to grow. Since fruit and vegetable technicians are in short supply in Paraguay a unique system of spreading technological information will be employed by CREDICOOP. The Education Department of CREDICOOP, supported by Project funds and utilizing technical assistance from SEAG and IAN, will produce a series of video tapes in the Guaraní language.

The video system will be mainly utilized to create awareness of the new cultural practices and technology required to grow the proposed crops. Each crop will require several tapes to illustrate in color the specific practice or point under consideration. Crop production tapes will be prepared to illustrate as needed cultivation, seed bed preparation, plant spacing, control of weeds, pest specific to crop and their proper control, etc. Tapes

will also be prepared on subjects such as water resource management covering individual topics on utilization of ram jet pumps, small earth dams, control of evaporation, etc. The tapes will show small farmers speaking in guaraní about each topic being considered and explaining how the farmer became convinced that a particular step was necessary and beneficial.

Para-technicians, known as Ayudantes de Campo, and Extension Agents will transport the tape projection equipment from village to village on a regular basis, and will see that follow-up visits by horticulturalists and other specialists are scheduled and carried out. Most follow-up activities will be supervised by the local Agricultural Extension Agent nearest to the participating cooperatives. The entire program will be coordinated with the National Extension Service. CREDICOOP will cooperate with other organizations to show video programs developed by others when judged by CREDICOOP to be in the small farmer's interest and utilization of the equipment does not conflict with Project needs. Responsibility for utilization of the equipment will at all times be CREDICOOP's.

In addition, the Helvetas Swiss technical program at IAN will provide a full-time technician to develop appropriate technology equipment to be used in producing fruits and vegetables, especially hydraulic rams and other irrigation equipment. The Grant will pay for various materials, such as fertilizers, new seeds and small-scale irrigation equipment used on demonstration plots at the farm level and by IAN technicians at Caacupé.

The Project will also provide substantial credit to the small-holders who will grow fruits and vegetables. A relatively small portion of the A.I.D. grant goes for this purpose because CREDICOOP has a sizeable cash liquidity which they have previously earmarked for farm loans.

2. Marketing

The Project will include marketing trials for the four different fruit and vegetable products mentioned above. Marketing trials will be simple, and in most instances will consist only of systematic field gathering, cleaning, grading, crating and labeling. Once products are boxed they may be stored temporarily in the cold storage rooms, the warehouse, or they may be shipped immediately to domestic or foreign wholesale centers. Packing, rather than processing, will be the primary focus of the Project. Several

of these manufacturers received assistance under the AID Rural Enterprises Loan and they can easily be contracted to make crates for the Project. Smaller trial runs may also be done by a local can factory, if prices of raw materials for cans decline so that they compete with local glassware or boxes. Grant funds may be used to finance special equipment related to packing, such as molds for glassware, carton making/labeling equipment and fresh fruit storage containers. This custom equipment would be the property of CREDICOOP, used by the packer.

CREDICOOP will build a 1,000 square meter warehouse building with three refrigerated units for the storage, packing, and processing of fruits and vegetables. Each of the units will hold 144 cubic meters of produce. Administration of the warehouse will be carried out from a separate office building located on the same plot of land. The 1,300 square meter office building will house all of CREDICOOP's administrative offices, not only those directly connected with the Project. This consolidation of offices and warehouses on a 13,500 square meter plot of land near the new Asunción municipal wholesale market will greatly improve the efficiency of the entire CREDICOOP operation. Grant funds will be used to pay for the warehouse and for one-half the cost of the office building.

This agro-industrial site will serve as an operations office for current CREDICOOP programs as well as for new functions being undertaken by the Project. At this central location CREDICOOP will: receive shipments from the interior, store empty and full containers, process some items and cold store others, label and box processed export commodities, despatch fresh produce for the domestic market, and will produce and videotape educational materials, offer training courses for technicians. After completion of the municipal wholesale market CREDICOOP may rent space there to handle excess fresh produce if demand justifies such a need. That will allow CREDICOOP to expand its labeling, crating, and shipping operations in the third year of the Project if the demand for processed products is established after marketing trials.

In the five years of the Project CREDICOOP will market a total of approximately ten thousand metric tons of fruits and vegetables produced under the Project. To assure that the Project reaches only the smallest farmers families will not be encouraged to participate in the project if they grow more than one-half hectare of tomatoes or one hectare of bananas, for example. Credit and technical assistance will be limited to the 600 farm families who will participate in the project. However, other farmers may market their fruits and vegetables through the CREDICOOP marketing structure, if they so desire.

The Marketing Department of MAG and the Ministry of Industry and Commerce, with the assistance of CREDICOOP and AID advisors will investigate the elimination of import duties on raw materials needed for packaging fruits and vegetables. Grant funds will be used for feasibility studies on the economic consequences and benefits of lowering GOP duties on certain packaging raw materials.

3. Technical Assistance

To ensure that adequate technical assistance is provided at the local cooperative and national level the Project provides for substantial inputs from both a Title XII University and from other AID sources.

The Title XII University will provide a total of 76 technician months (TM) of assistance, including 24 TM of a horticulturist, 12 TM vegetable processing and marketing advisor, 24 TM of various short term production advisors, 16 TM of marketing assistance, primarily to complete feasibility studies of the fruit and vegetable marketing situation. All of these technicians will be assigned Paraguayan counterparts in their fields of specialization. The horticulturist will work with horticulturists at the Caacupé Experiment Station and the processing and marketing advisor will work primarily with CREDICOOP.

The aforementioned technical assistance will have two major tasks: (1) to collaborate with Paraguayan horticulturists, extension agents, and CREDICOOP para-technicians in developing technological packages showing farmers how to intensify their fruits and vegetables production and (2) to collaborate with CREDICOOP to ensure that the increased fruits and vegetables production is effectively marketed nationally or internationally in either a fresh or processed state. Several other institutions will contribute their facilities and knowledge in specialized areas. As indicated above an interdisciplinary team composed of technicians from IAN and SEAG will work with contracted specialists to develop crop production packages for minifundistas. The production team will develop technical packages for specific crops (time of seeding, disease control, irrigation methods, cultural practices, new varieties) and the crop combinations most economically beneficial for small farmers. These specialists will conduct on-farm research in addition to that done at the Caacupé Station, and will do follow up work with fruits and vegetables production. The final delivery of the technical packages will be the primary responsibility of the Agricultural Extension Agents, monitored and assisted by CREDICOOP. A working agreement already existing between the two institutions (see Unattached Annex F) will be amplified to include the proposed Project.

4. Training

The Project includes a sizeable training program. On-the-job-training and short courses for both technicians and farmers comprise the bulk of the training program, but limited funds are provided for short term international training. The latter will likely consist of a special short course for one IAN horticulturist at the participating Title XII Institution. Special foreign and in-country training courses related to the Project will

be supported by Grant funds, but CREDICOOP will pay the costs of its regular ongoing precooperative and cooperative training courses. Numerous courses of that type will be called for because several new cooperatives will be formed by specialized growers, such as the strawberry producers. Courses will include training in the proper utilization of pesticides and appropriate technologies.

5. Project Administration

CREDICOOP will act as the intermediary institution that integrates all of the various Project activities into a vertically coordinated production-marketing system directed toward specific markets. This task involves identifying profitable crops providing technical assistance to growers, financing production, controlling quality, and developing or organizing processing/marketing channels. To this end the Project will assist in financing the construction of a central warehouse/intermediate processing facility which can be modified to focus on the most profitable fruits and vegetables commodities. This facility will include a small refrigeration unit for fruits and vegetables storage. CREDICOOP's most important responsibility will be to ensure that by the end of the Project a fully integrated vertical production/marketing system is in place for at least one of the crops for which marketing trials were conducted.

CREDICOOP will bring together many diverse elements in order to implement the Project. Figure 1 on the following page depicts the functional relationship of these various elements under the project. The diagram illustrates how the team effort will reach farmers via a system of supporting services in Asunción.

The Mission carefully considered CREDICOOP's ability to effectively manage new activities under the project without establishing a separate fruit and vegetable department. The USAID concluded that new activities will not require major organizational changes within CREDICOOP to assure successful project implementation. CREDICOOP is already in the business of crop financing and its administrative and lending procedures are not expected to change significantly for fruits and vegetables. The marketing department is also well established and markets 2.5 million worth of farm products annually. Naturally, some organizational changes will be necessary, and these are illustrated on p. 19. The USAID believes that the proposed addition of new personnel in key areas (discussed below) will meet project management requirements without disrupting CREDICOOP's management system or without imposing unnecessary financial burdens on the institution.

It is important to elaborate somewhat on the probable harmful consequences of establishing a separate fruit and vegetables department. To do so would require CREDICOOP to recruit and hire a manager at a level likely no lower than that of the present marketing director. This director has wide ranging responsibilities, including administration of CREDICOOP's entire marketing operation and supervision of three subordinates: one in charge of farm supplies, another responsible for technical assistance, and a third handling administrative affairs. Since the volume of business generated by

the project will be small relative to that handled by the existing marketing department, at least for several years, the apparent inequity between salary and work output could create morale problems within CREDICOOP's management and/or lead to pressures for a general upward revision of salaries. Another factor we believe weakens the argument for establishing a separate unit for fruits and vegetables is that CREDICOOP plans to create a new high level management position in January, 1980. The person to fill this post will administer most of the organization's routine, day-to-day activities, allowing CREDICOOP's general manager more time to devote to the project. This will include directing and coordinating all aspects of project implementation.

The new personnel hired by CREDICOOP specifically for this project will carry a large part of responsibility for implementation. The agricultural production specialist mentioned in the PP will be assigned to the technical assistance coordination unit and will coordinate project related work of the two technicians now assigned to that unit. These technicians are provided, respectively, by the Ministry of Agriculture and the National Development Bank. The marketing specialist will be responsible solely for fruit and vegetables and will join three others in the marketing unit who handle cotton, rice, tobacco, and corn. The four new extension workers will specialize in cooperative administration and management and will be assigned to newly created human resources development unit. They will provide guidance to cooperatives participating in the project, including new coops resulting from the project. The administrative assistant will be responsible for managing new loans related to fruit and vegetable production and will be placed in the financing unit.

III. PROJECT SPECIFIC ANALYSES

The complete Technical, Social, and Economic analyses are included as Annexes III, IV, and V. Below is a summary of the findings elaborated upon in those Annexes. The Technical Analysis addresses the nature of current agricultural practices in the target area, and explains why the Project contemplates the intensification of fruit and vegetable production in the zone. The Social Analysis considers sociocultural characteristics of intended Project beneficiaries, and includes maps showing where they are located. The Economic Analysis provides a benefit/cost ratio, and explains how it was derived from annual cropping and marketing plans.

These analyses draw heavily upon Basic Studies for a Pilot Project of Crop Intensification in the Minifundia Area of the Central Zone of Paraguay, a special report undertaken by Paraguayan contractor Fretes Ventre y Asociados. Numerous other Mission documents were consulted in completing these analyses.

PRINCIPAL PROJECT ACTIVITIES

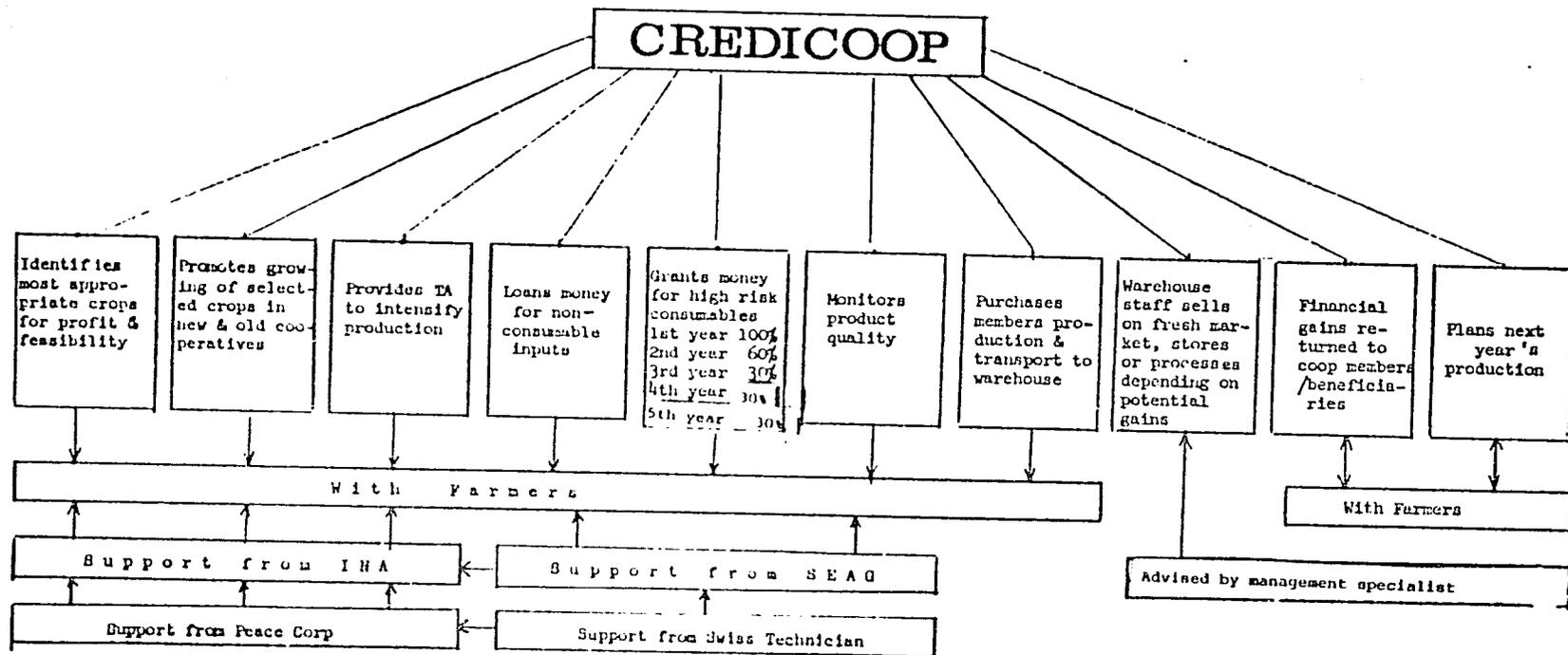


FIGURE 1

A. Technical Feasibility

After a brief description of the general agronomic conditions facing minifundistas in the central zone the analysis describes how the strategy of the Project is to encourage high-income, labor and land intensive plantings of fruits and vegetables. The case is made that adequate national and international demand exists for these products, but that farmers having few resources and fearful of risk, are unable to embark on crop diversification. The analysis concludes that there are no agronomic factors limiting the production of fruits and vegetables, although precautions must be taken against frost and drought.

This analysis demonstrates that farmers are familiar with the crops recommended for support under the Project, and that there is widespread interest in intensifying fruit and vegetable production. Paraguayans have considerable individual and group experience with projects similar to the one being proposed, but to date none of these projects have provided a successful vertically integrated production/marketing system comparable to that being proposed.

The analysis makes a strong case for the vertically integrated systems approach. It stresses that the Project will function only when all support elements, such as credit, technical assistance, farmer capitalization, and marketing are provided through the implementing agency. Considerable detail is given as to why the chosen implementing agency is best suited to carry out the Project. The analysis demonstrates that participation in the Project will enhance CREDICOOP's overall situation by utilizing its seasonal cash liquidity and by stimulating it to diversify its operation. Finally, the analysis discusses four key elements of the proposed project: (1) market research and development, (2) production credit, (3) physical infrastructure, and (4) crop production research and extension. It concludes that if all these elements are included in the Project there are no significant technical obstacles to its implementation. From a technical viewpoint the Project is timely and realistically conceived.

A separate section of Unattached Annex A, _____ kept in LA/DR files, provides a specific explanation of the technical feasibility of the video system benefits.

B. Social Feasibility

Annex IV identifies the target groups by their characteristics and their location. It includes several maps indicating where the Project will be implemented, as well as the specific cooperatives involved. On the basis of the maps, present cooperative membership, and the intent of the Project to produce certain quantities of fruits and vegetables for the market it is concluded that about 600 farm families will be able to participate. This means that, at a minimum, 4,000 persons will be direct beneficiaries. These

poorest minifundistas are within the A.I.D. target. They generally have a per capita income of less than \$150 (expressed in 1969 prices).

The analysis concludes that farmers accept cooperatives as modernizing institutions and that there are no significant cultural obstacles barring their participation in these organizations. Project designers also adopted seven criteria in order to assure that intended beneficiaries are included. Many, but not all, of the intended beneficiaries are presently CREDICOOP members, and it is assumed that several new cooperatives will be formed during the Project.

Benefits of the Project will include: (1) more efficient utilization of family labor and land resources; (2) a decrease in the emigration of young people from the area; (3) stimulation of farmer controlled democratic organizations; and (4) an improved net income for participants. Women-headed minifundia households should benefit slightly more than other groups. The Project can be easily replicated throughout the central zone if this pilot phase is successful.

In short, the social benefits of the Project seem to far outweigh its social costs.

C. Economic Feasibility

The most important anticipated economic result will be an increase in the cash income of participating farm families. This will come about not only because of an increase in crop productivity but because of the establishment of a stable and improved marketing system.

A pre-evaluation of twenty fruit and vegetable crops was carried out by Project designers in order to select those with the most economic potential. Of these, four were selected for production under the Project. Annex V provides detailed information on the criteria which were used to select these crops as well as an analysis of the expected costs and benefits of producing them.

In evaluating the economic worth of the Project, two alternatives were considered: (1) that participating farmers would completely replace their traditional cash crop, cotton, with fruit and/or vegetable crops; (2) that cotton would continue to be produced along with fruit and/or vegetable crops. To summarize the results of the analysis, the benefit-cost ratios for alternative (1) is 1.0 over a five year period; given a discount rate of 15%. For alternative (2) the benefit/cost ratio for five years is 1.2 and 2.2 for ten years.

These benefit-cost ratios imply an attractive economic rate of return to the Project and demonstrate the theoretical potential

of a very risky investment. Of course, high risk assumes a good possibility that a project can fail and lose money. In reality the more likely outcome is that the Project will be only partly successful, that even within a single crop program in a single season, some farmers will succeed and others will fail to achieve a profit. But even if the Project achieved no more than a 1.0 benefit/cost ratio with an implicit rate of return of 15%, it should be considered successful. The purpose of this pilot project is not so much to achieve a pre-determined rate of return and increase in farmers' income during the life of the Project, as it is to find out how to develop and operate an integrated production and marketing system for fruits and vegetables. If, as a result of the Project, it becomes possible to develop such a system for all farmers interested in producing fruits and vegetables, the Project will have been a resounding success and will have achieved its main purpose.

D. Administrative Analysis

1. Summary

CREDDICOOP was founded in 1973 to provide technical and financial assistance to credit unions and to promote the growth of the credit union movement in Paraguay. Since its founding it has grown to encompass 42 member credit unions, extended 87 loans (\$2.5 million) in 1978 and processing an estimated 120 loans (\$4 million) in 1979. While the number of individual beneficiaries has risen to 16,000, CREDDICOOP has increased its staff to 32 persons and its operating budget to about \$300,000. CREDDICOOP administered a \$3 million AID loan financing credit, technical assistance, and marketing services for member cooperatives; recently received a \$500,000 loan from the IDB to finance cotton production; and received technical assistance grants from various sources. It contracts for feasibility studies, trains and arranges for training of personnel, promotes and delivers technical assistance and credit to a large and constantly growing client group, and procures commodities through competitive procedures. It also has institutionalized the evaluation process and conducts several distinct evaluation exercises annually. The administrative capability to handle the technical assistance, credit, training, and commodity procurement activities in this Project is in place, and six additional staff positions are to be filled as the workload expands.

Only two Project tasks require know-how that CREDDICOOP does not currently possess: audiovisual (videotape) preparation, and construction contracting and supervision. An audiovisual expert will be included in the six new staff positions. The bidding and award of the construction contract will be handled by CREDDICOOP with procedural assistance from AID. The construction will be supervised and payments certified by an independent consultant. With these two staff additions CREDDICOOP will have made ample provision for the administration of the new tasks created by this Project.

2. CREDICOOP's Organization

Legal Base

CREDICOOP was established and registered legally with the General Directorate of Cooperatives in 1973. It is a private entity, owned by its affiliated cooperatives.

Administrative Organization

Figure 2, on page 19 shows CREDICOOP's present organizational structure. During this Project CREDICOOP's emphasis on training will employ audiovisual techniques to promote fruit and vegetable production and marketing. This will require the creation of new offices and modifications in other relationships as shown in the anticipated end-of Project organizational chart shown in Figure 2. Training will emerge as a distinct operation causing the technical assistance and marketing functions of the organization to grow substantially.

Policies and Procedures

Personnel

In filling new positions CREDICOOP gives preference to promotion from within. Promotions and new hires are recommended by the Manager subject to approval by the Administrative Council. Employees may be fired for cause. CREDICOOP's pay scale is competitive locally.

Training: Participant Selection

Farmers who are selected as candidates for training are chosen by local field technicians subject to the approval of the local CREDICOOP Promotor and of the Training Office of CREDICOOP. They are selected on the basis of community standing, willingness to accept and transmit new ideas, and age and ability to work. In areas without cooperatives, candidates are recommended by local SEAG agents.

Procurement

In procuring goods and services CREDICOOP uses a limited-solicitation procedure, requesting bids or proposals from possible suppliers, with reviews and awards made by a committee composed of CREDICOOP Directors and the Manager. Supervision of the execution of the contract is the responsibility of the Manager and the interested Department Chief.

CREDICOOP's Resources

Human

The CREDICOOP staff is competent at all levels. The resumé of Sr. Juan Peralta Paredes, present Manager, follows in Unattached Annex B.

CREDICOOP'S PRESENT ORGANIZATION

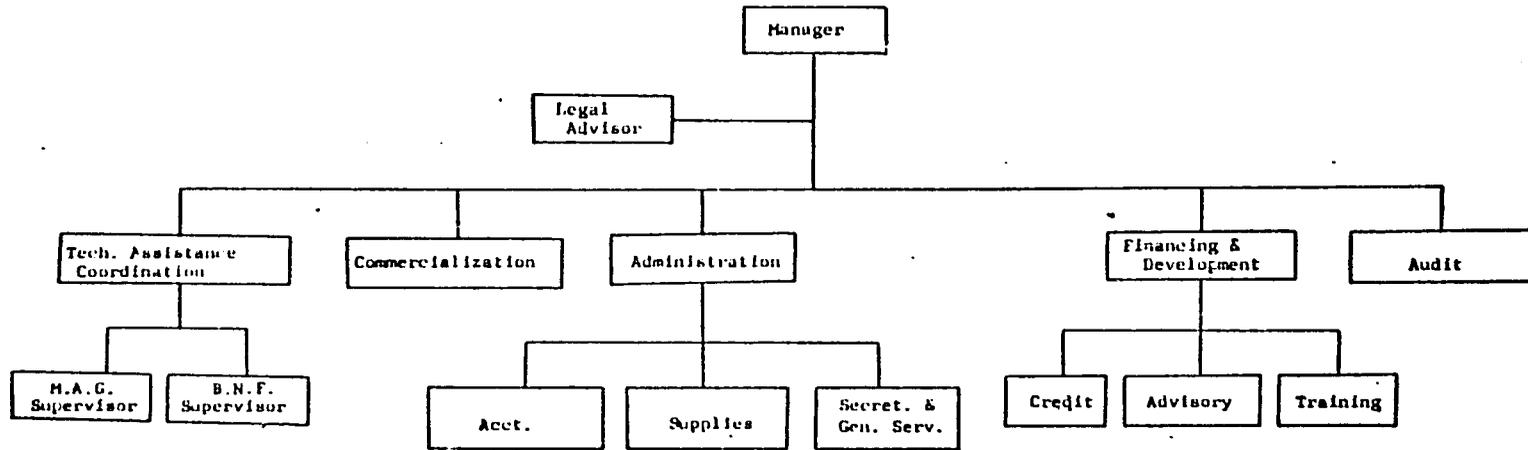


FIGURE ORGANIZATION

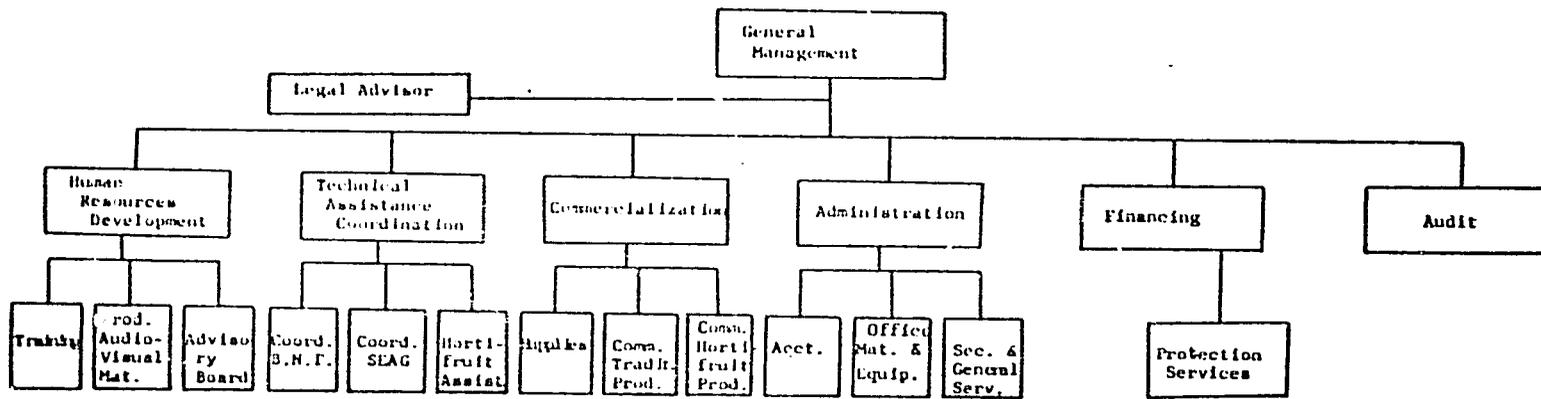


FIGURE 2

Given CREDICOOP's policy of promotion from within, future managers are likely to be drawn from Department chiefs. The resumés of the four Department chiefs are included in Unattached Annex B.

Financial

CREDICOOP's lending capital has been provided through external credits and capital stock and grants, and now totals \$3,500,000*. Operating expenses are covered through interest, income, dues, and fees for services. CREDICOOP has taken a conservative approach to the creation of reserves, which tends to strengthen the balance sheet at the expense of the income statement; nevertheless, the operational break-even point is expected to be reached in late 1979 or 1980.

4. Governmental Relations

CREDICOOP enjoys the support of the Government. AID loan O27 to CREDICOOP is guaranteed by the National Development Bank (BNF), and the ENF and the MAG have each assigned an advisor to CREDICOOP's staff. The Minister of Agriculture, the Director of the General Directorate of Cooperatives, and the President of the BNF attend General Assemblies. There is similar support at the local level, where departmental and municipal officials often are, or have been, officers or directors of cooperatives.

E. Environmental Concerns

Because the PID for this Project was submitted in 1977 no Initial Environmental Examination (IEE) was required. Thus no Threshold Decision has been rendered for the Project. Annex VII therefore contains the Mission's IEE, which will have to be approved prior to the signature of the Project Authorization. In brief, the IEE concludes that the Project will have no significant impact upon the environment. In fact the intensification of cropping on small areas should have a favorable impact because it will encourage crop rotation and will reduce depletion of certain soil nutrients used in the present monocultural cropping system.

A.I.D. funds will not be used to procure pesticides or equipment for their application, such as rental aircraft, trucks, sprayers, or containers. Nor will pesticides consultants be funded by A.I.D. However, it must be noted that small farmers in Paraguay presently use limited quantities of pesticides to produce fruits and vegetables. The USAID does not, and cannot exercise control over such usages by individual farmers. CREDICOOP will,

* Assumes full AID loan disbursement and utilization of CREDICOOP's own capital from shares, reserves, donations, etc. However, AID funds which have not yet been received are not included.

nevertheless, offer educational courses under the Project in order to teach farmers proper application methods and dosages. This will result in safer food products and will better protect participating farmers. To assure quality instruction in its pesticide training courses CREDICOOP will utilize relevant portions of the A.I.D. Pesticide Manual and the Action/Peace Corps Reprint #25, Intensive Vegetable Gardening for Profit and Self-Sufficiency.

IV. FINANCIAL PLAN

A. Cost Estimates

The Summary Cost Estimates and Financial Plan (Table I) and the Projection of Expenditures (Table II), are based on detailed cost estimates prepared by CREDICOOP and USAID. They reflect the expected requirements for production, processing, and marketing banana, tomatoes, pineapples and strawberries.

1. Contracting Services: \$450,000 in AID funds to finance 76 technician/months, to be provided by the University contracted under Title XII. The technicians include two technician/year specialists in horticulture, one technician/year specialist in processing and marketing of vegetables, two technician/year specialists in different crop production activities related to the Project, and 16 TM of specialists in marketing. These last technicians will be contracted on a short term basis.

2. Loans to Farmers: A \$1,705,000 revolving fund will be used to finance small farmers participating in the Project. 691,000 in local currency will be financed by AID and 1,014,000 by CREDICOOP.

3. Storage Facilities and Equipment: 320,000 in AID funds to assist in financing the construction of a crop storage facility and the purchase and installation of three cold storage units.

4. Office Building and Land: \$153,000 will be use for the construction of an office building, \$18,000 for construction supervision and \$150,000 for the purchase of land suitable for the building.

AID will finance \$102,000 in construction costs, \$18,000 for construction supervision, and CREDICOOP will finance \$51,000 for construction plus \$150,000 to purchase the land.

5. New Personnel, Per Diem and Transportation Costs: 245,000 financed by CREDICOOP will cover one specialist in marketing, one in production, four extensionists, and one administrative assistant, plus per diem and transportation costs thereof.

6. Refrigerated Truck: \$100,000 in AID contribution - F/C - for purchase of a vehicle with refrigerated cargo space.

TABLE I

SOURCE	SUMMARY COST ESTIMATE AND FINANCIAL PLAN				
	(US\$ 000)		CREDICOOP	OTHER	TOTAL
	AID GRANT			DONORS	
Fx	L/C	L/C	Fx		
USE:					
1. Technical Assistance	450			10	460
2. Loans to Farmers		691	1014		1705
3. <u>Storage Facilities & Equipment</u>	<u>195</u>	<u>125</u>			320
--Cold Storage units	195				
--Construction costs		125			
4. Office building		105	51		156
5. Construction supervision		18			18
6. Refrigerated truck	100				100
7. Seed Improvement & Multiplication		117			117
8. <u>Training</u>	<u>30</u>	<u>35</u>	<u>5</u>		70
- Videotape system equipment	30		5		
- Seminars, field visits, etc.		35			
9. New Personnel			185		185
10. Per diem & transportation			60		60
11. Land			150		150
12. Operating & maintenance cost			1115		1115
13. Evaluation		36			36
TOTAL	775	1127*	2580	10	4492

*(AID grant total rounded to \$1.9 million)

TABLE II - PROJECTION OF EXPENDITURES - AID GRANT
(US\$000)

	PY 1979 1/		PY 1980		PY 1981		PY 1982		PY 1983		TOTAL	
	Fx	L/C	Fx	L/C	Fx	L/C	Fx	L/C	Fx	L/C	Fx	L/C
1. Technical Assistance	118		182		150						450	
2. Loans to Farmers		138		0		198		355		0		691
3. Storage Facilities & Equipment												
- Cold storage units			195								195	
- Construction costs		60		65								125
4. Office Building		61		44								105
5. Construction supervision		8		10								18
6. Refrigerated truck			100								100	
7. Seed Improvement & Multi-plication		25		23		23		23		23		117
8. Training												
- Videotape system equipment	30										30	
- Seminars, field visits, etc.		5		5		5		11		9		35
9. Evaluation				8		8		8		12		36
	148	297	471	155	150	234		397		44	775	1127

PROJECTION OF EXPENDITURES - CREDICOOP CONTRIBUTION

1. Loans to Farmers	191		0		100		376		347		1014
2. Office Building	25		26								51
3. Training											
- Seminars, field visits, etc.	5										5
4. New Personnel	37		37		37		37		37		185
5. Per diem & transportation	12		12		12		12		12		60
6. Land	150										150
7. Operating & maintenance costs	223		223		223		223		223		1115
	643		298		372		648		619		2580

1/ PY (Project Year) is July 1, June 30.

PROJECTION OF EXPENDITURES - OTHER DONORS

EXPENDITURES - OTHER DONORS

<u>PY 1979</u>		<u>PY 1980</u>		<u>PY 1981</u>		<u>PY 1982</u>		<u>PY 1983</u>		<u>TOTAL</u>	
<u>Fx</u>	<u>L/C</u>	<u>Fx</u>	<u>L/C</u>	<u>Fx</u>	<u>L/C</u>	<u>Fx</u>	<u>L/C</u>	<u>Fx</u>	<u>L/C</u>	<u>Fx</u>	<u>L/C</u>
Technical Assistance											
<u>10</u>											
<u>10</u>											

PROJECTION OF EXPENDITURES - TOTAL PROJECT

1. Technical Assistance	128		182		150					460	
2. Loans to Farmers		329		0		298		731		347	
3. Storage Facilities & Equipment											1705
- Cold storage units			195								195
- Construction costs		60		65							125
4. Office Building		86		70							156
5. Construction supervision		8		10							18
6. Refrigerated truck			100								100
7. Seed Improvement & Multiplication		25		23		23		23		23	117
8. Training											
- Videotape system equipment	30	5									30
- Seminars, field visits, etc.		5		5		5		11		9	35
9. New Personnel		37		37		37		37		37	185
10. Per diem & transportation		12		12		12		12		12	60
11. Land		150									150
12. Operating & maintenance costs		223		223		223		223		223	1115
13. Evaluation				8		8		8		12	36
<u>158</u>	<u>940</u>	<u>477</u>	<u>453</u>	<u>150</u>	<u>606</u>	<u>1045</u>		<u>66</u>		<u>785</u>	<u>3707</u>

7. Training: 65,000 will be financed by AID including \$25,000 in L/C for seminars, field visits, and purchase of printing materials, and \$30,000 to finance video system equipment, plus 5,000 in L/C that will be financed by CREDICOOP.

8. Seed Improvement and Multiplication: 117,000 in L/C will be financed by AID for the improvement and multiplication of seeds and seedlings by IAN/MAG.

9. Operating Expenses and Maintenance: 1,115,000 in L/C will be financed by CREDICOOP.

10. Agricultural Machine Specialist: \$10,000 in F/C will be financed by the Swiss government.

11. Evaluation: 36,000 of AID funds will finance four evaluations. The first one will be carried out at the end of the second year of the Project at a cost of 8,000, and the final evaluation will be held at the end of the fifth year costing 12,000.

B. Rationale for Construction of Office Space

The fruits and vegetables project contemplates construction of an office building to house administrative personnel working with this Project as well as CREDICOOP's existing programs.

This is justified because:

1. CREDICOOP will be increasing its professional office staff by six people. Present office space is already utilized to the maximum and additional space is required for new personnel.

2. The video system equipment must be installed in a separate room where production and editing will be performed.

3. Administration and supervision of the fruits and vegetables center should be located close to the fruits and vegetables complex. This complex in turn needs to be located outside of Asunción relatively close to the wholesale fruits and vegetables market. In that area no adequate rental space is available. CREDICOOP is therefore forced to accelerate its own building plans to assure successful implementation of the AID/CREDICOOP Fruit and Vegetable Project.

C. 611(a) Compliance

Annex VIII contains a summary of documentation supporting the USAID's compliance with 611(a) legislation. The USAID believes that, on the basis of building plans and cost estimates included in Unattached Annex C, the proposed costs are reasonable and firm.

D. Rationale for A.I.D. Contribution to Refrigerated Truck

The Project is predicated on producing fruits and vegetables to raise the income of small farmers and reduce their risk exposure. Off-season production when vegetables are not normally produced is expected to provide the greatest profit opportunity for the small farmer. In Paraguay such off-season production means overcoming the effects of extreme heat. It is not uncommon for temperatures to reach and remain at temperatures of 104° and above for weeks at a time. Just as water resource management is an essential part of the Project to permit hot weather production, cold storage and cold storage transport are essential to the implementation of this pilot Project.

At the present time no fruits and vegetables are being transported in refrigerated trucks. Consequently, it is not uncommon for whole truck loads of tomatoes to be spoiled due to unexpected border crossing delays. The investment in the truck is of a pilot nature as indeed this whole Project is a pilot Project. The refrigerated truck is considered part of the new technology being introduced into the system.

The most efficient utilization of the truck will be determined with the assistance of a United States specialist in cold storage and transport of highly perishable vegetables.

The truck will be used in the following manner:

1. Short and long hauls of perishable crops from cooperatives to CREDICOOP.
2. Transport of crops from CREDICOOP cold storage to local markets.
3. Transport of highly perishable and frozen crops to Argentina, direct from cooperatives and or storage.
4. Backhauling of fresh fruits from Argentina.

Usage of the truck for backhaulage of produce is expected to have several important effects above and beyond the obvious effect of not returning with an empty truck. On the return trip the cargo space in the truck will be utilized to carry fruits and vegetables not grown in Paraguay, such as apples and pears. This will establish a reciprocal trade arrangement between CREDICOOP and Argentine wholesalers or cooperatives purchasing Paraguayan fruits and vegetables. Bartering, in which CREDICOOP exchanges pineapples for pears, for example, will be possible. That should reduce the costs of fruits presently unavailable or that are expensive in Paraguay. CREDICOOP also would gain financially by its markup on such imported produce, thus improving the financial status of its members. It would also enhance its reputation as a dealer capable of supplying a full line of products.

To assure that the proposed refrigerated truck responds to the needs of the project, CREDICOOP will submit a detailed study of the project transport requirements as a condition precedent to disbursement for the refrigerated truck.

E. Justification for Grant Funding

The USAID believes that grant funding of the project is necessary because the implementing institution will be risking a considerable amount of its own resources to carry out this pilot activity. CREDICOOP is providing almost fifty percent of the counterpart for the project and has much at stake because of its substantial contribution. Furthermore, while CREDICOOP is one of A.I.D.'s strongest cooperative programs, it remains a fledgeling institution that should not have to borrow funds for a pilot program of this nature. The USAID feels that CREDICOOP is the best prepared institution in Paraguay, either public or private, for carrying out the proposed project yet the USAID feels that loan funding the project would create undue long-term strains on CREDICOOP.

F. Effects of Project on CREDICOOP

The following table provides a comparison with and without the Project of CREDICOOP's overall financial outlook and scale of operations projected through 1981.

TABLE III
CREDICOOP BALANCE SHEET PROJECTIONS
(US\$ 000)

	Actual Dec. 31 1978	1979	1980	1981
<u>Assets</u>				
Deposits - Banks, Cooperatives <u>1/</u>	1,158	819	316	269
Loans - Accounts Receivable	2,110	3,000	3,612	4,033
Inventories - Supplies <u>2/</u>	98	100	110	121
Fixed Assets (vehicles, furniture) <u>3/</u>	100	110	121	133
Investments (Shares COLAC, OCA) <u>4/</u>	12	13	14	15
Deferred expenses <u>5/</u>	24	16	8	-
Buildings (Storage facilities & Office) <u>6/</u>	-	179	534	507
Land	-	150	150	150
Refrigerated Truck <u>7/</u>	-	-	100	90
Video System (Education Equipment) <u>8/</u>	-	40	36	32
Total Assets	3,502	4,427	5,001	5,350
<u>Liabilities</u>				
Bank Debt	4	-	-	-
BNF/AID Loan	3,352	3,000	3,000	3,000
Other Debts - Accounts Payable	171	40	37	34
Reserves - Provisions <u>9/</u>	196	245	281	321
<u>Net Worth</u>				
Capital Stock <u>10/</u>	214	364	565	751
Donated Capital <u>11/</u>	562	847	1,277	1,528
Retained Earnings	3	(69)	(159)	(284)
Total Liabilities & Net Worth	3,502	4,427	5,001	5,350
CREDICOOP Loans to Farmers:				
Without Project	2,000	3,000	3,300	3,721
With Project			3,612	4,033
Net Earnings for Year				
<u>12/</u>	3	10	25	41
<u>13/</u>			58	58
<u>14/</u>		(82)	(173)	(224)
<u>15/</u>		(72)	(90)	(125)

- 1/ Includes \$242,000 additional AID Credit Contribution
2/ Assumes restricted growth of 10% P.A.
3/ Assumes 10% growth after depreciation
4/ Assumes required annual share purchase
5/ CREDICOOP decreases existing deferred items and does not defer thereafter
6/ Total Cost regardless of source (100% of CREDICOOP costs) less depreciation 5% P.A.

CREDESCOOP BALANCE SHEET PROJECTIONS
(US\$ 000)

	1982	1983	1984
Assets			
Deposits - Banks, Cooperatives <u>1/</u>	406	497	862
Loans - Accounts Receivable	4,405	5,090	5,424
Inventories - Supplies <u>2/</u>	133	146	161
Fixed Assets (Vehicles, furniture) <u>3/</u>	146	161	177
Investments (Shares COLAC, OCA) <u>4/</u>	16	17	18
Deferred Expenses <u>5/</u>	-	-	-
Buildings (Storage facilities & Office) <u>6/</u>	480	453	426
Land	150	150	150
Refrigerated Truck <u>7/</u>	80	70	60
Video System (Education Equipment) <u>8/</u>	28	24	20
Total Assets	5,844	6,608	7,298
Liabilities			
Bank Debt	-	-	-
BNF/AID Loan	3,000	3,000	3,000
Other Debts - Account Payable	31	27	24
Reserves - Provisions <u>9/</u>	365	416	470
Net Worth			
Capital Stock <u>10/</u>	976	1,226	1,497
Donated Capital <u>11/</u>	1,726	1,857	1,857
Retained Earnings	((249))	82	450
Total Liabilities & Net Worth	5,844	6,608	7,298
CREDESCOOP Loans to Farmers:			
Without Project	4,093	4,502	4,952
With Project	4,405	5,090	5,424
Net Earnings for Year			
<u>12/</u>	50	60	70
<u>13/</u>	209	495	544
<u>14/</u>	((224))	((224))	((246))
<u>15/</u>	35	331	368

- 1/ Includes \$242,000 additional AID Credit Contribution
2/ Assumes restricted growth of 10% P.A.
3/ Assumes 10% growth after depreciation
4/ Assumes required annual share purchase
5/ CREDESCOOP decreases existing deferred items and does not defer thereafter
6/ Total cost regardless of source (100% of CREDESCOOP costs) less depreciation 5% P.A.
7/ Less Depreciation 10% P.A.
8/ Less Depreciation 10% P.A.
9/ Increase minimum 1% of Loans
10/ Increase minimum 5% of Loans
11/ Proof of Donated Capital: 1,857 less 562 = 1,295
 CREDESCOOP assets and expenses only
12/ Project without Project net income
13/ Income from Project with 1984 = 10% of 1983
14/ Expenditures of Project with 1984 + 10% of 1985
15/ Total Net Income with Project

G. The following Tables I-III, contain a crop calendar and detailed financial plans for Project credit. The latter support the need for about \$1.7 million in credit to farmers by identifying the capital requirements of each crop. The analysis also shows a breakdown of credit by source, i.e. AID, CREDICOOP, or cash reflows from earlier loans.

The financial plan assumes that only 100 hectares of bananas and a total of 500 farm families are included in the Project, although the body of the Project paper reflects 200 hectares of bananas and 600 farm families. In consequence of present budgetary constraints, it was necessary to reduce the scope of the Project to the 100 hectares of bananas/500 farm families level. It is assumed, however, that if the growing of bananas proves economically viable and desirable CREDICOOP will provide the additional financial resources for an additional 100 hectares of bananas in the fifth year of the Project.

H. Conclusions

The Project cost estimates are sound and derived from a carefully developed Project Budget (Unattached Annex A). The detailed budget will provide the necessary information to Project management for financial decision making. There is reasonable expectation that CREDICOOP can and will provide counterpart and continuing support for the Project after A.I.D. funds are disbursed. In brief, the USAID believes the Project is financially feasible and represents a wise utilization of grant funds.

V. PROJECT IMPLEMENTATION

A. Implementation Plan

1. Implementation Sequences

Signature of the Project Agreement is planned for no later than August 30, 1979. Since this is a Project with a private institution, no GOP approval is required prior or subsequent to the signing of the Project Agreement. However, because the GOP will be providing assistance to CREDICOOP through LAN and SEAG, written evidence of GOP commitment will be a Condition Precedent to disbursement of Grant funds. To fulfill this condition CREDICOOP must have signed implementation agreements with both the Director of SEAG and the Director of LAN. These agreements should be signed no later than 60 days after the signing of the Project Agreement. CREDICOOP will also get a letter of consent from the Minister of Agriculture after he has reviewed the Project Paper.

During September, 1979 100 production loans will be made to initiate the production of tomatoes and bananas. Because bananas take between 12 and 18 months to reach maturity they will not be marketed until the second year of the Project.

The most critical inputs required during the first year are technical assistance (U.S. and Paraguayan), credit and training. Acquisition of the marketing infrastructure, the refrigerated truck, and the administrative offices will begin the first year, but none of these inputs will be functional until the second year. By the third year, all financed crops should be in full production and all infrastructure should be functional.

The initial phase of Project implementation is most critical because the implementing agency must begin with a high probability of success during the first year. Otherwise, the minifundista farmer will lose confidence in the enterprise. The early implementation actions require that CREDICOOP unite the forces of foreign and national technicians to assure that early production loans are successful. During this early stage AID will contract with a Title XII institution to provide foreign technical assistance, including a horticulturist, a fruit and vegetable processing and marketing advisor, two technician years of short-term production advisors, and 16 TM of short-term marketing advisors. The short-term advisors will mainly consist of irrigation and refrigeration specialists. The horticulturist and one irrigation specialist should be brought on board no later than the first quarter of FY 1981.

TABLE I
CREDIT REQUIREMENTS BY YEAR

(\$000)

PY: Oct. 1 - Sept. 30

Short Term ¹	PY1	PY2	PY3	PY4	PY5
Tomato	125	125	125	251	501
Banana	173	-	-	346	-
Pineapple			303	303	
Strawberry				104	208
Subtotal	298	125	428	1,004	709
Medium Term ²					
Tomato	15			15	30
Banana	15			15	
Pineapple			15	15	
Strawberry				15	15
Subtotal	30	125		60	45
Total	328	125	443	1,064	754

1. Seasonal inputs
2. Irrigation equipment

TABLE II

REPAYMENT OF LOAN PRINCIPAL BY YEAR

(\$000)

PY: Oct. 1 - Sept. 30

Short Term ¹	PY1	PY2	PY3	PY4	PY5
Tomato	125	125	125	251	502
Banana			173		
Pineapple					303
Strawberry				103	208
Subtotal	125	125	298	354	1,013
Medium Term ²					
Tomato	3	3	3	6	12
Banana			3	3	3
Pineapple					
Strawberry				3	6
Subtotal	3	3	6	12	21
Total	128	128	304	366	1,034

1. Seasonal inputs
2. Irrigation equipment

TABLE III

CASH FLOW

(\$000)

Year	New Loans ¹	Total Payments	From Interest	From Capital ²	From Principal ³	New Capital Needed	From CREDICOOP	From AID
1	329	135	13	6	116	329	191	138
2	125	135	13	6	116	(-10)	0	0
3	443	333	45	14	274	298	100	198
4	1,064	438	91	17	330	731	376	355
5	785	1,131	154	47	930	347	347	0
Total						1,705	1,014	691

1. Assumes only first cutting for banana financed by CREDICOOP
2. Participating cooptives capitalize CREDICOOP at rate of 5% of loan funds provided their members by CREDICOOP
3. Assumes 90% recovery of loan capital

CREDICOOP will have to undertake several diverse activities during the first year. As illustrated by the Project Implementation Plan Diagram (see Figure 3) these activities are grouped into components, which can be carried out simultaneously and independently. These eight activity components consist of the following:

Component A, which involves the construction of new offices as well as crop storage facilities for the expanded CREDICOOP operations.

Component B, which consist of the acquisition of a refrigerated truck by the end of the second crop year.

Component C, which requires the selection of the first 100 participant farmers and the arrangements for seed, plant stock, etc.

Component D, which involves the preparation of a Project Budget Plan and other Project administration arrangements.

Component E, which concerns the signing of the Project Agreement and meeting Conditions Precedent to the disbursement of AID funds. (This will require the immediate signing of formal working arrangements with SEAG and IAN, because these two institutions will distribute the seeds and plant stock to the 100 participant farmers selected in Component C.)

Component F, which involves the hiring of additional CREDICOOP staff to carry out the Project and the mobilization of the SEAG and IAN personnel assigned to the Project.

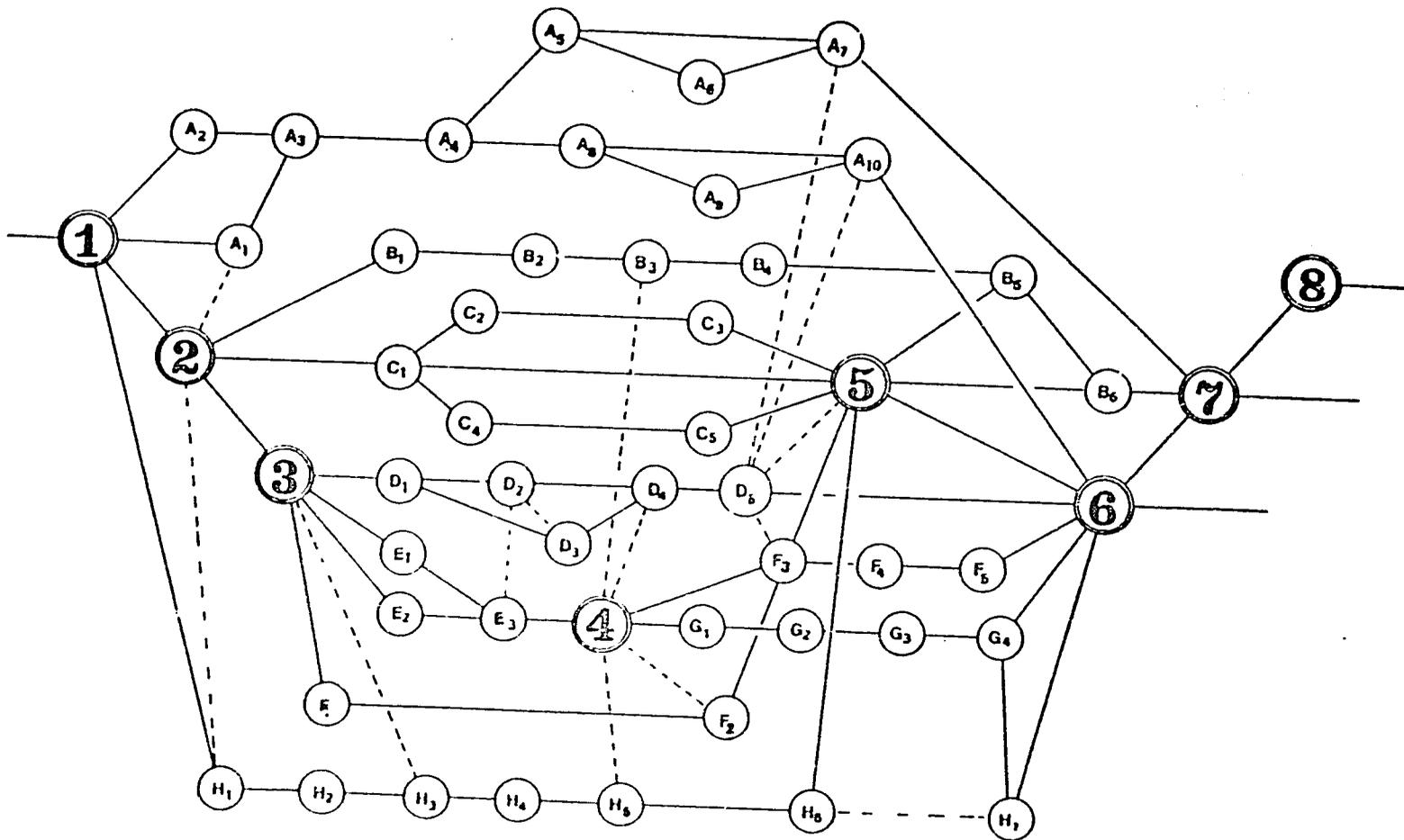
Component G, which consists of the procurement of training equipment and other commodities.

Component H, which involves technical assistance inputs from a Title XII institution contracted for the Project.

By the time the first harvest is done (Key Event # 7) all these preparatory activities are expected to be initiated, some marketing channels established and all Project implementation activities initiated.

A five year time-phased schedule of project implementation is found in Annex VI. The Key Events are as follows:

- (1) Project Paper completed.
- (2) Project Paper approved by AID/W.



PROJECT FLOW DIAGRAM OF FIRST YEAR ACTIVITIES AND EVENTS

FIGURE 3

- (3) Project Agreement signed.
- (4) Conditions met for disbursement of Project funds.
- (5) First 100 participant farmers selected and inputs available to start first season of crop intensification with tomatoes and bananas.
- (6) New CREDICOOP office facilities initiated and all staff, equipment and advisors on board.
- (7) Crops from first 100 participant farmers harvested, new CREDICOOP storage facilities initiated, marketing arrangements made and preparation for second crop season completed.
- (8) Evaluation program developed and initiated.

2. Principal Procurement and Disbursement Features

a. All dollar procurement will be undertaken through direct reimbursement. CREDICOOP will be responsible for preparing request for quotations, IFP's, and IFB's and for awards. Awards will be made by a committee headed by the General Manager of CREDICOOP. USAID approval of awards and contracts will be required prior to the signature of contracts. CREDICOOP will be responsible for obtaining import permits and for arranging custom clearance. Local procurements will be made on a cost reimbursable basis, although advances of funds for up to ninety days needs will be allowed. The specific actions of selecting suppliers, making payments, and controlling inventory will be the responsibility of CREDICOOP, and are expected to be in conformity with USAID guidelines utilized in prior CREDICOOP projects with them.

b. Operating costs

Operating costs will consist principally of salaries for Paraguayan technicians, local consultants, travel and per diem. These operating costs will be the exclusive responsibility of CREDICOOP, which already has adequate administrative safeguards to assure these funds are used in accord with A.I.D. intentions. With the exception of some other costs and travel related to training and the management of the refrigerated truck all of the operating costs will be provided by CREDICOOP counterpart, or indirectly by IAN and SEAG. Some spare parts will be included with the refrigerated truck.

c. Training

Two types of training are anticipated: short-term in-country and long-term academic training. The former, as detailed in the budget (Unattached Annex A), will include short technical courses for farmers

participating in the project. These will be held at the national, regional and local levels. The cost of printing technical pamphlets is included in the training budget. (However, the major thrust will be through the video program.)

Long term training will be carried out in the United States for at least one of the horticulturist at IAN. This training will likely be carried out at the participating Title XII University, will last only six months, and must be of a practical nature not necessarily directly related to gaining an advanced degree. The student would be required to present evidence of enrollment and good academic standing to CREDICOOP, which will be reimbursed for this and all other training costs related to the Project.

d. Technical Assistance - Title XII

A large share of the Grant will finance a technical assistance contract with a Title XII institution to provide 76 technician months of service: one horticulturist for two years, one vegetable packing and marketing advisor for one year, two technician years of selected short term production consultants and 16 TM of marketing specialists. The latter will include specialists in small scale irrigation and cold storage plants, an agribusiness manager and several agricultural economists.

Immediately following Project authorization the USAID and CREDICOOP will present to AID's BIFAD Committee a detailed scope of work for the technical assistance to be performed by the Title XII institution under contract to the Mission. The BIFAD Committee will then conduct a competitive selection, perhaps through RFPs, to identify eligible universities. The USAID and CREDICOOP will then make the final selection in consultation with the BIFAD Committee. Although host country (CREDICOOP) contracting will be utilized for all other services or goods acquired under the Project, it will not be utilized for the Title XII contract due to the complexity of selecting and hiring an appropriate institution. Payments will be made in accordance with normal grant procedures, and the Mission will consult with CREDICOOP prior to each certification of contractor's performance. Dollar costs will be paid directly by the USAID and charged against the Grant.

c. CREDICOOP will sign operating agreements with IAN and SEAG covering their participation in the Project. CREDICOOP will certify satisfactory performance by these contractors in its requests to the USAID for local currency payments in accordance with work performed.

3. Reporting System

CREDICOOP will maintain accounts showing incomes and disbursements related to the Project. This includes accounting for all loans to farmers, and will be done in the same manner as under AID Loan C27. Quarterly

CREDICOOP will furnish summary reports to the USAID Project Manager on the overall progress of the Project.

B. Evaluation Arrangements

The evaluation plan for the project is straightforward and closely correlated with the logical framework. Achievements of Project purpose will be evaluated following years two, three, four and five, as described below:

1. Progress Indicators

The main progress indicator to measure the achievement of Project objectives is the increase in the net cash income of participating farmers. The net cash income is defined as the difference between the cash gross income (value of production sold) and the cash expenses (value of costs paid in cash).

2. Measuring of Project Objectives

The measuring of project accomplishments will be made annually through the records maintained by the cooperatives for each individual member which reflects all the transactions made during the agricultural year. To use these records as an evaluation tool, the following will be necessary:

2.1. Preparation of a list of participating members. A list will be prepared of all members participating in the production of fruits and vegetables, which will be numbered from 1 to n. This information will be extracted from the cooperative records.

2.2. Selection of producers: A random sampling, 10%-20%, of producers will be made.

2.3. Calculation of the Cash Gross Income (CGI). The Cash Gross Income is the value of the production sold.

This calculation will be made for each producer selected in the sample described in 2.2, and will be based on the sales or demonstrated prices information included in the records.

2.4. Calculation of Cash Expenses (CE). Partial cash expenses will be extracted and totaled for each producer. At this stage the cost of technical inputs and labor at discounted values might be included.

2.5. Calculation of the Net Cash Income (NCI). This data will be obtained by subtracting the cash expenses from the gross cash income.

2.6. Calculation of average cash net income (NCIC). The calculation of this data will be made by utilizing a simple average formula:

$$NCIC = \frac{NCI}{n}$$

Where n is the number of producers selected.

2.7. Increase in cash net income. The average net cash income will be compared with:

a) The average net cash income of non-participating producers. This will require a selection of non participating producers in a number equal to the sample taken under 2.2. These producers should have the same approximate characteristics in terms of total land, area cultivated, etc. Likewise, a questionnaire will have to be prepared including questions such as: 1) Crops sold, 2) amount sold, 3) price, 4) cash expenses (insecticides, labor, fungicides, fertilizers, etc.) as well as control questions for total land available, area cultivated, etc.

b) The prior average cash incomes of participating producers.

C. Conditions, Covenants, and Negotiating Status

All Project elements have been developed jointly with the General Manager and staff of CREDICOOP. The Project design, including the budget, has been reviewed and approved by the Board of Directors of CREDICOOP.

1. The Conditions Precedent to Initial Disbursement of the Grant will be that:

a) CREDICOOP shall furnish to A.I.D. in form and substance satisfactory to A.I.D. evidence that Project sub-agreements have been signed with the directors of LAN and SEAG, and that such agreements: (1) clarify the operational and fiscal responsibilities of all entities named therein; and (2) demonstrate adequate support and commitment on behalf of the GOP to proceed with the implementation of the Project.

b) CREDICOOP shall submit a time-phased implementation plan for AID/W approval.

2. Conditions Precedent to Disbursement for Grant Funded Technical Assistance

Prior to disbursement of funds for each Title XII and/or other long term technical assistance activity A.I.D. shall have approved a written contract for each such activity.

3. Conditions Precedent to Specific Project Activities

Prior to disbursement or the issuance of any commitment documents in respect of Grant funds for the following specific activities, the Grantee shall submit to A.I.D. in form and substance satisfactory to A.I.D., the documentation described below:

a. For building construction: a detailed timephased plan for completing the building, with copies of all bid proceedings and contracts related to construction.

b. For any procurement: A description of the procurement procedures to be used by CREDICOOP.

- c. For any training: A time phased plan for all in-country training.
- d. For all farmer subloans: An accounting control plan.
- e. For new personnel to be hired for the project: A time phased staffing plan for new positions, indicating number, job titles, salaries and anticipated duties. This plan must designate one person (other than the General Manager) as the Project Manager of 526-0118.
- f. For trucks: CREDICOOP will submit a detailed analysis of the transportation requirements for the project and alternative approaches to meet these requirements, including truck rentals, prior to the approval of the procurement of any transportation vehicles.

4. Covenants

- a. The Grantee will authorize or cause to be authorized, new staff positions necessary to carry out the Project as planned with a salary structure adequate to attract and maintain qualified personnel in such positions.
- b. The Grantee will be solely responsible for all construction cost overruns associated with any building undertaken as a part of the Project.
- c. The Grantee will submit annual work plans (including credit, requirements based on crop projections) in the subsequent years of the project, prior to the approval of incremental funding for those years.

D. Issues

1. Redesign of the Project

The PID approved in 1977 contemplated a grant to the Ministries of Agriculture and Commerce to carry out a pilot project including production research, marketing studies, processing research, and promotion of the intensified production of fruits and vegetables on small farm in the Central Zone. This grant was intended to be a precursor to a loan to bring the findings of the pilot project to small farmers throughout Paraguay, and to enable them to take advantage of the opportunities identified for increased income and employment.

Further processing of this grant was held up, however, by overall AID programming considerations, and during 1978 the MAG and the Mission put together a project which was recently authorized (Loan 526-T-029, Small Farm Technology, Loan \$5 million, Grant \$1 million), in which the MAG will build up its Extension Service to develop and deliver appropriate technology packages to small farmers throughout Paraguay. During this time CREDICOOP demonstrated interest in exploring diversification opportunities for its farm members but its financial condition and prospects did not enable it to cover additional costs of research, experimentation, and promotion in a new area. The possibility of directing this grant to CREDICOOP seemed feasible and timely.

The project that evolved is substantially that which was approved in the PID: The Goal, Purpose, and Beneficiary Class are unchanged, and the original work items--studies and technical assistance in research, marketing, processing, promotion--are still present. They will be complemented by credits taking the Project into production and marketing, and

the Project will introduce a systems approach to production and marketing at the small farm level. The key difference, of course, is that the Project will be carried out by a private rather than a governmental entity. This will have the added benefit of strengthening a private institution dealing with rural and urban poor. This modification is in tune with the USAID's 1981 CDSS which emphasizes local institution building in agriculture which utilizes pilot programs which address the problems of the rural poor.

2. Grant Funding

When AID/W approved the PID in conjunction with the 1979 ABS it was expected that this Project would be carried out by the MAG. Funding on a grant basis, rather than loan, was justified in terms of the experimental and risky nature of the endeavor, the large foreign (i.e. high cost) technical assistance component, and the absence of revenue-producing project activities. Although the GOP had the financial capability to repay such a loan, the three aforementioned factors were considered adequate justification for a grant.

With the assumption that some revenues will be generated by collections of production credits, these three factors are present in the proposal today; and the designation of CREDICOOP as Project executor and recipient of the AID financing adds a fourth: CREDICOOP is not capable of repaying this funding from Project-generated revenues, does not have other sources, and cannot take on such an obligation without an assured means of being able to meet it. Under these circumstances grant funding is justified.

3. Relationship to Loan 029, Small Farm Technology

It is expected that Loan 029 will have been signed by the time this Project is authorized. Both projects are directed at the small farmer, and share the goal of increased income and employment. The fundamental difference, however, lies in their institutional effects: the Loan will bring about a substantial development of the MAG Extension Service and its ability to deliver production technology, while the Grant will demonstrate to farmers the benefits of association with CREDICOOP, through increased member incomes, and will stimulate the growth of the private cooperative movement. Other differences:

<u>Characteristic</u>	<u>Loan Project</u>	<u>Grant Project</u>
Executing Agent	MAG/SEAG-government	CREDICOOP-private
Technology Focus	Production	Complete system
Crop Focus	All established crops	Fruits & Vegetables - four
Target Group	All Small farms (200,000)	600 small farms
Target Constraint	Production methods	Off-season inactivity

In summary, the Loan will build on existing production, while the Grant will attempt a new venture.

ANNEX I

TELEGRAM

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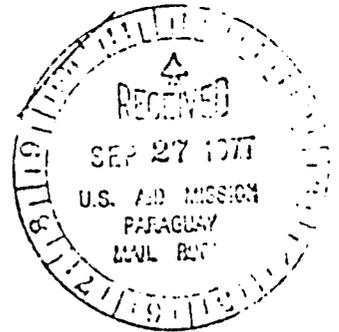
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E.O. 11652: N/A

TAGS:

SUBJECT: PARAGUAY ABS REVIEW

PORTIONS NOT RELATED TO
PROPOSED PROJECT HAVE BEEN
REMOVED

2. MINIFUNDIA CROP INTENSIFICATION. "INTENSIVE REVIEW" IS APPROVED AT THE FUNDING LEVEL SHOWN IN THE PID. THE DAFC DID, HOWEVER, QUESTION WHETHER PROJECT SHOULD BE CONSIDERED AS A COMPONENT OF OTHER MISSION INITIATIVES. MISSION INDICATED WILLINGNESS TO EXPLORE POSSIBILITY OF INCORPORATING PROJECT INTO FY 1978 SMALL FARMER SECTOR PROGRAM. PLEASE ADVISE. NO INTERIM REPORT IS REQUIRED.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

(INSTRUCTION: THIS IS AN OPTIONAL FORM WHICH CAN BE USED AS AN AID TO ORGANIZING DATA FOR THE PAR REPORT. IT NEED NOT BE RETAINED OR SUBMITTED.)

Life of Project:
From FY 1980 to FY 1982
Total U.S. Funding \$ 1,500,000
Date Prepared: April 26, 1979

Project Title & Number: MINIFUNDIA CROP INTENSIFICATION 526-0118

PAGE 1

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Program or Sector Goal: The broader objective to which this project contributes:</p> <p>To increase the net cash income of participating small farmers in minifundia areas of the Central Zone.</p>	<p>Measures of Goal Achievement:</p> <ol style="list-style-type: none"> Increase by 20% the annual cash income of participating farmers. 	<ul style="list-style-type: none"> Study on sales of fruits and vegetables of participating and non-participating farmers. 	<p>Assumptions for achieving goal targets:</p> <ol style="list-style-type: none"> Continuity in the production of traditional crops Diversification of production will improve security in income Conditions of trade with neighboring countries remain favorable.
<p><u>Sub Goal:</u></p> <ol style="list-style-type: none"> To increase the production of food crops with high labor requirements and reduce their marketing constraints. To promote the processing and export of traditional crops e. all as food crops. 	<ul style="list-style-type: none"> 600 farmers cultivating 450 Hac. of fruits and vegetables. CREDESCOOP will locally market or export 10,000 tons of fruits and vegetables Installation and operation of a processing system of fruits and vegetables. 	<ul style="list-style-type: none"> Global plans of cooperatives Individual members files CREDESCOOP and cooperative's reports Regular evaluations by CREDESCOOP AID's on-site inspection of building and operation of agri-business plant. 	<ol style="list-style-type: none"> Small farmers will be willing to diversify cash crops cultivated. Changes in crop mix will permit better use of farm labor

AND 1012-20 (7-71)
SUPPLEMENT 1

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 1980 to FY 1982
Total U.S. Funding \$ 1,500,000
Date Prepared: April 26, 1979

Project Title & Number: MINIFUNDIA CROP INTENSIFICATION 526-G118

PAGE 2g.

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Project Purpose:</p> <p>To establish within CREDICOOP an agribusiness complex to promote and finance the supply of inputs and, consequently, the production, processing and distribution/export of labor intensive food crops such as F&V in the minifundia area.</p>	<p>Conditions that will indicate purpose has been achieved. End of project status:</p> <p>1. The functions of the marketing department expanded to include:</p> <p style="padding-left: 20px;">A. A fully viable fruits & vegetables marketing division staffed by trained personnel and actively engaged in:</p> <p style="padding-left: 40px;">(1) Identifying internal and external marketing opportunities for F&V.</p> <p style="padding-left: 40px;">(2) Providing guidance to other divisions in the planning of loan programs based on type of crops to be emphasized.</p> <p style="padding-left: 40px;">(3) Assist farmers in their marketing operations.</p> <p style="padding-left: 20px;">B. A credit department adequately staffed to manage a directed agricultural loan program for the production of F&V to benefit at least 600 farmers.</p> <p style="padding-left: 20px;">C. In coordination with IAN, SEAG, etc. CREDICOOP will perform research on crops identified by the project and disseminating results to the small farmers. CREDICOOP will have:</p> <p style="padding-left: 40px;">(1) Research results available for 4 crops and 16 new practices, mainly irrigation systems and frost prevention.</p>	<ul style="list-style-type: none"> - Report on actual sales by product. - Reports and/or memos to Departments. Departments have subscriptions in specialized publications. - Training courses in marketing for producers. - Comparison between production and marketing. - Reports from CREDICOOP and from cooperatives. 	<p>Assumptions for achieving purpose:</p> <ol style="list-style-type: none"> 1. CREDICOOP will be able to effectively manage a larger credit program. 2. Adequate technical cooperation received from SEAG, INTN, IAN, etc. 3. That new technology developed is within the capability of small farmers.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project: _____
From FY 1980 to FY 1982
Total U.S. Funding \$ 1,500,000
Date Prepared: April 26, 1979

Project Title & Number: MINIFUNDA CROP INTENSIFICATION 526-0118

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Project Purpose:</p>	<p>Conditions that will indicate purpose has been achieved: End of project status.</p> <p>(2) A total of 600 farmers have adopted new crops or new practices.</p> <p>D. A successful pilot credit program that has:</p> <p>(1) Establish a line of credit for F&V in the project area.</p> <p>(2) Recuprated 90 percent of the loans.</p> <p>(3) Achieved diversification* of the loan portfolio of both the cooperatives and CREDICOOP and provided a more permanent income for the small farmer.</p> <p>(4) Established a base for obtaining financing from external sources of credit.</p> <p>E. A marketing infrastructure that include:</p> <p>(1) Utilization of adequate marketing channels.</p> <p>(2) Construction of an economically viable agricultural complex for the storage, packing, conservation, handling and marketing of small farmer crops.</p> <p>F. Establish a technical department capable of supervising the extension of new horticultural techniques in the field.</p> <p>* Diversification by optimizing use of the resources of cooperative members, cooperatives, and CREDICOOP.</p>		<p>Assumptions for achieving purpose</p>

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 1980 to FY 1982
Total U.S. Funding \$ 1,500,000
Date Prepared: April 26, 1979

Project Title & Number: MINIMUMIA CROP INTENSIFICATION 0-10-10

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS		MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
	Magnitude of Outputs			
Outputs:	1980	1984		
1. <u>Training Seminars (number)</u>			1. CHEDICOOP's records	Assumptions for achieving outputs: 1. CHEDICOOP can increase personnel to meet project needs 2. GOP will make available sufficient personnel and facilities necessary for research work, for example, IAN, ININ, etc. 3. That personnel will remain in the positions for which they were trained.
a. Marketing	3	8	2. Reports from project advisors	
b. Credit	1	4		
c. Formation of pre-cooperatives	-	3		
d. Handling and processing of fruits and vegetables	-	10		
e. For parastatal loans	-	15		
2. <u>Research findings (number)</u>				
a. Marketing analysis	2	1		
b. New crop and/or varieties	2	1		
c. New technology	4	2		
3. <u>Credit Program</u>				
a. Cumulative amt. of loans	100	1,100		
b. Cumulative amount of loans (\$1000)	329	1,705		
c. Delinquency (%)	-	10		
d. Increase in coop share capital		\$170,000		
4. <u>Extension</u>				
a. Additional cooperatives formed	-	3		
b. Small farmers receiving assistance	100	600		
5. <u>Cold Storage/Processing Plant</u>				
(\$ of completion)	30	100		

AID 1920-18 (7-71)
SUPPLEMENT I

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title & Number: HINIPUNDA CROP INTENSIFICATION 526-0118

Life of Project:
From FY 1980 to FY 1982
Total U.S. Funding \$ 1,500,000
Date Prepared: April 26, 1979

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Inputs</p> <p>"See Budget Tables, pp. 22-23a"</p>	<p>Implementation Target (Type and Quantity)</p>	<ol style="list-style-type: none"> 1. LEAID/P records and reports 2. CREDICOOP's records and reports 	<p>Assumptions for providing inputs:</p> <ol style="list-style-type: none"> 1. Qualified experts available on timely basis. 2. Qualified candidates for employment at CREDICOOP are available. 3. CREDICOOP budget funds released on a timely basis.

ANNEX III

TECHNICAL ANALYSIS

The project will be carried out in two regions of the minifundia area of Eastern Paraguay, economically and socially the most important part of the country. The area encompasses portions of six different departments of Paraguay and has special relevance for USAID/P since it is settled by an important portion of AID's small farmer target group. It also contains about 36% of the total population of the country. Population density in the area ranges from 23 to 147 inhabitants per square kilometer as compared to an average of 7 for the whole country, and land holdings of less than 5 Ha. account for 47% of the total number of farm units with less than 21 Ha. in Eastern Paraguay.

A number of factors either directly or indirectly limit the capacity of small farm families in the Project area to produce more food and fiber. An important factor directly constraining yields is the shortage of essential plant nutrients in the soils, the result of inadequate soil management practices. Whereas farmers previously were able to allow their lands to lie fallow for periods long enough to regain their natural fertility; a general land shortage resulting from population growth now largely prevents this practice. The effect of soil depletion on crop yields is dramatically illustrated in the following table, which compares yields for two representative departments of the central zone (Central and Cordillera) and one of the new areas of colonization (Alto Paraná).

Crop	Central Kg./Ha.	Cordillera Kg./Ha.	Alto Paraná Kg./Ha.
Tobacco	875	1,422	1,612
Soybean	1,130	1,340	1,935
Cotton	1,040	917	1,121
Corn	891	1,124	2,082
Cassava	2,387	10,978	15,744

Source: MAG, Encuesta Agropecuaria por Muestreo, 1976

Less obviously perhaps, but equally important, production is limited by factors which discourage on-farm investments, such as precarious property rights and a continuing process of fragmentation of holdings. Land fragmentation, like soil depletion, reflects the increasing pressure on the land due to population growth.

In an effort to relieve population pressure in the area, the Government has relocated some farmers in the north and along the eastern and southern borders with Brazil and Argentina, where they have access to larger and less exploited land tracts. However, little attention has been paid to the mass of small farmers left behind, most of whom have an annual income of less

than \$150*. These farmers practice traditional agriculture, and while they generally provide an adequate diet for their families their cash income is insufficient to satisfy such other basic human needs as health care and education.

Through this project USAID proposes to address the problem of the small farmer living in the minifundia area by assisting CREDICOOP to establish an agribusiness complex to promote and finance the production, processing, local marketing, and export of a mix of labor intensive food crops in the central zone of the country. Accomplishing this objective will require the participation of small farmer members of CREDICOOP's affiliated cooperatives in a program for the production of quality fruits and vegetables for the market. Produce will be sold both in the domestic and export markets, the proportion going to each dependent on relative demand and relative prices in those markets.

Various reports and a feasibility study conducted by Fretes Ventre y Asociados, a local consultant, have indicated that these are good prospects for promoting the production of more than half a dozen types of fruits and vegetables. However the project has narrowed down that number to four, based, among other things, on their good marketing potential and previous experience of farmers with the crops in the project area. The four crops which, by order of priority, were selected for inclusion in the initial production plan of the Project were tomato, banana, pineapple, and strawberries. A more detailed discussion of each crop will be found in Annex V. While the project does not foresee processing the four crops beyond packing and/or cold storage to extend the shelf life of the product in its fresh form, a second stage of the project may well consider expanding the number of crops to be produced as well as introducing more advanced stages of processing such as freezing, juice extraction, dehydration, preserves, etc.

An analysis of the various reports and studies conducted on fruit and vegetable production and related marketing and processing activities indicated that:

1. Based on statistical information developed by Fretes Ventre y Asociados ** there has been a net deficit in the supply of fruits and vegetables in the local market in the last few years. Also, there are indications that the trend is likely to continue during the next few

* See Social Feasibility, Annex IV

** Section IV, Tables 24 & 25, Basic Studies for a Pilot Project of Crop Intensification in the Minifundia.

years "unless there is a significant change in local production". See following Table.

Projections on the Supply and Demand of Fruits
and Vegetables in Paraguay, Year 1978-1983
(In MT)

	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
<u>Fruits</u>						
Total Supply	341,778.4	356,843.8	374,268.4	393,150.4	412,257.4	431,538.4
Total Demand	366,603	383,568	401,327	419,918	439,336	459,616
Net Balance	-24,824.6	-26,724.2	-27,058.6	-26,767.6	-27,078.6	-28,077
<u>Vegetables</u>						
Total Supply	119,609	125,659	133,519	139,842	147,800	156,252
Total Demand	111,769	122,398	134,081	146,919	161,014	176,488
Net Balance	+ 7,840	+ 3,261	- 562	-7,077	-13,314	-20,236

Source: Fretes Ventre y Asociados, op.cit.

An excess in the supply of vegetables was registered only during 1977-1979, during which there was an unusual increase in production. The present deficit supply is met only to a very limited extent by imports from neighboring countries, especially because prices prevailing in Argentina and Brazil are generally higher than Paraguayan consumers can afford. Thus, meeting the local demand with locally generated production will appropriately create not only an additional source of income and labor, but it will also contribute toward improving the nutritional level of the local population. Not to be overlooked is the fact that an increased production of fruits and vegetables that is diverted to the export market can be an important source of revenue for the country.

2. There are no major factors limiting the production of fruits and vegetables in the central zone; agronomic conditions are relatively favorable, as are ecological conditions. The general climate of the area, although subject to occasional high temperatures during the summer months and some frost during the winter season, is relatively mild. In general, the soils have good physical characteristics for cultivation, the predominant texture being sandy-loam or sandy with drainage ranging from good to excellent. Permeability is adequate.

The central zone produces a wide variety of both perennial and annual crops, and it is the most important production area for fruits and vegetables in the country. Among crops grown with good results are tomatoes, sweet pepper,

bananas, oranges, grapefruits, lemons, pineapples, strawberries, mangos, avocados, grapes, corn, etc. Most of the still limited production of fruits and vegetables is in the hands of small producers who, by producing several types of crops, avoid the greater risks of monoculture. They produce fruits and vegetables primarily for home consumption and for sale at the farm gate. There are few commercial-scale producers of these crops in the area.

3. Extension activities carried on by the Agriculture and Livestock Extension Service (SEAG) are concentrated mainly on increasing the production and productivity of commodities, such as cotton and tobacco, designated to be priority items under MAG's National Commodity Programs. Crops included in the National Commodity Programs are part of a concentrated effort by all GOP agricultural organizations to promote traditional income generating export crops. Although SEAG focuses on the National Commodity Program, it has occasionally promoted fruit and vegetable production, especially encouraging rural families to establish vegetable gardens.

4. There are many excellent varieties of fruits available at the National Agronomic Institute (IAN), but agronomic research does not extend beyond varietal analysis or beyond the borders of the research station. Lack of attention to such factors as existing costs of production, marketing, product quality, and similar types of problems inherent in every fruit and vegetable production program greatly reduces the transferability of research results to small farmers, who are at once faced with a broad range of problems of an economic, production, and marketing nature.

Adequate research might well have prevented the problems related to disease outbreaks in citrus and bananas which caused Paraguayan producers to lose their dominance of the export market. Citrus canker in the early '70's and leaf spot in the early '60's destroyed most of the native fruit orchards and plantations having commercial value, causing Paraguay to shift from a fruit and vegetable exporter to an importer of these products.

New commercial orchards and plantations are being established on a limited scale with improved varieties of citrus, bananas, and pineapple. Also, small producers presently show interest in establishing plantations of improved varieties and in adopting improved practices by taking advantage of a strategy of the big producers to build a network of suppliers of quality products for the export market.

An example of increased activities in the fruits and vegetables area is that of Citrus Paraguaya S.A., a commercial grower and exporter of citrus, pineapple, banana, bell pepper, and tomato. Besides producing a major portion of the fruits and vegetables it markets, this company also distributes seeds and seedlings and provides technical assistance to small producers. In turn these producers often supply the firm with fresh products for its marketing outlet. The strategy of the firm is to control, insofar as possible, the various constraints affecting the fruit and vegetable business. Not only is the firm trying to build a large volume of operations, but it is attempting to diminish risk factors by adopting such features as improved varieties of

crops, irrigation, cold storage, and efficient transportation. Although relatively commonplace worldwide, these activities are quite innovative in terms of the Paraguayan experience.

There are also a number of common experiences linking small farmers who "by their own initiative and/or the action of promotion agents, have implemented socio-economic organization mechanisms tending to face the problems brought about by production and commercialization"* of fruits and vegetables. Although these experiences have had a mixed history of success and failures, the fact remains that a sizeable number of small farmers survived the institutional failure of their own organizations and could become the new core of a better organized similar effort, as proposed by this Project.

Some of the more noteworthy experiences are:

a. The Comité de Horticultores Unidos, or committee of fruit and vegetable producers organized in some districts of San Lorenzo and Capiatá in the early '60's, which was an outgrowth of the 4-C Clubs organized in the area by SEAG. Reportedly that effort collapsed because of a persistent lack of leadership.

b. Starting in 1976, the Friendship Mission, through its PROMURI (Promoción Urbana, Rural, e Indígena) technical assistance team, organized approximately twenty committees of small farmers in different sections of Capiatá, Itauguá, Itá and Villeta, for the purpose of producing and marketing horticultural products, especially tomatoes. With some exceptions, the individual groups attained a strong operating base and a few of them are even in the process of becoming full-fledged cooperatives. For more detail, see Fretes Ventre y Asociados report, Vol. I, case studies.

c. The promotion program for the production and marketing of strawberries in the areas of Areguá and Nemby is also quite illustrative of the horticulture experience of farmers. The program started in Areguá in the middle 1960's mainly as a farming alternative for the high proportion of minifundia farmers living in the area. At present, about 200 families are making their living by growing strawberries. Strawberries are also a source of seasonal labor for a good number of people, especially during harvest time.

d. Host country interest in crop intensification as a viable alternative for minifundia farmers is currently very high. In one interesting experiment the Institute of Rural Welfare, the GCP land reform agency, in 1975 established a colony in the heart of the minifundia region (colonia Nuatí), comprised of 44 small farmers on one and two Has. lots dedicated almost entirely to vegetable production for the Asunción and Argentina markets. The colony's principal crops are tomatoes, bell peppers and onions, supplemented by cabbage, carrots, and a little corn, sugar cane, cassava and cotton. Further evidence of Paraguay's growing interest in crop intensification for the

* Fretes Ventre y Asociados, op. cit., Vol. I, page 33

Central zone is the frequent coverage devoted to this approach by the three major daily newspapers. Headlines such as "Horticulture: A solution for the small farm area" are quite common these days. See AID/W files, Unattached Annex D, for other newspaper clippings on this subject.

All in all, the above experiences confirm that, in spite of its relatively humble contribution to the general economy of the small farmer, horticulture is not necessarily a newcomer to the agriculture of Paraguay.

5. Marketing problems are among the most critical constraints facing the producers of fruits and vegetables. The perishable nature of fruits and vegetables coupled with such factors as dispersed production, lack of marketing organization, efficient transportation, and cold storage facilities result in heavy losses to the producer. The incipient processing industry does not provide a viable outlet to seasonal surplus production nor does it stimulate production. In fact, it is not unusual for fruits to be left unharvested while, at the same time, processors are unable to get sufficient quantities of raw material.

The most common marketing channel for fruits and vegetables is the one made up of a series of buyers. The first buyer is generally located in the producing area. He gathers and boxes the product for shipment to export packers, processors, or other wholesale buyers for distribution to sale outlets. No standardized boxes are used at this stage and the producer generally does not have the advantages of grading or price incentives for quality. Another widespread system is direct sale to the consumer by the producer himself, i.e. the woman in the household peddling products in the urban areas or selling them at local street fairs.

Inefficient transportation, storage, and handling also account for heavy losses in the marketing of fruits and vegetables, and the lack of such a mechanism as grower sales contracts substantially increases the risk factor for producers.

Technical knowledge and experience in fruits and vegetables processing is very limited and the prices of such key items as cans and jars are very high. These considerations presently make it unfavorable for the proposed project to embark upon an extensive processing program. However, it is envisioned that the increased production under the Project will go hand in hand with efforts to avoid unnecessary risks and losses to the producer. Although the program will concentrate, at the beginning, on the fresh market, in the long run the more streamlined production/marketing channel through CREDICOOP will provide the foundation for a sound processing program, a natural outcome for an organization handling a large volume of fruits and vegetables.

Excessive risk alone provides a relatively straightforward explanation of why producers prefer to grow traditional crops. Production of horticultural crops will be increased only by creating less risky marketing conditions than those being experienced by traditional producers.

6. While it is reassuring to note that the GOP's National Development Bank (NDB), the largest agricultural lending institution in the country, assigned 63% of its total loan portfolio of over \$120 million to agricultural production in 1977, it primarily supplied the credit requirements of larger farmers with collateral. The average size of loans (\$2,294) suggests that small farmers, according to AID's definition, are not their major borrowers. Only a small portion of the loans went to cooperatives and committees of small farmers. There has been an expansion of credit to the agricultural sector of Paraguay in the last decade largely as a result of the efforts of such external lending agencies as IDB, World Bank, AID, etc. It is interesting to note some of the conclusions drawn by international lending organizations in relation to the availability of credit to the small farmer. It should also be noted that even though somewhat old, these conclusions are still quite valid:

"Virtually all of the small and medium size farmers are faced with an acute shortage of credits both for crop financing and capital investments... It is estimated that there are approximately 83,000 farms in the 5 to 50 hectare category; less than 10,000 of these farms have thus far received credit from official agencies." *

"In spite of this significant increase in credits to agriculture the great majority of small and medium farmers in Paraguay continue to be faced with extreme scarcity of credit to finance crops and farm investments. Moreover, the possible benefits of greater credit to agriculture have been diminished to a certain point because many of the loans made since 1970 have been directed to the wheat program whose benefits have been much less than those foreseen due to inadequate selection of borrowers, inadequate soils, and poor climatic conditions".*

An AID-financed Sample Survey conducted by Centro Paraguayo de Estudios Sociológicos (CPES) during crop year 1972-1973 concluded that "For farms with less than five hectares in annual and permanent crops, local businessmen supply 81 percent of credit used. For farms of 20 hectares and over, banks supply 98 percent of credit used". Local businessmen usually advance production cash credit and consumer items to carry small farmers through the pre-harvest season. These middlemen lenders (acopiadores) confront high risks in dealing with borrowers having little or no collateral. Lenders are thus forced to charge high interest rates.

Because of their importance, it is necessary to emphasize the role of two institutions that address the credit needs of the lower stratum of small farmers. These are CREDICOOP and the Crédito Agrícola de Habilitación (CAH).

* Banco Internacional para Reconstrucción y Fomento, Current Economic Position and Prospects of Paraguay. (August 25, 1972, p. 21)

** BID, Las Condiciones Socio-Económicas y las Prioridades de Desarrollo en el Paraguay (July 20, 1973) pp. 72-73

While both organizations have distinctive institutional and managerial organizations, their clientele are similar in terms of land size tenure, type of crops, and technologies used. However, statistics indicate that both organizations cover no more than 13 percent of the small farmers in the minifundia area. Both institutions devote their limited resources to projects requiring a high level of technical assistance and credit supervision. In short, they deal with marginal farmers having no access to other institutional sources of credit.

USAID's decision to select CREDICOOP as the implementing agent for this project is based on the rationale that CREDICOOP is truly serving the small farmer, as confirmed by several studies and evaluations of Cooperative membership conducted by USAID. CREDICOOP's field experience coupled with their credit packages demonstrates that they have a solid integrated system for meeting the needs of smallholders. Their credit program is tailored to the needs of USAID's target population and has benefitted from years of relatively intensive technical assistance from the CUNA group. This assistance has helped member cooperatives achieve an adequate level of capitalization. This has helped the organization approach self-sufficiency, which is expected by the end of this calendar year. The USAID feels that CREDICOOP is sufficiently sound to be able to undertake a new and challenging project, the one being proposed here.

Further Considerations on the Implementing Agent

CREDICOOP is aware that its successful experience in the production and marketing of cotton led its farm members into a syndrome of overreliance on cotton which, among other things, has impaired valid efforts to diversify production and reduce risks to a more manageable level. At the present time there is almost no history of double cropping of cash crops occurring among CREDICOOP members or small holders in general. It is quite common, though for small farmers to grow a limited amount of food crops for their own use and for occasional sale. Corn, mandioca, beans and watermelons are common examples.

CREDICOOP is also concerned with the seasonal nature of the utilization of its loan funds. The absence of double cropping and significant alternative crops to cotton concentrates demand for loan funds into a short time period with large amounts of loans required during the peak cotton marketing cycle of a few months followed by a swift and sudden shift to a surplus capital position only sixty days after peak needs.

Both the USAID and CREDICOOP realize that the financial requirements of the project may add to the seasonal shortage of funds due to the overlapping of cotton with some of the four crops selected. However, this will be a small price to pay for achieving increased small farmer income through crop diversification. Then too, there are good possibilities for CREDICOOP to optimize the utilization of its loan funds once the selection of crops and the crop season are expanded as a result of this project. For example, tomatoes

can be grown year round provided that the right varieties are used and other conditions met.

It should be noted that cotton will continue to be considered an important component in the crop mix of participating farmers. In fact, the bulk of CREDICOOP's effort will still be oriented toward the marketing of cotton. However, the project will attempt to dissuade farmers from heavy reliance on traditional crops such as cotton and tobacco. In brief, the Project plans to capitalize on the comparative advantages of producing fruits and vegetables in the central zone.

Even though CREDICOOP does not claim that its client farmers will be able to achieve dramatic cuts in unit production costs, say, to match costs levels of commercial producers, CREDICOOP is confident that its members will be able to produce at prices that are competitive in both the local and the export markets. Project designers believe that by collective marketing through CREDICOOP's member cooperatives more localized, concentrated production can be attained and unit marketing costs lowered. Further, participating farmers can utilize wholesale rather than individual purchases of key production inputs such as seeds and fertilizers.

The Key Elements

1. Marketing Research and Development

Under this activity the Project will establish a Fruit and Vegetable Marketing Division within CREDICOOP's existing Marketing Department. The new division will be staffed with personnel qualified to analyze the market, both domestic and export, for fruits and vegetables, and to advise CREDICOOP management as to optimal production and marketing strategies for its produce. The division will include within its strategy statements recommendations covering quality control, timing of production, and which of the alternative fruit and vegetable crops to emphasize in CREDICOOP's production plan. These recommendations will be based upon the division's assessment of such factors as (a) price trends and seasonal price fluctuations in potential markets and (b) market standards, such as size, quality, and variety limitations, which must be met in order to enable CREDICOOP to penetrate potential markets.

In addition to its role in market analysis and planning, the Marketing Division will assist CREDICOOP farm members in moving their produce from the farm gate to retail outlets or to the packing plant for export. It will also design mass media programs to promote consumption of fruits and vegetables in Paraguay as well as to educate consumers about product quality.

2. Production Credit

With a good knowledge of market demand, CREDICOOP will design and implement a pilot credit program especially tailored to the needs of participating farmers. The program, due to its innovative nature will be

accompanied by a comparatively large technical assistance program and will have to make provisions to finance such investments as irrigation systems and other inputs to check production risks. Credit policies regarding this project will conform to current CREDICOOP policies, with the exception of loan ceilings which, given the high production costs involved in fruits and vegetables, will be increased accordingly. Regarding the diversification policy, CREDICOOP will take into account the efficient use of its own loan portfolio as well as that of the member cooperatives and the economic interest of its members.

3. Physical Infrastructure

The physical infrastructure to be financed under this pilot project will consist mainly of a packing plant and cold storage facilities for fresh fruits and vegetables.

The feasibility study conducted by Fretes Ventre y Asociados concluded that, in order to absorb the production to be generated in the project area, the plant should be able to handle between 50 and 60 thousand metric tons of fresh fruits and vegetables per year, as well as provide a total of 1,300 cubic meters of cold storage space. The break-even point for the plant was estimated, at a conservative maximum rate of utilization, at 75 percent starting the fifth year of operations. Although the original mix of crops to be handled by the packing plant differs somewhat from the crop mix to be produced under the project, plant requirements regarding capacity and types of equipment are basically the same. More detailed information is available in the Fretes Ventre study found in the USAID and LA/DR files.

4. Crop Production Research and Extension

Drawing upon its knowledge of the market demand, CREDICOOP's technical unit, in coordination with SEAG and IAN, will develop technical packages for specific crops (time of seeding, disease control, cultural practices, varieties, irrigation methods, etc.) and find the crop combinations most remunerative for small farmers. Research results will be transmitted through CREDICOOP's regular extension channels and through other change agents available to the Project. The Project will utilize the video tape systems, which have been very successfully employed in similar extension efforts among small farmers in Brazil and other developing countries, to facilitate dissemination of information. (See Detailed Project Description for details on use of the video tape system.)

All in all, it is felt that the proposed project is technically sound, and that the inputs required are reasonable, appropriate and cost effective. It is believed appropriate to implement the project through an institution which has already demonstrated its ability to effectively reach small farmers through a credit program. Furthermore, that institution, CREDICOOP, will be better able to utilize its loan portfolio while strengthening its marketing and technical assistance departments.

ANNEX IV

SOCIAL ANALYSIS AND PROJECT MAPS

I. BACKGROUND

USAID/Paraguay's analytical description of the poor in Paraguay contained in the Country Development Strategy Statement FY 1981 clearly demonstrates that much is known about the intended beneficiaries of the proposed project. Several recent USAID research efforts analyzing Paraguay's rural population provide the Mission with an unprecedented understanding of the rural target group. In the analysis which follows no attempt is made to reiterate all of the information contained in the CDSS and other approved USAID documents. What follows is a brief summary of where and how the rural poor live. That analysis is strengthened by a summary of work specifically undertaken for the proposed project by the Paraguayan firm Fretes Ventre & Asociados. The Fretes Ventre's firm completed their full social soundness analysis in accord with instructions contained in AID HB3. All observations contained in the contractor's 150 page report could not be included in this project paper and readers desiring greater detail should consult, Basic Studies for a Pilot Project of Crop Intensification in the Minifundia Area of the Central Zone of Paraguay, Volume I., AID/W files, Unattached Annex E.

A. Where the Poor Live

The rural poor are concentrated in five geographic regions. They are: 1) the Minifundia region, often referred to as the Central Zone, encompassing the older farming areas close to Asunción, the site of traditional Paraguayan agriculture; 2) the cattle region, a mixed minifundia/latifundia area covering the departments of Misiones and Ñeembucú; 3) the Itapúa region, a modernizing area undergoing rapid economic expansion; 4) the Eje Norte (Northern Axis), an older settlement area with extensive new colonization areas; and 5) the new colonization region, covering the departments along the northeast border with Brazil.

75.8% of Paraguayan rural households have per capita incomes below the poverty level, while 53.2% had incomes less than \$150 in 1977. 49.1% of the households below the poverty level are in the minifundia zone*. Another twenty percent of this income group is in the new colonization zone and 15.7% in the eje norte. Of those households with less than \$150, half of them are in the minifundia zone. Looked at in another way 76.3% of the

* AID/PPC suggested \$150 per capita as the poverty income level in 1969. The real value in current dollars of that measure in Paraguay would be about \$330.00 in 1977. Thus, the \$ 40,000 which we have used as the determinant of the poverty level (\$300) appears to be comfortably within the guidelines.

households in the minifundia zone are below the poverty level while 54.9% have incomes of less than \$150 per person. Comparable figures for the new colonization zone shows 71.5% with incomes of less than \$300 and 47.9% of less than \$150. For political as well as economic reasons, the GOP is developing programs in the new Colonization area and is obtaining assistance from other donors. Hence, the two zones of most interest to USAID/Paraguay are the minifundia zone and the eje norte.

A recent USAID survey sample was carefully designated to reflect proportionally the regional distribution of the rural population. It revealed that 62.2% of the rural households are found in the minifundia and Eje Norte zones. In round numbers, there are about a half million poor in these areas.

B. Major Characteristics of the Rural Poor

In Paraguay, the census definition of urban and rural can be misleading. The Census classified all district capitals as urban. Hence, many small town dwellers are classified as "urban" but they are chiefly engaged in farming or an agriculturally related job. By this definition, the 1972 Census classified 62% of the population as rural. The recent USAID survey includes households in small interior towns, some of which would be classified as urban by the Census, but which, for all practical purposes, are rural households.

1. Occupation. The principal economic activity of rural households in Paraguay is agriculture. Of the households interviewed in the Vera/Laird study, 54.4% listed farming as their principal activity*. The principal activity of the other households is: manufacturing (home crafts, food processing and small industry), 15.2%; commerce (storekeepers) 9.3%; agricultural day labor, 8.3%; services, 3.6%; all other, none exceeding 3% of the total. Of those households that listed farming as the major occupation in 1977, 61.5% received less than \$150 per person; and 32.2% less than \$300. For those households whose principal activity was not farming, the proportion earning less than \$150 per person was: small manufacturing, 35.8%; services, 51.2%; commerce, 53.9%; and agricultural laborers, 57.7%. Of the households which listed farming as the principal occupation, one-third had per capita incomes of less than \$75 annually. 67.5% of these households were in the minifundia and eje norte zones.

74.5% of farm households below the \$150 level grow cotton as their principal crop. These households are also typically growers of corn, manioc,

* The David Vera/Judy Laird study is a socio-economic survey of approximately one per cent of the rural households in Eastern Paraguay. It will be published o/a September 30, 1979 under the title: Socio-Economic Survey of Rural Paraguayan Women.

and petit grain. This typical farming practice reflects a rational response to efforts to utilize available family farm labor to the maximum, producing cotton and petit grain for the cash economy and corn and manioc for family consumption. Of farm households in this income group whose principal crop is cotton, 50.8% cultivated less than three hectares, and 83.9% cultivated less than five hectares.

Using \$300 as the poverty level, we find that 82.1% of farm households fall in this group. 58.3% of such households are in the minifundia and eje norte zones. 72.% of households in this income group produce cotton as the major crop. 6.6% produce tobacco as the major crop. 76.4% of the cotton producers in this income group cultivated less than five hectares in 1977.

A substantial proportion of households whose principal economic activity was not farming also fall into the poverty level. Annual per capita incomes of less than \$300 were reported by: 66.3% of those engaged principally in commerce; and 82.1% of agricultural day laborers.

At this point a number of conclusions stand out:

- the poor in rural Paraguay are heavily concentrated in three economic zones.
- farming is the principal occupation of the majority of rural households.
- most farm households are poor.
- for farmers, cotton is the principal crop.
- most cotton farmers cultivate less than 5 hectares.
- the vast majority of those in other occupations in the rural areas are also below the poverty level.

2. Living Conditions

The rural poor, whether in the countryside or in a village, live a very humble existence. 56% of rural households surveyed in 1977 owned less than \$58 worth of household possessions*. 11% of the households had no facilities for human waste disposal, 81% had inadequate outdoor latrines, and only 7% had some type of improved outdoor latrine.

* Inventory of 11 basic items, excluding value of house, well and electrical connections.

81% of the rural poor cook on the ground, 13% have a mud or wattle stove, and only 6% have a modern or gas stove. Only 6% of the rural population have access to safe water. 32% get water needed for home consumption from a nearby spring. 63% have a hand dug well with rope and bucket for drawing water. 3% must carry water from a nearby stream or river. However, a falling water table in recent years has caused many wells, springs, and streams, to go dry forcing many people to go more distant sources for water.

It is characteristic of the rural poor to experience high infant mortality rates, estimated officially at 84.8 per 1,000 live births. Among the principal causes of high infant mortality are respiratory diseases and gastrointestinal disorders, the latter resulting directly from inadequate human waste disposal system and from unsafe water. Housing is generally inadequate with most families averaging 4 to 5 persons occupying one-room structures with thatched roof and dirt floor.

In 1974 only 51% of the rural population (residing in localities of less than 2,000 inhabitants) had access to health services. The average educational level for those seven years of age or older in the rural areas is 2.7 years.

Among the poor, consensual partner relationships are more prevalent than among wealthier economic groups. 18.5% of rural households are headed by a woman. Households headed by women and those having a consensual partner relationship tend to be poorer than any other group. Rural female-headed households have a median family income of \$87 per person, while male-headed households have a median family income per person of \$157.

C. Specific Characteristics of Proposed Participants in the Project

Although the previously described characteristics apply generally to those living in the proposed project zones the Fretes Ventre analysis includes even more detail about the proposed beneficiaries. Fretes Ventre conducted in-depth interviews with 111 farmers (representing 728 farm inhabitants) and 114 community leaders. The latter included agricultural extension agents, moneylenders (acopiadores), leaders of farmer's organizations, and similar local authorities. They conducted interviews in the six central departments and covered all of the areas where the project is to be implemented.

The Fretes Ventre's interviews confirmed that the minifundista group, defined as those controlling less than 3 hectares, is the most disadvantaged group in Paraguay. The study concluded that, "In overall terms these districts are characterized by a marked predominance of agricultural mini-units subjected to a process of socio-economic deterioration.... This situation, added to the inability of this type of farming operation to

retain its own population, and the inability of local industries to absorb the excess labor force, caused outmigration in much of the area."*

The poorest minifundistas are forced to seek off-farm employment, especially for women and children. Agriculture is the most important economic activity on all farms in the zone, regardless of size, but nearly 71 percent of those having farms under 5 hectares earned additional incomes in off-farm employment while only 63 percent did so in the 6-10 hectare farm size group. Among those having less than three hectares and working off the farm most are employed as agricultural day laborers. In short, the interviewers concluded that "the agricultural production of smallholdings is limited by the exploitation of non-intensive traditional crops, the lack of technical assistance, and a process of deterioration that is constantly accelerating among the smallest properties." Farmers interviewed tended to believe to a great extent that fate determines their futures. An interviewer reported that "The market is almost an obsession for the farmer. Without any possibility of controlling it, he witnesses its up and downs and knows it is subject to imprecise rules. He sees it as a real dominator of farming activity. One of our informants, a producer, told us, 'The market decides what shall be the life of farmers'". There is not a single producer who does not note as a key factor the necessity of counting on a sure and stable market. This phenomenon is clearly perceived in the case of those small farmers who are willing to implement new crops.

II. SOCIAL CONSTRAINTS FOR REACHING THE TARGET GROUP

Although interviewed members of the target population are often distrustful of the market, and of outside forces they do not understand, the interviewers found great enthusiasm among farmers for local organizations, such as cooperatives. Upon investigation of the formal information network whereby farmers learn new information, almost one-half of the local leaders reported that periodic meetings were the most important source of information. In terms of information diffusion twenty-one percent of the leaders ranked radio as second in importance.

In regards to formal institutional organizations, farmers insist that organizations should be participative and have strong local roots. A leader of the Asociación de Agricultores (Sugar Cane Growers' Association) at Yataity reflects this point of view when he says: "The groups should organize themselves in their own community, and the institution should be managed, little by little, by the members of the Association themselves". On the other hand, farmers insist that organizations should have "capable directors with the wish to progress", or, as a Yaguarón farmer asserts, "That they back up seriously the changes to be brought about".

The greatest problem is to determine which of the local organizations best represents farmer's interests in the national market place. Fretes Ventre's report that there are 102 different farmer's organizations in the

* Paraphrased translation of Spanish.

central zone. Some regions have many such organizations while others have none. Nevertheless, farmers do not seem to reject or resist institutional participation in local Paraguayan organizations. With regard to cooperatives, Luis Galeano and Ramón Fogel, in their book "Rural Bosses and Cooperatives in Paraguay" conclude that: a) the cooperatives generate a process of modernization of the local productive structures; and their success lies in b) the homogenization of the rural strata within their own structure; c) the existence of capacity and suitability among the interests of local leaders and the various social layers integrating them and d) an adequate capacitation, system and practice in the administrative handling of the same."

The historical record in Paraguay indicates that farmers have, by their own initiative and/or the action of promotion agents, implemented several projects such as the one being proposed. Most notable among these are the 4-H Club garden project, the work of the Mision de Amistad to organize horticultural cooperatives and the activities of various independent Japanese Colonists who successfully founded the horticultural cooperative called the "beehive" (La Colmena).

All these experiences confirm that farmers seem to experience no major social or cultural barriers which prevent them from organizing for a common goal such as the production and marketing of fruits and vegetables. This is especially true when criteria, such as those listed below, are used to select participants in the project.

III. CRITERIA AND SELECTION OF PROJECT PARTICIPANTS

In order to assure that the poorest minifundistas become participants in the proposed project CREDICOOP and the Mission adopted 7 criteria for implementing the minifundia crop intensification program:

1. Only crops with which farmers have prior experience will be included at the initiation of the project. It would be unrealistic to expect farmers to instantly give up traditional crops to cultivate fruits and vegetables virtually unknown to them. The project will thus build upon already established cultural and agronomic practices used by the target group.
2. The maximum land area that can be financed under the project will be strictly limited; in the case of tomatoes, to 1/2 hectare, for bananas one hectare, for pineapple one hectare and for strawberries 1/2 hectare. These limitations will effectively discourage larger producers from wishing to participate in the project and will assure that only the smallest minifundistas gain from project benefits.
3. To minimize risk for project participants the implementing agency will finance production of the selected fruits and vegetables only in regions where agronomic conditions favor, or can easily be made to favor, production.

4. There must be maximum communication between the seller, or producer group, and the buyer, the implementing agency. This will assure that conflict between these two distinctive social groups will be minimized - a factor often overlooked in previous projects of this nature. The proposed videotape educational system should be a novel way of stimulating communications between the two groups and should make the farmer feel that he is more a part of the marketing process.

5. The project should be directed at those zones where there is the greatest surplus of on-farm surplus labor. Areas should be sought out where families are largest and where local off-farm employment opportunities are nonexistent or limited. Again, this will help assure that the project meets the target group.

6. The project should be initiated in areas where a successful CREDICOOP exists. Participants need not be members of course, but they should be potential members and should regard the farmer's local organization as an effective instrument for their own betterment. This will minimize the demands upon the training department of CREDICOOP to teach both cooperativism and F&V production techniques - both of which require considerable dialogue between farmers and outside promoters.

7. The project should be implemented only in those areas where an effective agricultural technician (a national extension agent) works or can be assigned. CREDICOOP paratechnicians cannot be expected to carry out the project without such assistance.

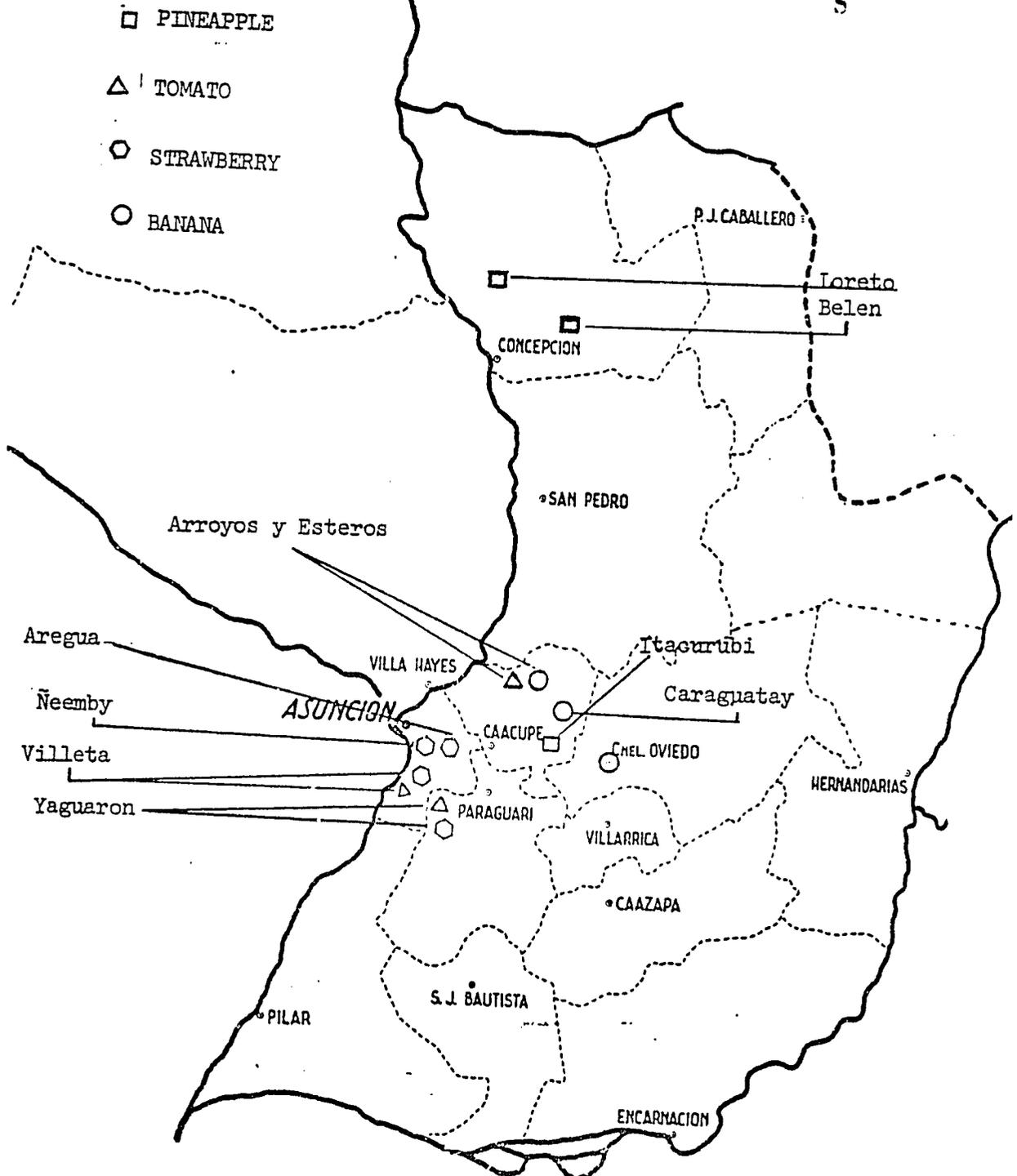
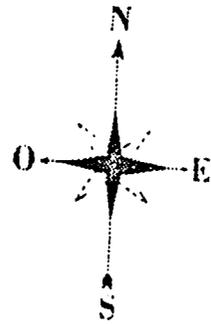
IV. LOCATION AND SIZE OF PROJECT TARGET GROUP

After careful analysis the USAID and CREDICOOP identified specific regions where the above selection criteria can be met. This is a tentative selection of course but the maps on pages 60 and 61 show those areas from which the 3600 project participants (600 farms) will be selected. Further details as to how the cropping and agronomic factors on each of these farms will be effected by the project are contained in the economic analysis. From a social soundness point of view the alternative farm production plans included in the economic analysis seem very reasonable. The plans build upon the cotton monoculture prevailing upon most Paraguayan minifundias and provide economically rational alternatives to farmers who traditionally profit from new or better crops. None of the research conducted on the target group found any major social or cultural resistance to new crops, as long as they were economically advantageous to farmers.

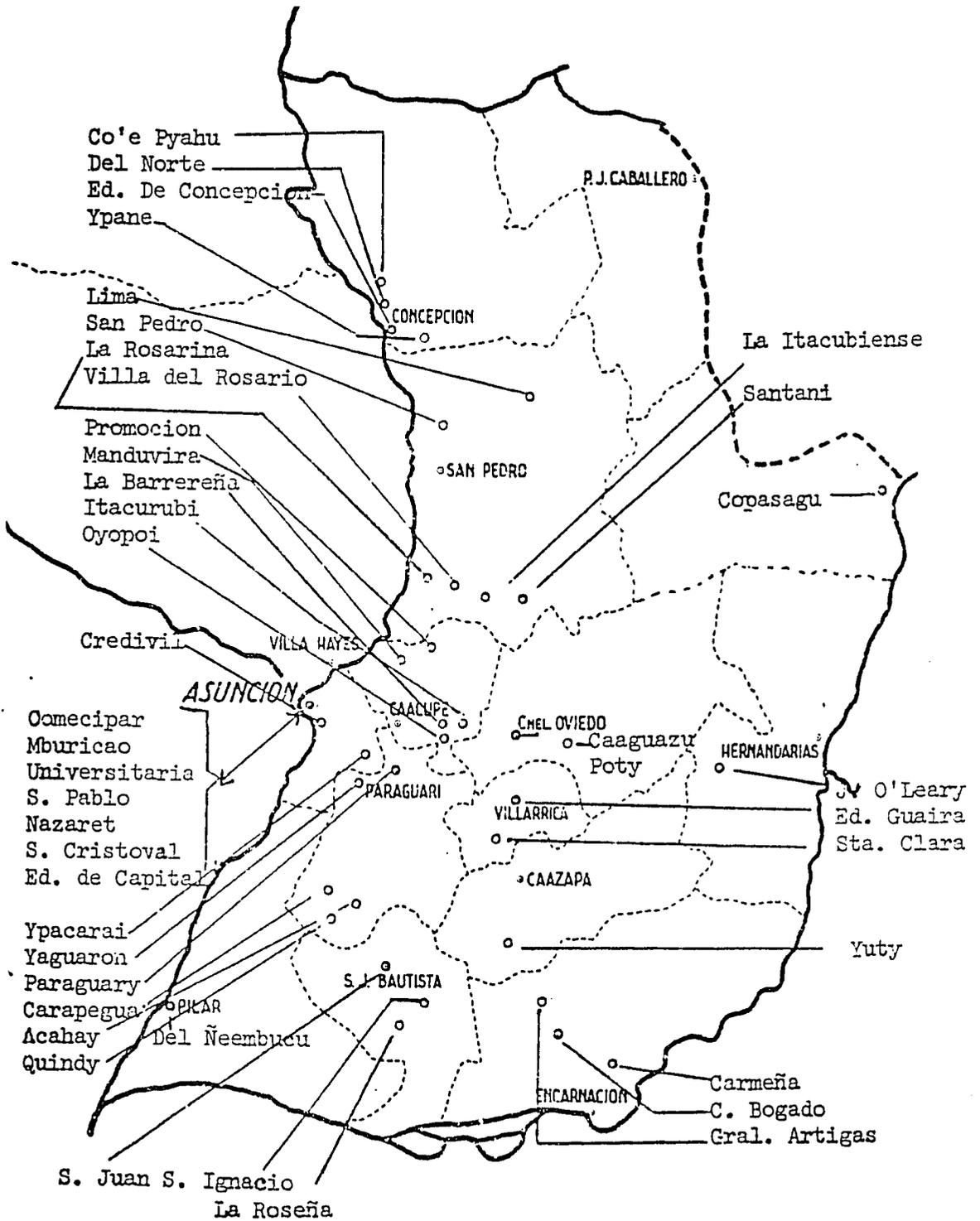
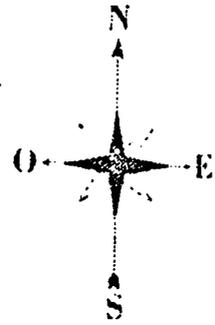
V. SPREAD EFFECTS AND COMMUNICATION

The Fretes Ventre's analysis concludes that the project promises to have widespread positive effects if communication between farmers and implementing agents are maximized. The report states, "A great deal of

COOPERATIVES AND ZONE INVOLVED IN PROJECT



LOCATIONS OF ALL COOPERATIVES
AFFILIATED WITH CREDICOOP



PARTIAL LIST OF CREDICOOP MEMBERS

RURAL COOPERATIVE:	NUMBER OF MEMBERS	ENDING MONTH OF:
1. "Cnel. Oviedo" Ltda.	222	March, 1979
2. "Quindy" Ltda.	183	" "
3. "Santaní" Ltda.	137	" "
4. "Acahay" Ltda.	73	" "
5. "San Pedro del Ycuá Mandyyú" Ltda.	115	" "
6. "Cnel. Bogado" Ltda.	324	" "
7. "Carmeña" Ltda.	183	" "
8. "San Ignacio" Ltda.	284	" "
9. "Promoción" Ltda.	299	" "
10. "Itacurubí" Ltda.	91	" "
11. "Manduvirá" Ltda.	42	" "
12. "La Rosarina" Ltda.	198	February, 1979
13. "Carapeguá" Ltda.	112	" "
14. "Del Ñeembucú" Ltda.	152	" "
15. "Yuty" Ltda.	166	" "
16. "Roseña" Ltda.	103	" "
17. "Gral. Artigas" Ltda.	160	" "
18. "San Juan Bautista" Ltda.	232	" "
19. "Caaguazú Poty" Ltda.	47	" "
20. "Juan E. O'Leary" Ltda.	160	" "
21. "Coé Pyajhú" Ltda.	220	January, 1979
22. "Paraguarí" Ltda.	113	" "
23. "La Barrereña" Ltda.	81	" "
24. "Lima" Ltda.	62	December, 1978
25. "Virgen del Rosario" Ltda.	182	" "
26. COPASAGU Ltda.	1.000	" "
27. "Yaguarón" Ltda.	320	November, 1978
28. "Ypané" Ltda.	86	September, 1978
<hr/>		
28 cooperatives with a total membership of:	<u>5.347</u>	farmers

the project depends on the internalization of messages by the producers, since it is not simply the channelling of credit to individuals, but the organization of the producers as a group. The promotion team must be capable of implementing correctly the objectives of the project and at the same time discover those situations hindering success. A careful selection of the promotion teams is essential to minimize social obstacles." Because of these social soundness concerns all of the technical assistants for the project, and especially those provided by SEAG, will be hand picked by CREDICOOP. This will assure high quality personnel who are sensitive to the social obstacles which might impede the spread of the project.

VI. PROBABLE IMPACT OF THE PROJECT ON INTENDED BENEFICIARIES

In broad terms, the project will include direct means through which new activities will be generated (or existing ones will become more extensive). In this way it constitutes a mechanism for expanding employment opportunities, insofar as family labor can be utilized for intensive cultivation. On the other hand, the implementation of intensive cropping will tend to increase the demand for labor away from home. It must be remembered that the project will influence the channelling of labor resources within the home as well as outside it. Although it is true that with the project family labor will be utilized more on the farm than previously, it is unlikely that the project will completely eliminate off-farm work. What is more it should not be forgotten that although intensive labor utilization is proposed with the project it is generally very limited in time, that is, highly seasonal. In the broad sense, there is little doubt that if stable commercialization mechanisms are brought into being by CREDICOOP the profitability of the project will realign farm labor usage and will increase the income for those minifundistas dedicated to horticultural cultivation.

From the sociopolitical point of view the project will exemplify the need to collectively organize small farmers. The project should stimulate the process by creating highly participatory farm organizations, mainly cooperatives. That will provide a model and a lesson as to how democratic processes can take place among farmers and marketers.

Fretes Ventre concluded that the process of emigration will diminish as a result of the project, especially for the female labor force. Of course, the project will not itself constitute a decisive factor in the alteration of emigration, but will be a restricting element in the process.

According to Fretes Ventre the project will be advantageous in that it will accelerate the process of change toward modernization in the areas where it will operate. The increased utilization of credit and technology, supported by educational programs and a technical team will invariably start and consolidate peasant organizations which will, in turn, stimulate modernizing socioeconomic processes among clients of the project.

VII. IMPACT OF PROJECT ON WOMEN

Female-headed families engaged in farming constitute 10.8% of the families dependent upon farming as their chief income source. These households are more heavily represented among the lowest-income group (families with per capita incomes of less than \$160) than are male headed farm families - 60.2% of male headed farm families, compared to 73.2% of the female headed units. See table below.

Per Capita Family Income Levels of Farm Families (1977 prices)

(Vera/Laird Study of Rural Women)

	Male headed farm families		Female headed farm families	
Less than \$160	686	60.2	101	787 61.6
\$160 \$320	241	21.2	23	264 20.7
\$320	212	18.6	14	226
	1,139	100	138	1,277

Female headed farm families tend to work smaller plots of land than male-headed units. 59% cultivated less than 3 hectares in the 1977-78 agricultural year, compared to 32.6% of male-headed units.

Data on crop specialization is available for male and female headed families only for selected crops - i.e. those with at least 1.0% of the total. This data shows female heads are more concentrated among cotton growers than are male headed units (76.3%, compared to 66.0%). But no data is available on less important commercialized crops, such as vegetables, except for beans, peas, corn and soybeans - not typically considered horticulture.

In summary, the Vera/Laird data demonstrates that women are somewhat more likely to benefit from the project than are men because they comprise a larger proportion of the target group, are more prone to be responsible for growing fruits and vegetables within their households, and are more likely to be seeking employment outside the home. All in all the project should impact very favorably upon them, allowing them to expand their home fruit and vegetable production while increasing their incomes.

VIII. REPLICABILITY OF THE PROJECT

Since this is a pilot project it will cover only a few areas and include a relatively small number of beneficiaries. After considering the criteria for selecting project participants, as outlined above, the donor and the implementing agency of the proposed project have no reason to conclude that the project faces any major obstacles in replication. In fact marketing and agronomic conditions appear highly favorable for encouraging poor minifundistas to enter this type of project. Paraguay might well be on its way to becoming the horticultural "breadbasket" supplying local demand and the large foreign markets of Buenos Aires and perhaps Sao Paulo. No significant negative impact upon the beneficiary group is expected to emerge out of the proposed innovations of the Project.

ANNEX V

ECONOMIC ANALYSIS

Every effort was made in the economic analysis to realistically relate Project costs to expected benefits. Detailed technical and price data were collected on both inputs and outputs so as to permit the best estimates possible of costs and revenues. The benefit-cost ratio was the measure used to evaluate the economic worth of the Project.

1. Main Considerations in Crop Selection

The joint USAID/CREDICOOP Project Committee considered the original list of twenty fruit and vegetable crops suggested by preliminary studies for the proposed Project and identified four of these crops as eligible for financing. The criteria used to select the crops were: 1) favorable domestic and export markets; 2) short time lag between planting and harvesting; 3) adequate knowledge of relevant cultural practices among potential producers; 4) good marketability; 5) wide acceptability by producers; and 6) high profitability per hectare.

Further reasons for choosing the crops were as follows:

a. Tomato: This is a well-known crop in the Project area and is highly regarded among producers because of its high yield and relatively high price in both the internal and external markets. Producers are familiar with the better varieties for specific markets. Tomatoes can be grown 12 months of the year in the Project area, although most of the target farmers do not understand how to do this.

b. Banana: The reasons for selecting banana are very similar to the ones for selecting tomatoes. Furthermore, there is a deficit in the local supply that it is being met with imports from Brazil. Argentina is importing \$40 million worth of bananas from Brazil. Paraguay should be able to share this export market provided it can meet quality and price standards. Nearness to Buenos Aires (a 20 hour truck run) compares favorably with the 100 or more hours required from Brazil.

c. Pineapple: Many of the reasons for selecting this crop correspond to those for tomato and banana. Also, pineapple has good possibilities for canning, an activity already being done locally on a limited basis.

d. Strawberry: This crop is relatively new in the country. In addition to the unmet local demand, high demand exists in the Buenos Aires market.

2. Production Plan

The phasing of production of the four crops is illustrated in Table 1. In the first year of the Project only tomatoes and bananas will be financed, with 25 Has. of tomatoes and 50 Has. of bananas. The same production plan will be used for years 2 and 3. In years 4 and 5, the area under each of these crops will double, reaching 100 Has. of tomatoes and 200 Has. of bananas in year 5 of the Project.

Production of pineapples and strawberries will begin in year 4, with 50 Has. of pineapples and 25 Has. of strawberries. Area under each of these crops will double in year 5.

The number of farmers growing these crops under the Project is projected to reach 600 in year 5.

3. Benefit-Cost Analysis

An expected result of the Project is a decrease in the reliance of participating farmers on single cash crops, especially cotton. Although participants will add one or more fruit or vegetable crops to their cropping systems, most will probably continue to produce cotton on part of their land. For this reason benefit-cost analyses were carried out for two alternative cropping plans, one assuming a complete replacement of cotton by fruit and vegetable crops, and the other assuming that cotton will be produced in addition to fruits and vegetables.

The analysis for the first of these two cases, i.e. that cotton is completely replaced, is summarized in Table 2. The benefit-cost ratio over 10 years yields a benefit-cost ratio of 2.2.

The analysis for the second case, i.e. that cotton remains in the cropping system, is summarized in Table 3. The benefit-cost ratio over 10 years results in a benefit-cost of 2.2.

In determining benefits, prices for crops were derived from average prices in the Asuncion wholesale market (using monthly data 5/78 through 4/79).

TABLE 1
PRODUCTION PLAN

Crops	Year 1		Year 2		Year 3		Year 4		Year 5	
	No. of Farmers	Area (Ha.)								
Tomato	50	25	50	25	50	25	100	50	200	100
Banana	50	50	50	50	50	50	100	100	200	200
Pineapple	-	-	-	-	-	-	50	50	100	100
Strawberry	-	-	-	-	-	-	50	25	100	50
Total	100	75	100	75	100	75	300	225	600	450

TABLE 2

Benefit/Cost Analysis of Project, Assuming Fruits and Vegetables Replace Cotton

Year	----- Project Costs (\$000)-----				(5)	(6)	(7)	(8)	(9)
	(1)	(2)	(3)	(4)					
	Production Costs 1/	Operat.& Mainten. Costs 2/	Capital & Other Costs 3/	Value of Net Addit. to Gross Costs 4/	D.F.	Present Worth Costs 15%	Value of Net Addit. to Prod. (\$000)5/	D.F.	Present Worth Benefits 15%
1	312	327	468	1,075	.8696	935	356	.8696	310
2	312	550	369	1,199	.7561	907	356	.7561	269
3	312	435	32	747	.6575	491	356	.6575	234
4	982	291	41	1,217	.5718	696	1,670	.5718	955
5	1,828	293	37	1,964	.4972	976	4,588	.4972	2,281
6	1,828	293	37	1,964	.4323	849	6,978	.4323	3,017
7	1,828	293	37	1,964	.3759	738	6,978	.3759	2,623
8	1,828	293	37	1,964	.3269	642	6,978	.3269	2,281
9	1,828	293	37	1,964	.2843	558	6,978	.2843	1,984
10	1,828	293	37	1,964	.2472	485	6,978	.2472	1,725
Total	12,886	3,361	1,132	16,022		7,277	42,216		15,679

Benefit/Cost ratio at 15% for 5 years = 1.0; for 10 years = 2.2

- 1/ Costs of inputs including production credit.
- 2/ Technical assistance, training seminars, salaries, travel and per diem, maintenance, evaluation.
- 3/ Videotape equipment, refrigerated truck, storage facilities and equipment, office building, land, construction supervision, unrecovered loans, seed improvement and multiplication.
- 4/ The difference between the sum of columns (1), (2), and (3) versus column (4) in each year is the reduction in costs due to elimination of cotton from the farm plan.
- 5/ The value in each year is the gross value of fruits and vegetables less the gross value of cotton sacrificed by the replacement of cotton by fruits and vegetables.

TABLE 3

Benefit/Cost Analysis of Project, Assuming Fruits and Vegetables are Produced in
Addition to Cotton

Year	----- Project Costs (\$000)-----			(4)	(5)	(6)	(7)	(8)	(9)
	(1)	(2)	(3)						
	Production Costs <u>1/</u>	Operat. & Mainten. Costs <u>2/</u>	Capital & Other Costs <u>3/</u>	Gross Costs	D.F. 15%	Present Worth Costs 15%	Total Value of Product. (\$000)	D.F. 15%	Present Worth Benefits 15%
1	312	327	468	1,107	.8696	963	400	.8696	348
2	312	550	369	1,231	.7561	931	971	.7561	734
3	312	435	32	779	.6575	512	971	.6575	638
4	982	291	41	1,314	.5718	751	1,801	.5718	1,030
5	1,828	293	37	2,158	.4972	1,073	4,850	.4972	2,411
6	1,828	293	37	2,158	.4323	933	7,240	.4323	3,130
7	1,828	293	37	2,158	.3759	811	7,240	.3759	2,722
8	1,828	293	37	2,158	.3269	705	7,240	.3269	2,367
9	1,828	293	37	2,158	.2843	614	7,240	.2843	2,058
10	1,828	293	37	2,158	.2472	533	7,240	.2472	1,790
Total	12,886	3,361	1,132	17,379		7,826	45,193		17,228

Benefit/Cost ratio at 15% for 5 years = 1.2; for 10 years = 2.2

1/ Costs of inputs including production credit.

2/ Technical assistance, training seminars, salaries, travel and per diem, maintenance, evaluation.

3/ Videotape equipment, refrigerated truck, storage facilities and equipment, office building, land, construction supervision, unrecovered loans, seed improvement and multiplication.

T O M A T O

Production cost per hectare, 25,000 plants/Ha.

<u>Item</u>	<u>Unit</u>	<u>Amount</u>	<u>Cost/ Unit</u>	<u>Value</u>	<u>Sub- Total</u>
			₡	₡	₡
1. Physical inputs					
1.1. Seedbed & nursery (550 m ²)	Man/Day	26	400	10,400	
1.2. Soil preparation					
Flowing (2 oper.)					
Plow & oxen	Days	6	294	1,764	
Labor	Man/Day	6	400	2,400	
Disking (2 oper.)					
Disk plow & oxen	Days	2	226	452	
Labor	Man/Day	2	400	800	
Furrowing					
Furrowing plow & oxen	Days	2	294	588	
Labor	Man/Day	2	400	800	
Manuring	Man/Day	30	400	12,000	
1.3. Transplanting	Man/Day	16	400	6,400	
1.4. Fertilization (2 oper.)	Man/Day	10	400	4,000	
1.5. Cultural practices					
Staking	Man/Day	28	400	11,200	
Tying & de-sucking	Man/Day	100	400	40,000	
Spraying (12 oper.)					
Sprayer	Days	12	83	996	
Labor	Man/Day	12	400	4,800	

Item	Unit	Amount	Cost/ Unit ¢	Value ¢	Sub- Total ¢
Hoing (3 oper.)	Man/Day	24	400	9,600	
Irrigation					
Irrigation equipment	Day	100	653	65,300	
Labor	Man/Day	100	400	40,000	
1.6. Harvesting	Man/Day	160	400	<u>64,000</u>	275,500
2. Technical Inputs					
2.1. Seeds	Grams	400	25	10,000	
2.2. Manure	Kgs.	60,000	1	60,000	
2.3. Stakes	Each	20,000	2	40,000	
2.4. Posts	Each	800	70	56,000	
2.5. No. 18 wire	Kgs.	50	140	7,000	
2.6. No. 9 wire	Rolls	10	3,500	35,000	
2.7. Fertilizer	Kgs.	800	50	40,000	
2.8. Insecticides					
Folidol M-40	Lts.	3	800	2,400	
Sevin 85	Kgs.	2	840	1,680	
Padan	Kgs.	2	2,400	4,800	
Decis	Lts.	1	7,000	7,000	
2.9. Fungicides					
Dithane M-45	Kgs.	10	425	4,250	
Vitigran Azul	Kgs.	12	450	5,400	
Agrimicina	Kgs.	0,5	2,800	<u>1,400</u>	274,930
3. Land rent				<u>10,000</u>	10,000

<u>Item</u>	<u>Unit</u>	<u>Amount</u>	<u>Cost/ Unit</u>	<u>Value</u>	<u>Sub- Total</u>
			<u>¢</u>	<u>¢</u>	<u>¢</u>
4. Contingency, 10% on direct costs				56,043	56,043
5. Interest, 18% on direct cost				<u>110,965</u>	<u>110,965</u>
TOTAL					<u>727,438</u>

SUMMARY

1. Physical Inputs	272,500
2. Technical Inputs	274,930
3. Land rent	10,000
4. Contingency	56,043
5. Interest	<u>110,965</u>
Total Cost	<u>727,438</u>

Yield 40,000 Kgs.

Cost per Kilogram:

727,438 ¢ / 40,000 Kgs. = 18,19 ¢/Kg.

Sale price* = 40,76 ¢/Kg.

* Report on marketing, Jorge Talavera

B A N A N A

Production cost per hectare

<u>Item</u>	<u>Unit</u>	<u>Amount</u>	<u>Cost/ Unit</u>	<u>Value</u>	<u>Sub- Total</u>
			¢	¢	¢
1. Physical input					
1.1. Soil preparation					
Weeding					
Labor	Man/Day	6	400	2,400	
Plowing					
Labor	Man/Day	4	400	1,600	
Oxen	Day	4	176	704	
Plow	Day	4	118	472	
Fertilization					
Labor	Man/Day	6	400	<u>2,400</u>	7,576
1.2. Planting					
Labor	Man/Day	10	400	<u>4,000</u>	4,000
1.3. Cultural practices					
Hoeing					
Labor (4 oper.)	Man/Day	40	400	16,000	
Sanitation					
Labor	Man/Day	6	400	2,400	
Sprayer	Day	6	83	498	
Thinning					
Labor	Man/Day	14	400	5,600	
Nematocide application	Man/Day	20	400	<u>8,000</u>	32,498

Item	Unit	Amount	Cost/	Value	Sub-
			Unit		Total
			¢	¢	¢
1.4. Harvesting					
Cutting					
Labor	Man/Day	20	400	8,000	
Carrying					
Labor	Man/Day	4	400	1,600	
Oxen	Day	4	176	704	
Ox-cart	Day	4	115	<u>460</u>	<u>10,764</u>
Total of Physical Inputs					54,838
2. Technical Input					
2.1. Seeds	No.	1,300	30	39,000	
2.2. Manure	Kgr.	50,000	1	<u>50,000</u>	89,000
2.3. Fertilizer	Kgr.	1,300	50	<u>65,000</u>	65,000
2.4. Fungicides					
Mineral oil (5 aplic.)	Lts.	60	90	5,400	
Dithane M-45	Kgr.	10	550	<u>5,500</u>	10,900
2.5. Nematocides					
Furadan	Kgr.	65	370	24,050	
Aldrin 40-EM	Kgr.	50	700	<u>35,000</u>	59,050
2.6. Atomizer - 5 aplic.			1,000	<u>5,000</u>	5,000
2.7. Harvesting boxes	No.	500	100	<u>50,000</u>	<u>50,000</u>
Total Technical input					278,950
3. Land rent					10,000

<u>Item</u>	<u>Unit</u>	<u>Amount</u>	<u>Cost/ Unit</u>	<u>Value</u>	<u>Sub- Total</u>
			<u>¢</u>	<u>¢</u>	<u>¢</u>
4. Contingency (10%)					34,379
5. Interest (18%)					<u>68,070</u>
TOTAL					<u><u>446,237</u></u>

SUMMARY

1. Physical Input	54,838
2. Technical Input	278,950
3. Land Rent	10,000
4. Contingency	34,379
5. Interest (18%)	<u>68,070</u>
Total	<u><u>446,237</u></u>

Production Cost = 446,237 ¢ / 45,000 = 9,92 ¢/Kgr.

Sales price = 20 ¢/Kgr.

PINEAPPLES

ANNEX # 3

Production Cost per hectare variety Cayena Lisa

<u>Item</u>	<u>Unit</u>	<u>Amount</u>	<u>Cost/ Unit</u>	<u>Value</u>	<u>Sub- Total</u>
			₡	₡	₡
1. Physical Input					
1st. Year					
1.1 Soil preparation					
Weeding	Man/Day	8	400	3.200	
Plowing					
Plow & Oxen	Day	4	294	1.176	
Labor	Man/Day	4	400	1.600	
Disking					
Disk plow & oxen	Day	1	226	226	
Labor	Man/Day	1	400	400	6.602
1.2 Preparation of the seed (cleaning & sanitation)	Man/Day	10	400	4.000	4.000
1.3 Planting					
Row delineation					
Furrowing plow & oxen	Day	5	294	1.470	
Labor	Man/Day	5	400	2.000	
Planting	Man/Day	50	400	20.000	23.470
1.4 Fertilization					
Manuring	Man/Day	15	400	6.000	
Fertilization	Man/Day	5	400	2.000	8.000
1.5 Cultural practices					
Hilling up	Man/Day	3	400	1.200	
Hoeing (1 operation)	Man/Day	8	400	3.200	

<u>Item</u>	<u>Unit</u>	<u>Amount</u>	<u>Cost/ Unit</u> ₪	<u>Value</u> ₪	<u>Sub- Total</u> ₪
Application of herbicides (2 applications)	Man/Day	10	400	4.000	
Sanitation					
Sprayer	Day	12	83	996	
Labor	Man/Day	6	400	2.400	
Application of Hormone	Man/Day	8	400	<u>3.200</u>	<u>14.996</u>
Total 1st. Year					57.068
Second Year Physical Input					
1.1 Cultural practices					
Plowing	Man/Day	8	400	3.200	
Application of Herbicides (2 applications)	Man/Day	10	400	4.000	
Cleaning	Man/Day	8	400	3.200	
Protection of fruit	Man/Day	4	400	1.600	
Sanitation (2 applications)					
Sprayer	Day	20	83	1.660	
Labor	Man/Day	10	400	4.000	
Application of hormone	Man/Day	8	400	<u>3.200</u>	20.860
1.2 Fertilization					
Manuring	Man/Day	20	400	8.000	
Fertilization	Man/Day	3	400	<u>1.200</u>	9.200
1.3 Harvesting					
Harvers	Man/Day	40	400	16.000	
Carrying	Man/Day	11	400	<u>4.400</u>	<u>20.400</u>
Total 2nd. Year					50.460

Item	Unit	Amount	Cost/ Unit: ₱	Value ₱	Sub- Total ₱
Third Year					
(Equal to 2nd. Year)					
2.	Technical Input				50.460
1st. Year					
2.1	Seed	No.	35.000	10	350.000
2.2	Manure	Kgr.	25.000	1	25.000
2.3	Fertilizer	Kgr.	250	50	12.500
2.4	Pesticides	Kgr.	5	1000	5.000
2.5	Herbicides	Kgr.	4	1000	<u>4.000</u> 396.500
Second Year					
2.1	Fertilizer	Kgr.	500	50	25.000
2.2	Manure	Kgr.	25.000	1	25.000
2.3	Pesticide	Kgr.	5	1000	5.000
2.4	Hormone	Kgr.	2	140	<u>280</u> 55.280
Third Year					
(Equal to Second Year)					
					55.280

<u>1. Costs</u>	<u>1st. Year</u>	<u>2nd. Year</u>	<u>3rd. Year</u>	<u>Total</u>	<u>Average</u>
Physical Input	57.068	50.460	50.460	157.988	52.663
Technical Input	396.500	55.280	55.280	507.060	169.020
Land rent	10.000	10.000	10.000	30.000	10.000
Contingencies (10%)	<u>46.357</u>	<u>11.574</u>	<u>11.574</u>	<u>69.505</u>	<u>23.168</u>
Sub-Total	509.925	127.314	127.314	764.553	254.851
Interest	<u>91.787</u>	<u>114.703</u>	<u>22.917</u>	<u>229.407</u>	<u>76.469</u>
Total	601.712	242.017	150.231	993.960	331.320

2. Amortization Plan

<u>Year</u>	<u>Capital</u>	<u>Interest</u>	<u>Total Cost</u>	<u>Gross Income (Amort. 0)</u>	<u>Balance</u>
1	509.925	91.787	601.712		601.712
2	127.314	114.703	242.017	1.575.000*	(731.271)
3	127.314	22.917	150.231	1.575.000	(1.424.769)

3. Production Cost = $\frac{\text{Cost Average}}{\text{Average Yield}} = \frac{331.320}{21.000} = 15,78 \text{ ₱/fruit}$

* Calculated in base of 35.000 plant, 90% yield in 1st. and 2nd. year, sale price at ₱ 50/fruit.

STRAWBERRY

<u>Item</u>	<u>Unit</u>	<u>Amount</u>	<u>Cost/ Unit</u>	<u>Value</u>	<u>Sub- Total</u>
			¢	¢	¢
1. Physical Input					
1.1 Soil preparation					
Weeding	Man/Day	8	400	3.200	
Plowing (1 operation)					
Plow & Oxen	Day	4	294	1.176	
Mano de Obra	Man/Day	4	400	1.600	
Disking (1 operation)					
Disk plan & oxen	Day	1	226	226	
Labor	Man/Day	1	400	400	
Seed bed preparation					
Labor	Man/Day	70	400	<u>28.000</u>	34.602
1.2 Transplanting					
Seed preparation	Man/Day	20	400	8.000	
Planting	Man/Day	40	400	<u>16.000</u>	24.000
1.3 Fertilization					
Manuring	Man/Day	15	400	6.000	
Fertilization	Man/Day	8	400	<u>3.200</u>	9.200
1.4 Cultural practices					
Hoeing (3 operations)	Man/Day	45	400	18.000	
Spraying (8 operations)					
Sprayer	Day	8	83	664	
Labor	Man/Day	8	400	3.200	
Irrigation					

<u>Item</u>	<u>Unit</u>	<u>Amount</u>	<u>Cost/ Unit</u>	<u>Value</u>	<u>Sub- Total</u>
			<u>¢</u>	<u>¢</u>	<u>¢</u>
Irrigation Equipment	Day	40	653	26.120	
Labor	Man/Day	40	400	<u>16.000</u>	63.984
1.5 Harvesting					
Labor	Man/Day	300	400	<u>120.000</u>	<u>120.000</u>
Total					251.786
2. Technical Input					
2.1 Seed	No.	80.000	2	160.000	
2.2 Fertilizers	Kg.	1.000	50	50.000	
2.3 Manure	Kg.	20.000	1	20.000	
2.4 Fungicide	Kg.	20	800	16.000	
2.5 Insecticide	Kg.	5	1000	<u>5.000</u>	251.000
3. Land rent					10.000
4. Contingencies 10% over direct cost					51.279
5. Interest 18% over direct cost					<u>101.532</u>
Total					665.579

SUMMARY

1. Physical input	251.786
2. Technical input	251.000
3. Land rent	10.000
4. Contingencies	51.279
5. Interest	<u>101.532</u>
Total	665.579

Yield 15.000 K/Ha.
 Cost p/kilo 665.579 ./ 15.000 = 44,37 ¢/Kg.
 Sale Price: 60 ¢/Kg.

MONTHLY PROJECT IMPLEMENTATION PLAN

3/79 CREDICOOP selects land for new buildings.

7/79 USAID/CREDICOOP complete Project Paper.

Project Paper approved by AID/W.

CREDICOOP and USAID sign project agreement.

Letter of Commitment received from Minister of Agriculture.

8/79 CREDICOOP Prepares Project Budget Plan (first year's activities)

USAID approves Project Budget Plan.

CREDICOOP buys land, obtains building permit, etc.

CREDICOOP names a Project Manager.

CREDICOOP negotiates working agreement with SEAG.

USAID approves SEAG agreement.

CREDICOOP negotiates working agreement with IAN.

USAID approves IAN agreement.

USAID/CREDICOOP prepares scope of work for Title XII technical assistance and sends them to the AID/W BIFAD Committee.

USAID approves proposed Scope of Work for Architect.

CREDICOOP negotiates contract with Architect.

USAID approves contract.

CREDICOOP makes initial payment and Architect starts on final building designs and bidding documents.

CREDICOOP advertizes for key staff members required for first Project year.

CREDICOOP selects key personnel.

CREDESCOP contracts key personnel for Project.

SEAG and IAN technicians selected for Project.

SEAG/IAN technicians and key Project staff mobilize.

9/79 Conditions met for disbursement of Project funds.

USAID notifies CREDESCOP that conditions are met for disbursement of Project funds.

BIFAD solicits proposals from Title XII Universities.

A.I.D. engineer 1 approves final building design and bidding documents

First 100 participant farmers preselected and credit inputs available to start first season of crop intensification with tomatoes and bananas.

Training Program developed and initiated.

CREDESCOP/SEAG/IAN initiate training of personnel during first Project year.

CREDESCOP/USAID develop specifications for video tape and other Project equipment.

Video Tape equipment ordered from Federal Supply Schedule by USAID on behalf of CREDESCOP.

10/79 CREDESCOP makes final selection of tomato growers.

USAID approves selection of 50 tomato farmers.

CREDESCOP makes final selection of banana growers.

USAID approves selection of 50 banana farmers.

CREDESCOP arranges for selected tomato seeds and for selected banana plants to be used during first crop year.

CREDESCOP solicits bids for construction of storage and office buildings.

CREDESCOP awards contract for construction of storage and office facilities and submit draft contract to USAID.

USAID, in consultation with AID engineer 1 approves contract for construction of storage and office facilities.

A.I.D. negotiates contract with best qualified university.

USAID approves contract.

BIFAD receives proposals, prequalifies six best Title XII Universities, and sends results to USIAD/Paraguay.

11/79 CREDICOOP submits request for direct disbursement approval to USAID.

USAID obtains approval from AID/W.

CREDICOOP opens Project Bank Account and requests first disbursement.

Construction of buildings begins.

Training courses begin for Ayudantes del Campo and extension personnel.

CREDICOOP/USIAD make final selection of Title XII institution.

12/79 Active technical assistance begun to banana and tomato growers.

Contract signed for Technical Assistance under Title XII.

1/80 Agribusiness management Specialist arrives.

CREDICOOP completes feasibility study of trucking alternatives, including cost estimates of rental versus ownership and refrigerated versus non-refrigerated units.

CREDICOOP/USAID develop specifications for a refrigerated truck and clears with SER/COM.

CREDICOOP solicits bids.

CREDICOOP receives bids and selects supplier.

CREDICOOP selects supplier and submits documentation to USAID.

USAID approves selection and arranges payment.

Supplier ships truck.

CREDICOOP receives copy of shipping documents.

CREDICOOP/USIAD develop specifications for three cold storage units and clears them with SER/COM.

CREDICOOP solicits bids for cold storage equipment.

CREDICOOP receives bids and selects suppliers of cold storage units.

USAID approves suppliers and arranges for payment.

Supplier ships equipment, CREDICOOP clears customs, etc. CREDICOOP advises contracting University to mobilize technical assistance.

International marketing specialist arrives to carry out feasibility study for prices in the La Plata region.

2/80 Contractor completes construction of storage facilities which are accepted by CREDICOOP and USAID.

On-site visit by A.I.D. engineer 2.

Contractor receives final payment for storage facilities.

Cold storage rooms installation begun.

Domestic marketing specialist arrives to survey limits of domestic market for F&V.

Long-term horticulturist arrives.

4/80 Cold storage rooms completed.

On-site visit by A.I.D. engineer 3.

USAID pays U.S. suppliers of cold storage equipment after approval by A.I D. engineer 3.

Video tape equipment delivered.

9/80 Marketing of first year's banana production carried out.

Marketing of first year's (second phase) tomato production carried out.

CREDICOOP arranges for importation of truck.

10/80 Long-term packing and marketing specialist arrives.

Farm irrigation specialist arrives.

12/80 Truck arrives: Local agent services truck and delivers it to CREDICOOP.

Contractor completes office facilities which are accepted by CREDICOOP and USAID after A.I.D. engineer 4 accepts final product.

CREDICOOP obtains furnishings for new office facilities.

Project evaluation procedures completed and implemented.

1/81 New CREDICOOP office facilities available and all staff, equipment and advisors on board.

Second year's production plan proceeds exactly as it did in the first year.

Technical advisors in Asuncion and in the field are retrained to cope with production problems identified in the first year of the project.

2/81 Title XII advisors, IAN and CREDICOOP submit an applied research plan for seed and plant propagation trials of the four crops being developed under the project.

3/81 USAID approves the applied research plan and sees that funds are available for purchasing plant stock.

7/81- CREDICOOP markets first trials of tomato production in Buenos Aires.
10/81

9/81 CREDICOOP collects, packs and markets second year's banana crop.

10/81 Training programs continue with preliminary courses in pineapple and strawberry production.

Production trials carried out with IAN, SEAG and CREDICOOP.

New loans are made for tomato production and, if feasible, for trials with pineapples and strawberries.

1/82 Annual evaluation carried out.

Loans made for third season banana production.

Irrigation programs for bananas and tomatoes in place and fully functional.

Horticulturalist (U.S.) begins making final videotapes showing how production is done.

Agribusiness management specialist returns to Paraguay to review and assist CREDICOOP with its agribusiness operation.

Short-term cold storage specialist arrives to advise an optimal utilization of cold storage facilities and packing shed.

2/82 First experimentation with cold storage of tomatoes is carried out.

Experimentation with wholesale marketing in domestic market is carried out.

Short-term production specialists are called in as needed.

Research program in plant propagation at IAN is fully developed and functioning.

6/82 U. S. horticulturist leaves post.

National horticulturists are adequately trained to carry on technical assistance program among project beneficiaries.

New varieties of strawberry plants are propagated and in place on farms.

9/82 CREDICOOP collects, packs and markets third year's banana crop.

1/83 Annual evaluation carried out.

Strawberry production and marketing program is fully implemented.

Pineapple production and marketing program is fully implemented.

Training programs for pineapple and strawberry production techniques are fully operational.

Refrigerated truck begins full itinerary of short and long hauls

9/83 Fourth banana crop harvested, ripened and marketed.

11/83 First strawberry production harvested, packaged and marketed.

1/84 First pineapple crop harvested, packaged and marketed.

Tomatoes production continues with staggered production taking place in periods when farm labor is not fully utilized in the production of other three crops in the project.

Annual evaluation carried out.

New loans are made for all project crops - as planting and harvesting schedules dictate.

All training programs continue fully implemented.

9/84 Fifth banana crop harvested, packaged and marketed.

12/84 Second strawberry crop harvested, packaged and marketed.

Second pineapple crop harvested, packaged and marketed.

CREDICOOP, IAN and SEAG complete final evaluation of the project. In this evaluation they rank the desirability of producing the four crops after considering their economic and social benefits. Other F&V crops with production potential are identified.

CREDICOOP continues the project without A.I.D. assistance.

GLOBAL PROJECT TIME PHASED IMPLEMENTATION PLAN

CATEGORY:	FY 80				FY 81				FY 82				FY 83				FY 84			
	1Q	2Q	3Q	4Q																
Construction of F & V Warehouse	█				█															
Construction of Office Building	█				█															
Refrigeration Equipment for Warehouse Installed					█															
Consultant Engineers (A.I.D.)	█		█		█		█													
Technical Assistance (DSB/A.I.D.)	█				█															
Technical Assistance (Title XII)					█				█				█				█			
Farm Credit																				
Training (CREDICOOP)																				
Transportation Support (Refrigerated truck)									█				█				█			

PROJECTED PROCUREMENT BY FISCAL YEAR

SUBJECT: CONSULTANTS

CATEGORY:	FY 80				FY 81				FY 82				FY 83				FY 84			
	1Q	2Q	3Q	4Q																
A.I.D. Engineer 1	█	█																		
A.I.D. Engineer 2				█																
A.I.D. Engineer 3					█															
A.I.D. Engineer 4								█												
International Marketing Specialists (RSSA)	█	█	█	█																

PROJECTED PROCUREMENT BY FISCAL YEAR

SUBJECT: CONSTRUCTION

FY 80

FY 81

FY 82

FY 83

FY 84

CATEGORY:

F & V Warehouse

Office building

Three refrigerated
storage lockers

	1Q	2Q	3Q	4Q																	
F & V Warehouse																					
Office building																					
Three refrigerated storage lockers																					

PROJECTED PROCUREMENT BY FISCAL YEAR

SUBJECT: AGRICULTURAL EQUIPMENT, SUPPLIES AND CREDIT

<u>CATEGORY:</u>	FY 80				FY 81				FY 82				FY 83				FY 84			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Refrigerated Truck & parts					████████████████████															
Farm Credit (peak demand)																				
Tomatoes		████		████		████		████		████		████		████		████		████		████
Bananas	████				████				████				████				████			
Pineapple																████				████
Strawberries															████				████	
Plant Propagations/seeds	████				████				████				████				████			
Videotape equipment	████	████																		

PROJECTED PROCUREMENT BY FISCAL YEAR

SUBJECT: TRAINING

FY 80

FY 81

FY 82

FY 83

FY 84

CATEGORY:

In Country

Short courses for:

Tomatoes

Bananas

Pineapple

Strawberries

United States

Short term horticultural

	1Q	2Q	3Q	4Q																	
<u>In Country</u>																					
Short courses for:																					
Tomatoes																					
Bananas																					
Pineapple																					
Strawberries																					
<u>United States</u>																					
Short term horticultural																					

DRAFT SCOPE OF WORK FOR PROJECT IMPLEMENTATION

REQUEST FOR TECHNICAL ASSISTANCE FOR THE
MINIFUNDIA CROP INTENSIFICATION PROJECT

1. Objective

The objective of the contract is to provide technical assistance to CREDICOOP, a cooperative central of Paraguayan credit unions, to implement an A.I.D. supported pilot project. The Project will promote the production, processing, and marketing of tomatoes, bananas, pineapples, and strawberries by CREDICOOP's affiliated cooperatives in the minifundia (small landholding) zones, especially in the central area of Eastern Paraguay.

The Project contemplates a phased introduction of the four crops. Only tomatoes and bananas will be produced in the first through the third years. In the fourth and fifth years pineapples and strawberries will be introduced. By the fifth year 100 hectares of tomatoes, 200 hectares of bananas, 100 hectares of pineapples and 50 hectares of strawberries will be in production. At that time approximately 600 farm families will be producing and marketing one or more of these crops through CREDICOOP.

2. Background Information on Project Participants

The following are some of the outstanding characteristics of small farmers and farms in the general area of the Project:

- More than 40 percent of the prospective participants own less than one hectare of land; about 20 percent own up to 3 hectares of land.
- A limited number of producers have title to their lands.
- The average farm family is comprised of 6-7 persons.
- Most farmers are familiar only with traditional crops in the area, i.e. cotton, tobacco, corn, petit grain, etc.; few have had experience with fruits and vegetables as cash crops.
- Few farmers have any experience with irrigation.
- Few farmers have finished primary school.
- Farmers are receptive and very kind, especially to foreigners.
- There are very few commercial-scale producers of fruits and vegetables.
- Farms are non-mechanized.

- Most farms lack electricity.

Attachment A gives the production schedule for the Project.

Attachment B describes the Project area.

Attachment C provides a detailed description of the Project, including a summary description of CREDICOOP.

3. General Provisions

Except for the Video Specialist, technical personnel provided under the contract must have had practical experience in the production, processing and marketing of tomatoes, bananas, pineapples and strawberries in a sub-tropical environment. Technicians must have had first-hand experience in working with small farmers with landholdings between 1 and 5 hectares and should be well aware of the economic and technological constraints commonly faced by these farmers. In addition, the technicians must be competent to provide sound advice and guidance for solving practical problems encountered at all stages of the Project. Such advice and guidance should be based on a careful evaluation of local conditions and potential economic returns. Considerable internal travel by the technicians will be required.

4. Detailed Scope of Work

The contractor shall provide the services of highly qualified personnel in various fields related to the production, processing, and marketing of tomatoes, bananas, pineapples, and strawberries in the areas of specialization and at the levels of effort listed below: The time-phased schedule for bringing this personnel on board is found in the attached bar graph entitled "Projected Procurement by Fiscal Year."

<u>Technician/ months</u>	<u>Area of Specialization</u>
24	Horticulturist/Production Specialist
12	Packing and Marketing Specialist
3	Cold Storage Specialist
6	Farm Irrigation Specialist
6	Agribusiness Management Specialist
3	Domestic Marketing Specialist

1	F & V Policy Advisor
<u>18</u>	Short term Production Specialists
76	Total T/M Required

Horticulturist/Production Specialists (24 TM)

A. Minimum qualifications

1. S-3, R-3 or equivalent in Spanish
2. M.S. in horticulture or plant pathology with a minimum of 3 years experience in the production of at least two of the four crops to be produced under the Project. The specialist should have theoretical and practical knowledge of the following:
 - a. Planting: seedbed preparation and orientation, use of hot-beds and root cover.
 - b. Soil management: soil preparation, subsoiling, plowing, disking, preplanting fertilization, erosion control, contour and terrace preparation.
 - c. Fertilization: soil testing techniques and analysis, fertilizer formulation, liming, systems of fertilizer application, utilization of organic fertilizers, crop rotation practices.
 - d. Water management: utilization of natural sources of water, storage of rainwater, alternative irrigation modes (e.g. drip, spray, flood) adapted to specific crops and soils, and selection and installation of water pumps and other irrigation equipment.
 - e. Seed and seedling improvement and multiplication: selection of varieties adapted to various climatic and market conditions; preplanting treatment of seed and multiplication of seedlings.
 - f. Harvesting: control or planning of crop maturation so as to match harvest time with periods of peak demand or best prices.

B. Specific functions

The production specialist will act as Chief of Party for the contractor and will work closely at all stages of Project implementation with the

General Manager of CREDICOOP. Major duties of the production specialist are as follows:

1. To provide guidance to CREDICOOP related to all technical aspects of producing the four crops with which the Project will experiment. Among other things, the technician will:

(a) develop production practices adapted to nonmechanized small farms, with the key practices clearly defined and selected on the basis of their expected profitability for the farmer;

(b) advise CREDICOOP as to the varieties best suited for production, considering climatic and soil conditions, availability of irrigation, consumer preferences, and other factors;

(c) assist CREDICOOP to locate reliable sources of quality seeds;

(d) together with the Water Management Specialist, advise CREDICOOP as to the appropriateness of alternative irrigation systems (or the need for any type of irrigation) for each of the four crops. (It will be necessary to indicate the economic consequences of following each key practice.)

2. To consult with and assist CREDICOOP's audiovisual unit in the preparation of technical bulletins, videotapes, etc. The technician will provide an outline of topics to be covered and will check the materials produced for technical accuracy.

3. To assist CREDICOOP in its evaluation of (a) the potential profitability of the four crops and associated practices recommended for their production and (b) their acceptance by small farmers.

4. To advise CREDICOOP as to the most efficient means for coordinating the work of CREDICOOP's technical personnel and that of the staff of organizations supporting the Project, i.e. the National Agronomic Institute (IAN) and the National Agricultural and Livestock Extension Service (SEAG), as well as the work of other specialists provided by the Title XII University.

Packing and Marketing Specialist (in Transportation, Grading, Packing, and Presentation of Produce) (12 TM)

A. Minimum qualifications

1. S-3, R-3 or equivalent in Spanish

2. Five years practical experience in transportation, grading, packing, and presentation of fruits and vegetables, including the four crops produced under the Project: strawberries, pineapples, bananas and tomatoes.

3. Must be familiar with alternative modes of transporting (long and short haul), grading, packing, and presenting tomatoes, bananas, pineapples, and strawberries, and capable of adapting these methods to Project conditions.

B. Specific functions

The Packing and Marketing Specialist will work closely with and act as a counterpart to the head of CREDICOOP's Marketing Department.

The technician's major responsibilities, including but not be limited to the following, will be:

1. To advise CREDICOOP as to the selection and utilization of the most appropriate methods of transporting, grading, packing, and presenting the four crops produced under the Project.

2. To assist CREDICOOP in locating sources of supply for required equipment and materials.

3. To help CREDICOOP develop an economic incentive program to introduce and promote improved methods of handling and grading fruits and vegetables at the farm and cooperative levels.

4. Assisting CREDICOOP's audiovisual unit in developing printed materials and videotape programs which can be used in training CREDICOOP staff and farmer members of affiliated cooperatives in practices related to transportation, grading, packing, and presentation. The technician will check the materials produced for technical accuracy.

5. To work closely with the Agribusiness Management Specialist and to carry on with that advisor's seven basic job functions after the Agribusiness Management Specialist leaves Paraguay.

Cold Storage Specialist (3 TM)

A. Minimum qualifications

1. S-2, R-2 or equivalent in Spanish.

2. Three years experience in use and maintenance of cold storage rooms, banana ripening facilities and refrigerated trucks.

B. Specific functions

The cold storage specialist will arrive shortly after installation of all cold storage rooms and after procurement of the refrigerated truck. The technician's duties, including but not limited to the following, will be:

1. To train CREDICOOP technicians in the proper utilization of their new cold storage facilities, including training in packing hygiene, handling, storage limitations and overall efficiency in operations.
2. To produce videotapes explaining how the storage system will work.
3. To advise CREDICOOP as to what kind of long-term maintenance system will best meet their needs for all cold storage equipment, including the refrigerated truck.
4. To give practical, hands-on demonstrations of the techniques required for completing functions 1 and 3 above.

Farm Irrigation

A. Minimum qualifications

1. S-3, R-3 or equivalent in Spanish.
2. Three years experience in water resource management for crop production on small farms (up to 10 hectares) under rainfed as well as fully or partly irrigated conditions.
3. Theoretical and practical knowledge of:
 - (a) water balance;
 - (b) water requirements for different crops;
 - (c) selection and installation of irrigation systems based on their profitability and technical suitability for small farms;
 - (d) management of natural water resources.

B. Specific functions

The water management specialist's duties, including but not be limited to the following, will be:

1. To provide technical guidance to CREDICOOP regarding the efficient management of water used in the production of the four crops. Selection of practices to be recommended should be based mainly on their profitability and appropriateness for use on small farms in the Project area. Such practices may involve production under rainfed as well as irrigated conditions.
2. To assist CREDICOOP in locating sources of appropriate irrigation and water storage equipment.

3. To advise CREDICOOP on the installation and use of appropriate irrigation and water storage equipment.

4. To consult with and advise CREDICOOP's audiovisual unit in the preparation of technical bulletins, videotapes, etc. The technician will check the materials produced for technical accuracy.

Agribusiness Management Specialist (6 TM)

A. Minimum qualifications

1. S-3, R-3 or equivalent in Spanish; knowledge of Portuguese helpful.

2. M.S. in agricultural marketing and 5 years experience in marketing of fruits and vegetables, preferably in a Latin American country. Academic and/or practical background must include emphasis on administrative analysis, cooperative development and practical management techniques.

B. Specific functions

The management specialist will work closely with and act as counterpart to the head of CREDICOOP's Marketing Department. This technician's major responsibilities, including but not be limited to the following, will be:

1. To advise the Marketing Department on ways to make marketing of the four crops most profitable.

2. To assist the Marketing Department in identifying market outlets, both local and foreign.

3. To assist CREDICOOP in establishing sales policies, including setting of minimum sales levels, discounts for volume purchases, and prices.

4. To advise CREDICOOP in establishing short and long term production and credit policies based on market potentials, consumer preferences, and other factors.

5. To assist CREDICOOP in identifying critical constraints to increased sales, and to propose measures to reduce these problems.

6. To assist CREDICOOP in selecting those varieties of fruits and vegetables which offer the best marketing prospects. Recommendations for varietal selections will be made jointly by the Market Analyst and the Production Specialist provided under the contract.

7. Advising CREDICOOP as to the most efficient means for coordinating the grading, transportation, packing, and product presentation functions.

Domestic Marketing Specialist (3 TM)

A. Minimum qualifications

1. S-3, R-3 or equivalent in Spanish.
2. Three years field experience surveying marketing possibilities and limitations in domestic markets of developing countries.

B. Specific functions

The technician will collaborate with the Marketing Department of CREDICOOP:

1. To complete a detailed study of the domestic market potential of each of the four crops: bananas, tomatoes, pineapple and strawberries, included in the project.
2. To discuss with CREDICOOP management marketing alternatives and product mixes that will yield optimum financial returns in the domestic market.

Fruit and Vegetable Storage Technician (3 TM)

A. Minimum qualifications

1. S-2, R-2 or equivalent in Spanish
2. Three years experience in refrigerated transport and in cold storage of fruits and vegetables, including processing of bananas in ripening rooms.

B. Specific functions

The refrigeration and food preservation specialist's duties, including but not limited to the following, will be:

1. To guide CREDICOOP in the selection, operation and maintenance of required processing and cold storage equipment, including the refrigerated truck.
2. To advise CREDICOOP as to sources of supply for needed equipment and set up spare parts inventory procedures.
3. To help CREDICOOP devise plans for making most profitable and efficient use of its cold storage capacity and of its refrigerated truck.

F & V Policy Advisor (1 TM)

A. Minimum qualifications

1. S-4, R-4 or equivalent in Spanish.
2. Ten years experience dealing directly with government policies (especially Latin American ones) hindering or promoting international trade of fruits and vegetables.

B. Specific functions

The technician's duties, including but not limited to the following, will be:

1. To assess GOP agricultural policies affecting the fruit and vegetable industry,
2. To brief CREDICOOP and the USAID on GOP policies toward F & V production and marketing, and
3. To meet with Top GOP officials, especially in the Ministry of Agriculture, to explore avenues for shaping policies that will stimulate F & V production and marketing.

Short Term Production Specialists (18 TM)

In addition to the above mentioned in-country services the Project requires use of various short term consultants in the following fields: soils, entomology, plant pathology, weed control, frost control and videotape education.

A. Minimum qualifications

1. Language capabilities will vary considerably, from none to S-4, R-4, depending on the particular position.
2. There will be considerable variation in the experiences of technicians because they will cover a wide variety of technical fields. Qualifications will be spelled out for each technician on a case-by-case basis. These short term technicians will be recruited largely as project "trouble shooters" to deal with technical problems in production as they arise. To give an illustration of the types that might be needed in this group, job descriptions for two positions (video specialist and a frost control specialist) are included below:

Video Specialist

A. Minimum qualifications

1. S-2, R-2 pr equivalent in Spanish.
2. Three years experience in the utilization of videotape equipment for the production of educational programs.
3. Capability to train CREDICOOP personnel in the preparation of educational programs on videotape and in the utilization of videocameras, editing equipment, etc. necessary to prepare these programs. (Potential trainees will have had prior instruction from the supplier of the equipment to be purchased under the Project and may also have attended an intensive three-month course on the subject.)

B. Specific functions

The technician's major responsibility will be to train one or two persons to effectively utilize a complete videotape system to produce quality educational programs related to the production, processing and marketing of tomatoes, bananas, pineapples, and strawberries. These programs will be designed principally to make small farmers aware of recommended practices and to encourage them to adopt these practices.

Frost Control Specialist

A. Minimum qualifications

1. S-3, R-3 or equivalent in Spanish
2. Five years practical experience in frost control in fruits and vegetable production.
3. Familiarity with inexpensive frost control techniques not requiring electricity and otherwise technically feasible on small farms.

B. Specific functions

The frost control specialist's primary responsibilities will be:

1. To propose and demonstrate to CREDICOOP practical, inexpensive methods to prevent or minimize frost damage on the small farms of Project participants.
2. To assist CREDICOOP's audiovisual unit prepare printed materials and videotape programs demonstrating recommended frost control practices. The technician will check materials produced for technical accuracy.

ANNEX VII

INITIAL ENVIRONMENTAL EXAMINATION (IEE)

Project Location: Paraguay
Project Title: Minifundia Crop Intensification
Funding: FY 79, Grant 526-0118
Life of Project: 3 years
IEE prepared by Dallas Dale Fowler, P.E.
Environmental Coordinator
USAID/Paraguay
Date: May 7, 1979

Environmental Action Recommended:

It is recommended that a negative determination be made for this pilot Project. Based on extensive field observation and evaluation of conditions the proposed action will have no significant effects on the physical or socio-cultural environment and is, therefore, an action for which neither an environmental assessment (EA) nor an environmental impact statement (EIS), as defined in AID Regulation 16, will be required.

Concurrence:


Mission Director, USAID/Paraguay

Date:

5/17/79

Assistant Administrators Decision:

I. EXAMINATION OF THE NATURE, SCOPE & MAGNITUDE OF ENVIRONMENTAL IMPACTS.

DESCRIPTION OF THE PROJECT

A. General: The project has the development goal of increasing the income of small farmers in Paraguay by carrying out a pilot project through CREDICOOP (a national private cooperative federation) to promote the production, processing and marketing of selected fruits and vegetables (F&Vs) grown throughout Paraguay but especially in the central area. Working in some 10 districts CREDICOOP will promote increased production of tomatoes, bananas, pineapple and strawberries.

Farmers will be advised how they can best increase their returns from their small plots by using improved crop rotation systems. A team of technicians from CREDICOOP, the USAID, the National Extension Service (SEAG) and the National Agronomic Institute will collaborate to develop technology for intensive production of various combinations of the above mentioned (F&Vs) which are best suited to Paraguay's small farms.

In the 3 year life of the pilot project CREDICOOP anticipates marketing approximately 10,000 metric tons of F&Vs produced under the project. To assure the project reaches only the smaller farmers no family will be encouraged to participate if they grown more than, say, half a hectare of tomatoes or a hectare of bananas. Credit and technical assistance will be limited to the participation of 600 families of small farmers whose land holdings will be in the order of only 3 Ha. each. However, any farmer may market their F&Vs through the CREDICOOP marketing system, if they so desire.

B. Geography & Topography of Project Area: The project small farmers will be in an area that is generally gently rolling but interspersed with small but relatively rugged hills. The valley floors are quite flat. Slopes of the hilly areas are moderate to steep and farming is done on these hillsides and on somewhat flatter areas on top of hills. Terracing is not practiced; however, a little contour plowing and planting is evident.

Sandstone outcrops are common and are practically the only rock formations to be found. Soils vary from sandy to sandy-loam with some residual heavy clays in the lower valley floors.

C. Habitation Patterns: Project area farms vary in size as follows:

1 to 5 Ha. in area	50%
5 to 10 Ha. in area	20%
10 to 21 Ha. in area	20%
21 Ha. plus in area	10%

Most farms face a rural road or a line designated to be a rural road which now may be only a cart track. Most farmsteads have a house and

one or more small, rustic out-buildings for animals and for crop storage. In some cases, generally on farms 5 Ha. or larger, a small agribusiness is a part of the farm operation. In general the rural population is well scattered along the road or trail system and not clustered as in many developing countries.

IMPACT IDENTIFICATION AND EVALUATION FORM

Impact
Identification
and
Evaluation
1/, 2/

Impact Areas and Sub-areas

A. LAND USE

1. Changing the character of the land through:

- a. Increasing the population ----- L (+)
- b. Extracting natural resources ----- L (+)
- c. Land clearing ----- N
- d. Changing soil character ----- L (+)
- 2. Altering natural defenses ----- N
- 3. Foreclosing important uses ----- N
- 4. Jeopardizing man or his works ----- N
- 5. Other factors. - Erosion ----- L (-)

B. WATER QUALITY

- 1. Physical state of water ----- N
- 2. Chemical and biological states ----- N
- 3. Ecological balance ----- N
- 4. Other factors (none)

1/ The following symbols are used: N - No environmental impact
 L - Little environmental impact
 M - Moderate environmental impact
 H - High environmental impact
 U - Unknown environmental impact

2/ (+) indicates rater's evaluation that impact will be beneficial;
 (-) indicates impact will be detrimental.

IMPACT IDENTIFICATION AND EVALUATION FORM

C. ATMOSPHERIC

- 1. Air additives ----- L (-)
- 2. Air pollution ----- L (-)
- 3. Noise pollution ----- L (-)
- 4. Other factors (none)

D. NATURAL RESOURCES

- 1. Diversion, altered use of water ----- L (+)
- 2. Irreversible, inefficient commitments ----- N
- 3. Other factors (none)

E. CULTURAL

- 1. Altering physical symbols ----- N
- 2. Dilution of cultural traditions ----- L (+)
- 3. Other factors. Changes in family structure ----- L (+)

F. SOCIOECONOMIC

- 1. Changes in economic/employment patterns ----- M (+)
- 2. Changes in population ----- L (+)
- 3. Changes in cultural patterns ----- L (+)
- 4. Other factors (none)

G. HEALTH

- 1. Changing a natural environment ----- N
- 2. Eliminating an ecosystem element ----- N
- 3. Other factors. Changing an existing man-made environment ----- M (+)

IMPACT IDENTIFICATION AND EVALUATION FORM

H. GENERAL

- | | |
|--|--------------|
| 1. International impacts ----- | <u>L (+)</u> |
| 2. Controversial impacts ----- | <u>N</u> |
| 3. Larger program impacts ----- | <u>M (+)</u> |
| 4. Other factors. Endangered species ----- | <u>N</u> |

I. OTHER POSSIBLE IMPACTS (not listed above) (none foreseen)

IDENTIFICATION AND EVALUATION OF
ENVIRONMENTAL IMPACTS

NOTE: Impacts can be beneficial as well as detrimental. In surveying the real and/or potential impacts of this project both were considered. On the Impact Identification form, attached, these are indicated by plus (+) for beneficial and minus (-) for detrimental.

A. LAND USE: Certain minor changes in land use patterns will occur as a result of this project. Success, through improved farm products, delivery and prices, will lead to more intensive cultivation of the small parcels of the land the 600 poor project farm families have. Constraints, such as shortages of farm laborers, will tend to limit the amount of land put under intensive cropping.

1. Changing the character of the land through:

a. Increasing the population. Historically the Project area has been characterized by out-migration due to very small land holdings and, in recent years, job opportunities in nearby Brazil and Argentina plus land opportunities in far eastern Paraguay. In the long term it is expected that Project activity may help stabilize the population through better incomes.

b. Extracting natural resources. This would be limited to more intensive cultivation and, due to better farming methods to be introduced, would be a plus factor for the land. Fertilizers will be used and will be organic to the extent possible. The clearing of wooded areas, to obtain additional lands for cultivating, is not foreseen because on these very small farms few wooded areas remain and, too, the farmers generally will be quite fully occupied with the intense farming of their small plots.

c. Land clearing. As noted above, there is little opportunity or reason to be clearing more land. No substantive change in the new wooded areas is foreseen.

d. Changing soil character. Better farming methods, e.g., crop rotation, soil management and fertilization, are predicted to improve the soils on the small farms.

2. Altering natural defenses. No foreseeable consequences.

3. Foreclosing important uses. No foreseeable consequences.

4. Jeopardizing man or his works. No foreseeable consequences.

5. Other factor related to land use. There appear to be no other known factors which might affect land use, with one substantive exception--erosion. With more intense uses of the land there may tend to be added erosion in some places. The teaching and putting into practice of good farming practices will minimize this. Erosion control will be a major concern of the project managers, particularly where and if some irrigation is introduced.

B. WATER QUALITY: The physical state of water in the Project area will be little changed. Until the farmers understand and practice good erosion control along with intensified farming, there will be some extra silt burden in the streams. Other than this, no significant changes in water quality are foreseen.

C. ATMOSPHERIC: On the farms there will be no significant changes in existing atmospheric conditions. However, at the site of the center for receiving, processing, packaging and storing the fruits and vegetables there will be some negative effects.

1. Air additives and air pollution. Due to the concentration of truck movements at this center, exhaust pollution will be a factor. The entrances to and parking areas serving the center will be paved, thereby keeping dust pollution at a low level. Frequent showers, especially in the better growing and marketing months, should provide a fair measure of dilution and wash-out for both exhaust fumes and dust.

2. Noise pollution. Again, at the center more trucks will add to the existing city noises. Otherwise there should be little measurable increase from present levels.

D. NATURAL RESOURCES:

1. Diversion or altered use of water. The only altered use of water will be in those places where irrigation can be used. Properly controlled so that erosion does not start, it should be an overall plus factor.

2. Irreversible, inefficient commitments. No such commitments of natural resources are foreseen for the Project.

E. CULTURAL

1. Altering physical symbols. Since the Project contemplates producing crops on small farmers' lands that are presently cultivated, there will be no disturbance of cemeteries, shrines, churches or other cultural sites.

2. Dilution of cultural tradition. The Paraguayan rural culture is strongly oriented on extended family lines, thus there should be no dilution of this tradition but quite likely a tendency to strengthen it by limiting out-migration as noted above.

3. Other factors - Changes in family structure. Survey data from the Project area indicates that of the 600 poor Project farms there are probably 65 that are headed by women. This is to say that the father has frequently gone elsewhere and has left the working of the farm and raising of the children to the woman. If, as predicted, the Project reduces out-migration, major benefits will accrue to the families by having more fathers working on the farm with the families.

F. SOCIOECONOMIC:

1. Changes in economic/employment patterns. One of the primary benefits of the Project is that there will be an increase in disposable farm income. On the Project farms no changes in types of employment are anticipated but with substantial labor-intensive farm activity it is expected that on-farm employment will rise, thus minimizing out-migration. At the center for receiving, handling, processing, storing and marketing the farm products several new jobs will be created, some of which may be new in character to the Project area.

2. Changes in population. As noted in A.l.a. above, the population of the Project area is expected to stabilize as increased farm income slows down the present considerable out-migration. This process should tend to stabilize social aspects of the farm families.

3. Changes in cultural patterns. Change in cultural patterns which have developed in recent years with the out-migration of young people and fathers seeking greater opportunity in the more populous areas should be arrested to quite a degree with the result of stabilizing population shifts and fortifying the traditional extended family system.

G. HEALTH:

1. Changing a natural environment. No significant impacts are expected.

2. Eliminating an ecosystem element. No natural ecosystem elements will be disturbed or eliminated because Project farming will be on existing cultivated lands.

3. Other factors - Changing an existing man-made environment. Malaria appears to be the only water related disease in Paraguay which can be connected with certain results of Project activities. Improved farm practices should tend to eliminate considerable of the pooling of water which always serves as mosquito breeding areas and contributes to the incidence of the disease. Additionally, improved farm income should lead to some improvement through having a bit more money available to buy treatment for diseases on a family by family basis. Other factors which may follow from increased farm income could be improved water supplies and sanitary facilities, again on a family by family basis.

H. GENERAL:

1. International impacts. The Project contemplates developing markets for their properly prepared and packaged fruits and vegetables in the neighboring areas of both Argentina and Brazil. It is foreseen that small farmers near the borders in these neighboring countries may, through their own cooperatives, become interested in and seek to copy the improved intensified farming practices which this Project will be developing in Paraguay.

2. Controversial impacts. No impacts of a controversial nature are foreseen.

3. Larger program impacts. This is a pilot project. It anticipates a future loan for a much larger project based on the better findings and indicated farm practices coming from the practices developed in this pilot work. Most of the impacts discussed herein are shown to be favorable. It is foreseen that a larger project would have most of the same positive impacts.

4. Other factors - Endangered species. All available knowledge and data indicate there are no known endangered species of either flora or fauna presently native to the Project area. It is significant that the government of Paraguay has recently banned all big-game hunting in the country.

I. OTHER POSSIBLE IMPACTS. None are foreseen.

NOTE: Statistical data, i.e., farm size, distribution, etc., noted herein were taken from the Small Farm Sub-Sector Assessment & Constraints Analysis, published by USAID/Paraguay, August 1976.

II. RECOMMENDATION FOR ENVIRONMENTAL ACTION

Extensive field observation plus interviews and data search indicate that little or no significant detrimental environmental impact will result from this Project, rather there should be measurable significant beneficial impacts forthcoming which could quite possibly reach into the border areas of neighboring Argentina and Brazil.

On this basis, it is recommended that no Environmental Assessment (EA) or Environmental Impact Statement (EIS) need be required. Further, it is recommended that a negative determination be made.

ANNEX VIII

611 (a) Compliance

CREDICOOP and the USAID completed plans and cost estimates for the two buildings to be constructed under this Project. These plans and cost estimates are included as Unattached Annex "C". Annex "C" also contains a letter from the USAID Engineer. Based on the Engineer's initial assessment and further review by the USAID it is felt that the plans comply with the statutory requirements of Section 611 (a). Annex "C" contains the following materials:

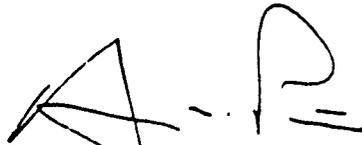
- 1) Plans for grounds and office building
(17 sheets of blueprints)
- 2) Plans for standard warehouse
(2 sheets of blueprints)
- 3) Letter from USAID Engineer Fowler
- 4) Detailed Cost Estimates for (1) and (2) above.

ANNEX IX

DIRECTOR'S 611(e) CERTIFICATION

The proposed Minifundia Crop Intensification Project will assist CREDICOOP to create, on a pilot basis involving 600 families, a system for the production and marketing of fruits and vegetables by small farmers. The Project will include training for technicians and farmers, employing classroom and mobile videotape modes with presentations in the Guarani language; research, credit, and technical assistance in production and marketing; and the construction and equipping of a processing, packing, and cold storage plant. Research and technical assistance services will be provided by the Ministries of Agriculture and of Industry, and by U.S. universities. CREDICOOP has administered previous AID-assisted activities, and is capable of carrying out this Project.

Taking into account the above, and the maintenance and utilization of Projects in Paraguay previously financed or assisted by the United States, I hereby certify that Paraguay has the financial and human resources to effectively maintain and utilize the Minifundia Crop Intensification Project.



Abe M. Peña
Director
USAID/Paraguay

STATUTORY CHECKLIST
COUNTRY CHECKLIST

A. GENERAL CRITERIA FOR COUNTRY

1. FAA Sec. 116. Can it be demonstrated that contemplated assistance will directly benefit the needy? If not, has the Department of State determined that this government has engaged in consistent pattern of gross violations of internationally recognized human rights? Yes - see IIA & B, III-B
No
2. FAA Sec. 481. Has it been determined that the government of recipient country has failed to take adequate steps to prevent narcotics drugs and other controlled substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in such country, or transported through such country, from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents, or from entering the U.S. unlawfully? No
3. FAA Sec. 620(b). If assistance is to a government, has the Secretary of State determined that it is not controlled by the international Communist movement? N/A
4. FAA Sec. 520(c). If assistance is to government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) debt is not denied or contested by such government? N/A
5. FAA Sec. 620(e) (1). If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities? N/A

- A
6. FAA Sec. 620(a), 620(f); App. Sec. 107, 114. Is recipient country a Communist country? Will assistance be provided to the Socialist Republic of Vietnam, Cambodia, Laos, Cuba, Uganda, Mozambique, or Angola? No
 7. FAA Sec. 620(i). Is recipient country in any way involved in (a) subversion of, or military aggression against, the United States or any country receiving U.S. assistance, or (b) the planning of such subversion or aggression? No
 8. FAA Sec. 620(i). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction, by mob action, of U.S. property? No
 9. FAA Sec. 620(l). If the country has failed to institute the investment guaranty program for the specific risks of expropriation, inconvertibility or confiscation, has the AID Administrator within the past year considered denying assistance to such government for this reason? N/A
 10. FAA Sec. 620(o); Fishermen's Protective Act, Sec. 5. If country has seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters, N/A
 - a. has any deduction required by Fishermen's Protective Act been made?
 - b. has complete denial of assistance been considered by AID Administrator?
 11. FAA Sec. 620(j); App. Sec. 503. (a) Is the government of the recipient country in default on interest or principal of any AID loan to the country? (b) Is country in default exceeding one year on interest or principal on U.S. loan under program for which App. Act appropriates funds, unless debt was earlier disputed, or appropriate steps taken to cure default? No
 12. FAA Sec. 620(s). "If contemplated assistance is development loan (including Alliance loan) or security supporting assistance, has the Administrator taken into account the percentage of the country's budget which is for military expenditures, the amount of foreign exchange spent on military equipment and the amount spent for the purchase of sophisticated weapons systems?" (An affirmative answer may refer to the record of the taking into account, e.g.: "Yes as reported in annual report on implementation of Sec. 620(s).") This report is prepared at the time of approval by the Administrator of the Operational Year Budget. N/A

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Upward changes in the Sec. 620(s) factors occurring in the course of the year, of sufficient significance to indicate that an affirmative answer might need review, should still be reported, but the statutory checklist will not normally be the preferred vehicle to do so.)

13. FAA Sec. 620(t). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption? No

14. FAA Sec. 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the AID Administrator in determining the current AID Operational Year Budget? Current

15. FAA Sec. 620A. Has the country granted sanctuary from prosecution to any individual or group which has committed an act of international terrorism? No

16. FAA Sec. 666. Does the country object, on basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. there to carry out economic development program under FAA? No

17. FAA Sec. 669, 670. Has the country, after August 3, 1977, delivered or received nuclear enrichment or reprocessing equipment, materials, or technology, without specified arrangements or safeguards? Has it detonated a nuclear device after August 3, 1977 although not a "nuclear-weapon State" under the nonproliferation treaty? No

18. FAA Sec. 991. Has the country denied its citizens the right or opportunity to emigrate? No

- B. FUNDING CRITERIA FOR COUNTRY
 1. Development Assistance Country Criteria
 - a. FAA Sec. 102(c), (d). Have criteria been established, and taken into account, to assess commitment and progress of country in effectively involving the poor in development, on such indexes as: (1) small-farm labor intensive agriculture, (2) reduced infant mortality, (3) population growth, (4) equality of income distribution, and (5) unemployment Yes

81

b. FAA Sec. 104(d)(1). If appropriate, is this development (including Sahel) activity designed to build motivation for smaller families in programs such as education in and out of school, nutrition, disease control, maternal and child health services, agricultural production, rural development, and assistance to urban poor?

Only insofar as improved incomes constitute such motivation.

c. FAA Sec. 201(b)(5), (7) & (8); Sec. 208; 211(a)(4), (7). Describe extent to which country is:

- (1) Making appropriate efforts to increase food production and improve means for food storage and distribution.
- (2) Creating a favorable climate for foreign and domestic private enterprise and investment.
- (3) Increasing the public's role in the developmental process.
- (4) (a) Allocating available budgetary resources to development.
(b) Diverting such resources for unnecessary military expenditure and intervention in affairs of other free and independent nations.
- (5) Making economic, social, and political reforms such as tax collection improvements and changes in land tenure arrangements, and making progress toward respect for the rule of law, freedom of expression and of the press, and recognizing the importance of individual freedom, initiative, and private enterprise.
- (6) Otherwise responding to the vital economic, political, and social concerns of its people, and demonstrating a clear determination to take effective self-help measures.

- (1) IBRD, IDB, and AID projects have financed food production and storage and the construction of rural roads and markets.
- (2) Paraguay's laws encourage private investment.
- (3) Paraguay is directing more resources to projects involving institutions dealing with the poor, e.g. cooperatives for agricultural credit and marketing or urban credit unions.
- (4) (a) Paraguay is increasing its counterpart share in new projects and assuming the operating costs of new institutions.
(b) Paraguay's military budget is declining relative to the entire budget. Paraguay does not intervene in the affairs of other nations.
- (5) A cadastral project is leading to improved property tax collection and a system of legalized land registry and titling, which so far have given land to 120,000 farm families.
- (6) Our CDSS describes the new awareness within the GOP of the need to develop income-distribution systems, especially in view of the prospects for electric power and income to be generated by Itaipú.

d. FAA Sec. 201(b), 211(a). Is the country among the 20 countries in which development assistance loans may be made in this fiscal year, or among the 40 in which development assistance grants (other than for self-help projects) may be made?

d. Yes

e. FAA Sec. 115. Will country be furnished, in same fiscal year, either security supporting assistance, or Middle East peace funds? If so, has Congress specifically authorized such use of funds, or is assistance for population programs, humanitarian aid through international organizations, or regional programs?

e. No

PROJECT CHECKLIST

A. GENERAL CRITERIA FOR PROJECT.

1. App. Unnumbered; FAA Sec. 653(b); Sec. 671
 1. (a) Describe how Committees on Appropriations of Senate and House have been or will be notified concerning the project; 1. (a) Congressional Notification.
 - (b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that figure) (b) Yes

2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$100,000, will there be (a) engineering, financial, and other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?
 2. (a) Yes
 - (b) Yes

3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance? N/A

4. FAA Sec. 611(b); App. Sec. 101. If for water or water-related land resource construction, has project met the standards and criteria as per *the Principles and Standards for Planning Water and Related Land Resources* dated October 25, 1973? N/A

5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified the country's capability effectively to maintain and utilize the project? Yes

6. FAA Sec. 209, 619. Is project susceptible of execution as part of regional or multi-lateral project? If so why is project not so executed? Information and conclusion whether assistance will encourage regional development programs. If assistance is for newly independent country, is it furnished through multi-lateral organizations or plans to the maximum extent appropriate? No

A

7. FAA Sec. 601(a); (and Sec. 201(f) for development loans). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.

The Project will specifically encourage (a) through (e).

8. FAA Sec. 601(b). Information and conclusion on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).

A U.S. university or consortium will provide \$350,000 in technical services.

9. FAA Sec. 612(b); Sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized to meet the cost of contractual and other services.

CREDICOOP's counterpart will exceed \$1 million.

The U.S. owns no Paraguayan currency.

10. FAA Sec. 612(d). Does the U.S. own excess foreign currency and, if so, what arrangements have been made for its release?

No

11. ISA 14. Are any FAA funds for FY 78 being used in this Project to construct, operate, maintain, or supply fuel for, any nuclear powerplant under an agreement for cooperation between the United States and any other country?

No

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

a. FAA Sec. 102(c); Sec. 111; Sec. 291a. Extent to which activity will (1) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production, spreading investment out from cities to small towns and rural areas; and (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions?

1.a. The Project will draw small farmers into the marketplace to sell cash crops while encouraging the growth of the cooperative movement.

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b. FAA Sec. 103, 103A, 104, 105, 106, 107. Is assistance being made available: [include only applicable paragraph -- e.g., a, b, etc. -- which corresponds to source of funds used. If more than one fund source is used for project, include relevant paragraph for each fund source.]

- (1) [103] for agriculture, rural development or nutrition; if so, extent to which activity is specifically designed to increase productivity and income of rural poor; [103A] if for agricultural research, is full account taken of needs of small farmers;
- (2) [104] for population planning or health; if so, extent to which activity extends low-cost, integrated delivery systems to provide health and family planning services, especially to rural areas and poor;
- (3) [105] for education, public administration, or human resources development; if so, extent to which activity strengthens nonformal education, makes formal education more relevant, especially for rural families and urban poor, or strengthens management capability of institutions enabling the poor to participate in development;
- (4) [106] for technical assistance, energy, research, reconstruction, and selected development problems; if so, extent activity is:
 - (a) technical cooperation and development, especially with U.S. private and voluntary, or regional and international development, organizations;
 - (b) to help alleviate energy problem;
 - (c) research into, and evaluation of, economic development processes and techniques;
 - (d) reconstruction after natural or manmade disaster;
 - (e) for special development problem, and to enable proper utilization of earlier U.S. infrastructure, etc., assistance;
 - (f) for programs of urban development, especially small labor-intensive enterprises, marketing systems, and financial or other institutions to help urban poor participate in economic and social development.

b. Section 103.

(1) This Project is totally designed to increase the productivity and income of the rural poor, with research (among other things) directed specifically at the needs of small farmers if they are to produce and market fruits and vegetables.

81b

(5) [107] by grants for coordinated private effort to develop and disseminate intermediate technologies appropriate for developing countries.

c. FAA Sec. 110(a); Sec. 208(e). Is the recipient country willing to contribute funds to the project, and in what manner has or will it provide assurances that it will provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or has the latter cost-sharing requirement been waived for a "relatively least-developed" country)?

d. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing, *or is the recipient country "relatively least developed"?*

e. FAA Sec. 207; Sec. 113. Extent to which assistance reflects appropriate emphasis on; (1) encouraging development of democratic, economic, political, and social institutions; (2) self-help in meeting the country's food needs; (3) improving availability of trained worker-power in the country; (4) programs designed to meet the country's health needs; (5) other important areas of economic, political, and social development, including industry; free labor unions, cooperatives, and Voluntary Agencies; transportation and communication; planning and public administration; urban development, and modernization of existing laws; or (6) integrating women into the recipient country's national economy.

f. FAA Sec. 231(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civic education and training in skills required for effective participation in governmental and political processes essential to self-government.

c. CREDICOOP's counterpart exceeds 25% of the total Project cost. See Section IV.

d. No

e. (1) New cooperatives will be formed, and the cooperative "central" will be strengthened.
(2) Local demand for fruits and vegetables will be met by new local production.
(3) Extension agents and farmers will be trained.
(4) ---
(5) ---
(6) Benefits to be realized by women are described in Section III-B.

f. The project meets a specific need employing the productive potential already present in Paraguay. Rural incomes will increase food production will rise; and the technical staffs of CREDICOOP and the Ministries of Agriculture and of Industry will be able to replicate and expand the Project after the termination of the Grant.

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g. FAA Sec. 201(b)(2)-(4) and -(8); Sec. 201(e); Sec. 211(a)(1)-(3) and -(8). Does the activity give reasonable promise of contributing to the development: of economic resources, or to the increase of productive capacities and self-sustaining economic growth; or of educational or other institutions directed toward social progress? Is it related to and consistent with other development activities, and will it contribute to realizable, long-range objectives? And does project paper provide information and conclusion on an activity's economic and technical soundness?

h. FAA Sec. 201(b)(6); Sec. 211(a)(5), (6). Information and conclusion on possible effects of the assistance on U.S. economy, with special reference to areas of substantial labor surplus, and extent to which U.S. commodities and assistance are furnished in a manner consistent with improving or safeguarding the U.S. balance-of-payments position.

g. Paraguay's economic resources and productive capacity will be increased (Sections III-A and III-C), and the cooperative movement will be strengthened. The Project is consistent with AID's focus on the rural poor. The Project's economic and technical soundness is described in Section III.

h. An estimated \$625,000 in goods and services will be procured from the U.S.

ASSISTANT
ADMINISTRATOR

PROJECT AUTHORIZATION AND REQUEST FOR ALLOTMENT OF FUNDS

Name of Country: Paraguay
Name of Project: Minifundia Crop Intensification
Number of Project: 526-0118

Pursuant to Part I, Chapter 1, Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize a Grant to the Central Cooperativa Nacional de Ahorro y Credito in Paraguay ("CREDICOOP") of not to exceed Four Hundred Forty-Five Thousand United States Dollars (\$445,000) (the "Authorized Amount") to help in financing certain foreign exchange and local currency costs of goods and services required for the project described in the immediately following sentence. The project consists of assisting CREDICOOP, in cooperation with the Ministry of Agriculture's extension service ("SEAG") and the National Institute of Agronomy ("IAN"), to provide small land holders with the technology, extension services, production credit, transportation services, and processing and marketing facilities necessary to diversify and intensify their production of fruits and vegetables (the "Project").

I approve the total level of AID appropriated funding planned for the Project of not to exceed One Million Nine Hundred Thousand United States Dollars (\$1,900,000), Grant, including the Authorized Amount, during the period FY 1979 through FY 1983. I approve further increments during that period of Grant funding up to \$1,455,000, subject to the availability of funds in accordance with AID allotment procedures.

I hereby authorize the initiation of negotiation and execution of the Project Agreement by the officer to whom such authority has been delegated in accordance with AID regulations and Delegations of Authority, subject to the following essential terms, covenants and major conditions, together with such other terms and conditions as AID may deem appropriate:

RECORD COPY

A. Source and Origin of Goods and Services

Except for ocean shipping, goods and services financed by AID under the Project shall have their source and origin in Paraguay or in the United States, except as AID may otherwise agree in writing. Ocean shipping shall be procured in the United States, except as AID may otherwise agree in writing.

B. Conditions Precedent to Initial Disbursement

Prior to any disbursement, or to the issuance of any commitment documents under the Project Agreement, CREDICOOP shall, except as AID may otherwise agree in writing, furnish to AID, in form and substance satisfactory to AID:

(i) Evidence that Project subagreements have been signed with the directors of SEAG and IAN and that such subagreements (a) clarify the operational and fiscal responsibilities of all the entities named therein, and (b) demonstrate adequate support and commitment on behalf of the Government of Paraguay to proceed with the implementation of the Project; and

(ii) A time-phased implementation plan for the Project.

C. Condition Precedent to Disbursement for Technical Assistance

Prior to any disbursement, or to the issuance of any commitment documents under the Project Agreement, to finance Title XII and/or other long-term technical assistance activities, CREDICOOP shall, except as AID may otherwise agree in writing, furnish to AID, in form and substance satisfactory to AID, a signed contract for each such activity.

D. Conditions Precedent to Disbursement for Specific Project Activities

Prior to any disbursement, or to the issuance of any commitment documents under the Project Agreement, to finance any of the following specific activities, CREDICOOP shall, except as AID may otherwise agree in writing, furnish to AID, in form and substance satisfactory to AID:

(i) For building construction: a detailed, time-phased plan for completing the building, together with copies of all bid proceedings and contracts related to such construction;

(ii) For any procurement: a written description of the procurement procedures to be followed by CREDICOOP;

(iii) For any training: a time-phased plan for all in-country training;

(iv) For all farmer subloans: an accounting control plan;

(v) For new personnel to be hired for the Project: a time-phased staffing plan for new positions, indicating number, job title, salaries and anticipated duties, such plan to designate one person (other than the General Manager) as the Project Manager; and

(vi) For trucks: a detailed analysis of the transportation requirements of the Project and alternative approaches to meet these requirements, including truck rentals (prior to procurement, if any, of such trucks).

E. Covenants

CREDICOOP shall covenant and agree, except as AID may otherwise agree in writing, that it shall:

(i) Authorize or cause to be authorized new staff positions necessary to carry out the Project as planned with a salary structure adequate to attract and maintain qualified personnel in such positions;

(ii) Be solely responsible for all construction cost overruns with respect to any building construction undertaken as part of the Project; and

(iii) Submit to AID annual work plans (including credit requirements based on crop projections) for each year subsequent to the first year of the Project prior to AID approval of incremental funding for each such year.

Edward W. C...
Assistant Administrator
Bureau for Latin America
and the Caribbean

Aug 15 1979
Date

Clearances:

GC/LAC, J. Kessler	<u>JMK</u>	date	<u>8/13/75</u>
LAC/SA, R. Burke	<u>RB</u>	date	<u>2/12/75</u>
LAC/DR, T. Brown		date	
LAC/DR, M. Brown		date	

GC/LAC:GMV/H¹br:ec:8/9/79:x29182

 CREDICOOP L.T.A.

CENTRAL COOPERATIVA NACIONAL

N° 310/79.

19 de mayo de 1.979.

Señor
Abe M. Peña, Director
Misión Económica de los EE.UU.
Avda. Pte. Kubitscheck N° 390
Ciudad

De nuestra consideración:

Tenemos el agrado de dirigirnos a Ud. con el objeto de confirmar, en nombre de la Central Cooperativa Nacional Ltda. "CREDICOOP", los contactos mantenidos entre funcionarios de USAID/Paraguay y de CREDICOOP como parte de un esfuerzo conjunto tendiente a diseñar un proyecto para promover la producción elaboración y comercialización de frutas y hortalizas seleccionadas en la zona minifundiaria del país.

Como siguiente paso, considerando que los detalles del proyecto ya han llegado a la etapa final de definición, venimos por la presente a solicitar oficialmente en nombre de CREDICOOP una donación por la suma de US\$1.500.000.- (un millón quinientos mil dólares), cantidad que será destinada totalmente en la ejecución del proyecto.

El proyecto será ejecutado a través de las cooperativas afiliadas. Las actividades a realizarse serán ejecutadas bajo la administración y responsabilidad de CREDICOOP. Del total de la donación de US\$1.500.000.- serán destinados: para Asistencia Técnica \$350.000.- para financiar cinco años/técnicos a ser proveídos por la Universidad contratada bajo el Título XII; para Préstamos a Agricultores \$464.000.- para establecer un fondo rotativo para un programa de préstamo para pequeños agricultores participantes del proyecto; para Entrenamiento \$55.000.- para programas de entrenamiento a corto plazo en el exterior y locales, adquisición de materiales de impresión y para financiar un equipo de videocassette; para la Compra de un Camión con espacio refrigerado para carga se utilizará \$100.000.-; para Instalación y Equipo de Almacenamiento \$320.000.- para la construcción del depósito y la compra e instalación de 3 (tres) unidades de cámaras frigoríficas de almacenamiento; para Mejoramiento y Multiplicación de Semillas \$71.000.- por parte del Instituto Agronómico Nacional (I.A.N.); para Construcción de Espacio para Oficinas \$102.000.- y \$18.000.- para el pago de los planos, supervisión y control de obra; y para Evaluación \$20.000.- para financiar dos evaluaciones.



CREDICOOP LIDA.

CENTRAL COOPERATIVA NACIONAL

- 132 -

Av. Eusebio Ayala y Tta. Alvarenga
Asunción, Paraguay - C. C. 1953
Teléf. 20 009 - Telex: 369 PY CREDICOOP
Dirección Cablegráfica "CREDICOOP"
Dto. P. E. 6094 y 25960 - Cert. Insc. No. 59

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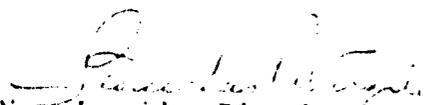
Con relación a los fondos de contrapartida requeridos para la donación CREDICOOP ha tomado las providencias necesarias para disponer de US\$1.930.000.- que serán utilizados en los siguientes rubros: Préstamo para Agricultores \$908.000.-; Construcción para Espacio de Oficinas \$51.000.-; para Viáticos \$36.000.-; para el Equipo de videocassette \$5.000.-; para Compra de Tierra para la ubicación del depósito y la oficina \$150.000.-; y para los costos de operaciones y mantenimiento \$669.000.- y para nuevo personal \$111.000.-

Queremos testimoniar nuestro reconocimiento al Señor Director por la valiosa y permanente ayuda a nuestra Central y comprometernos desde ya a poner lo mejor de nosotros para que el proyecto culmine exitosamente como ejemplo de cooperación entre los dos países en bien del pequeño agricultor.

Cordialmente,


Lic. Juan Peralta Paredes
Gerente General

JPP/gsa.


Sen. Nac. Leonidas Páez de Virgili
Presidente
Consejo de Administración



Non-official translation, letter from CREDICOOP to USAID

Asunción, May 19, 1979

Mr. Abe M. Peña, Director
U.S. AID Mission to Paraguay

Dear Sir:

We are very pleased to confirm, on behalf of Central Cooperativa Nacional Limitada "CREDICOOP", the contacts held by USAID/Paraguay and CREDICOOP's officials as part of a joint effort to design a project to promote the production, processing, and marketing of selected fruits and vegetables in the central or minifundia area of the country.

As a next step, considering that the details regarding the project are in the final stages of definition, we hereby officially request from the U.S. Government, on behalf of CREDICOOP, a \$ 1.5 million grant to be utilized entirely in the implementation of the project.

The project will be implemented through member cooperatives. Project activities will be carried out under the administration and responsibility of CREDICOOP. Of the total \$ 1.5 million grant, \$ 350,000 will be earmarked for Technical Assistance to finance 5 technician/years to be provided by a U.S. university under a Title XII program; \$ 464,000 to establish a revolving fund for a loan program for small farmers participating in the project; \$ 55,000 for short term training in-country and abroad, purchase of printing materials and video-cassette equipments; \$ 100,000 for the purchase of a refrigerated truck; \$ 320,000 for building facilities and purchase of equipments for three units of cold storage; \$ 71,000 for seed improvement and multiplication with the National Agronomic Institute (IAN); \$ 102,000 for office space building; \$ 18,000 for building design, supervision, and control; and \$ 20,000 to finance the cost of two evaluations.

Regarding the counterpart funds required for the grant, CREDICOOP has taken the necessary steps to secure \$ 1,930,000 which will be utilized as follows: Loan to farmers \$ 908,000; building of office space \$ 51,000; per diem \$ 36,000; video cassette equipment \$ 5,000; land purchase for warehouse and office site \$ 150,000; and \$ 669,000 for operating and maintenance costs; and \$111,000 for new personnel.

Mr. Director, we would like to express our appreciation for the valuable and permanent assistance to this Central and will commit ourselves to do our best for the success of the project, which is an example of cooperation between two countries on behalf of small farmers.

Cordially,

Lic. Juan Peralta Paredes
General Manager

Sen. Leonidas Paez de Virgili
President

..... ANNEX XIII
COMPLETE DETAILED BUDGET

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TABLE I

SOURCE	SUMMARY COST ESTIMATE AND FINANCIAL PLAN				TOTAL
	(US\$ 000)		CREDICOOP	OTHER DONORS	
	AID GRANT				
	Fx	L/C	L/C	Fx	
USE:					
1. Technical Assistance	450			10	460
2. Loans to Farmers		691	1014		1705
3. <u>Storage Facilities & Equipment</u>	<u>195</u>	<u>125</u>			320
- Cold Storage units	195				
- Construction costs		125			
4. Office building		105	51		156
5. Construction supervision		18			18
6. Refrigerated truck	100				100
7. Seed Improvement & Multiplication		117			117
8. <u>Training</u>	<u>30</u>	<u>35</u>	<u>5</u>		70
- Videotape system equipment	30		5		
- Seminars, field visits, etc.		35			
9. New Personnel			185		185
10. Per diem & transportation			60		60
11. Land			150		150
12. Operating & maintenance cost			1115		1115
13. Evaluation		36			36
TOTAL	775	1127*	2580	10	4492

*(AID grant total rounded to \$1.9 million)

TABLE II - PROJECTION OF EXPENDITURES - AID GRANT
(US\$000)

	<u>PY 1979 1/</u>		<u>PY 1980</u>		<u>PY 1981</u>		<u>PY 1982</u>		<u>PY 1983</u>		<u>TOTAL</u>	
	<u>Fx</u>	<u>L/C</u>	<u>Fx</u>	<u>L/C</u>	<u>Fx</u>	<u>L/C</u>	<u>Fx</u>	<u>L/C</u>	<u>Fx</u>	<u>L/C</u>	<u>Fx</u>	<u>L/C</u>
1. Technical Assistance	118		182		150						450	
2. Loans to Farmers		138		0		198		355		0		691
3. Storage Facilities & Equipment												
- Cold storage units			195								195	
- Construction costs		60		65								125
4. Office Building		61		44								105
5. Construction supervision		8		10								18
6. Refrigerated truck			100								100	
7. Seed Improvement & Multiplication		25		23		23		23		23		117
8. Training												
- Videotape system equipment	30										30	
- Seminars, field visits, etc.		5		5		5		11		9		35
9. Evaluation				8		8		8		12		36
	<u>148</u>	<u>297</u>	<u>471</u>	<u>155</u>	<u>150</u>	<u>234</u>	<u>397</u>	<u>44</u>	<u>775</u>	<u>1127</u>		

PROJECTION OF EXPENDITURES - CREDICOOP CONTRIBUTION

1. Loans to Farmers	191		0		100		376		347		1014
2. Office Building	25		26								51
3. Training											
- Seminars, field visits, etc.	5										5
4. New Personnel	37		37		37		37		37		185
5. Per diem & transportation	12		12		12		12		12		60
6. Land	150										150
7. Operating & maintenance costs	223		223		223		223		223		1115
	<u>643</u>		<u>298</u>		<u>372</u>		<u>648</u>		<u>619</u>		<u>2580</u>

1/ PY (Project Year) is July 1, June 30.

TABLE III

PROJECT EXPENDITURES - YEAR I

	AID		CREDICOOP CONTRIBUTION	OTHER DONORS		TOTAL		TOTAL PROJECT EXPENDITURES	
	Fx	L/C		Fx	Fx	L/C			
1. Technical Assistance:									
1 Horticulture Specialist	35					35		35	
12 Agric. Machine Specialist				10				10	
16 TM - Various Short term marketing researchers	83					83		83	
2. Loans to Farmers		138	191				329	329	
3. Storage Facilities & Equipment									
- Construction Costs		60					60	60	
4. Office Building		61	25				86	86	
5. Construction Supervision		8					8	8	
6. Seed Improvement & Multi- plication		25					25	25	
7. Training:									
- Videotape system equipment	30		5			30	5	35	
- Seminars, field visits, etc.		5					5	5	
8. New Personnel			37				37	37	
9. Per diem & Transportation			12				12	12	
10. Land			150				150	150	
11. Operating & Maintenance Costs			223				223	223	
	148	297	643	10		148	940	1,098	

References

- (1) See Annex "A "
- (2) Source: Table 3 - Annex 5, PP
- (3) Storage Facilities: 1,000 sq. m. at US\$ 125 sq. m. = US\$ 125,000
 3 Cold storage units of US\$ 65,000 each = 195,000
- (4) Total Construction: 1,300 sq. m. at \$165 sq. m. = \$215,000. From this total AID will finance \$102,000 and CREDICOOP \$113,000 from which \$62,000 will be financed out of the project.

TABLE IV
PROJECT EXPENDITURES - YEAR 2

	<u>AID</u>	<u>GRANT</u>	<u>CREDICOOP</u>	<u>OTHER</u>	<u>TOTAL</u>		<u>TOTAL PROJECT</u>
	<u>Fx</u>	<u>L/C</u>	<u>CONTRIBUTION</u>	<u>DONORS</u>	<u>Fx</u>	<u>L/C</u>	<u>EXPENDITURES</u>
			<u>L/C</u>	<u>Fx</u>			
1. Technical Assistance:							
1 Horticulture Specialist	35						
1 Processing & Marketing Specialist	70				35		35
Short-term Consultants	77				70		70
					77		77
2. Loans to Farmers							
3. Storage Facilities & Equipment					312		312
Construction Costs		65				65	65
Cold Storage Units	195				195		195
4. Office Building		44				70	70
5. Construction Supervision		10	26			10	10
6. Refrigerated Truck	100				100		100
One 25 ton truck with a cold storage unit							
7. Seed Improvement & Multiplication		23				23	23
8. Training:						5	5
- Videotape system equipment		5					
- Seminars, field visits, etc.							
9. New Personnel							
10. Per diem & Transportation			37			37	37
11. Land			12			12	12
12. Operating & Maintenance Costs							
13. Evaluation		8	223			223	223
					8		8
	477	155	298		477	453	930

TABLE V

PROJECT EXPENDITURES - YEAR 3

	<u>AID GRANT</u>		<u>CREDICOOP</u>	<u>OTHER</u>	<u>TOTAL</u>		<u>TOTAL PROJECT</u>
	<u>Fx</u>	<u>L/C</u>	<u>CONTRIBUTION</u>	<u>DONORS</u>	<u>Fx</u>	<u>L/C</u>	<u>EXPENDITURES</u>
			<u>L/C</u>	<u>Fx</u>			
1. Technical Assistance:							
1 Horticulture Specialist	70						70
Short term Consultants	80				70		80
2. Loans to Farmers		198			80		298
3. Seed Improvement & Multiplication		23	100			23	23
4. Training: - Seminars, field visits, etc.		5				5	5
5. New Personnel			37			37	37
6. Per diem & Transportation			12			12	12
7. Land							
8. Operating & Maintenance Costs			223			223	223
9. Evaluation		8				8	8
	<u>150</u>	<u>234</u>	<u>372</u>		<u>150</u>	<u>598</u>	<u>756</u>

TABLE VI

PROJECT EXPENDITURES - YEAR 4

	<u>AID</u>		<u>CREDICOOP</u>	<u>TOTAL</u>		<u>TOTAL</u> <u>PROJECT</u> <u>EXPENDITURES</u>
	<u>Fx</u>	<u>GRANT</u> <u>L/C</u>	<u>CONTRIBUTION</u> <u>L/C</u>	<u>Fx</u>	<u>L/C</u>	
1. Loans to Farmers		355	376	731		731
2. Seed improvement & multiplication		23		23		23
3. Training: Seminars, field visits, etc.		11		11		11
4. New Personnel			37	37		37
5. Per diem & transportation			12	12		12
6. Operating & maintenance costs			223	223		223
7. Evaluation		8		8		8
		<u>397</u>	<u>648</u>	<u>1045</u>		<u>1045</u>

References

(1) See Annex "G"

TABLE VII

PROJECT EXPENDITURES - YEAR 5

	<u>AID</u>		<u>GRANT</u>	<u>CREDICOOP</u>	<u>TOTAL</u>		<u>TOTAL PROJECT</u>
	<u>Fx</u>	<u>L/C</u>		<u>CONTRIBUTION</u>	<u>Fx</u>	<u>L/C</u>	<u>EXPENDITURES</u>
				<u>L/C</u>			
1. Loans to Farmers				347		347	347
2. Seed Improvement & Multiplication			23			23	23
3. Training: Seminars, field visits, etc.			9			9	9
4. New Personnel				37		37	37
5. Per diem & transportation				12		12	12
6. Operating & Maintenance Costs				223		223	223
7. Evaluation			12			12	12
			44	619		663	663

TECHNICAL ASSISTANCE TO BE PROVIDED BY
UNIVERSITY CONTRACTED UNDER TITLE XII

	<u>TOTAL</u>	<u>YEAR 1</u>	<u>YEAR 2</u>	<u>YEAR 3</u>
1. Horticulture Specialist 2 years at \$70,000 p.a.	140,000	35	35	70
2. 16 TM-Various Short-term specialists in crop production activities	100,000	100		
3. Processing & Marketing Specialist 1 year	70,000		70	
4. Specialists in activities related to the Project 2 years at \$70,000 (To be contracted on a short-term basis)	140,000		60	80
	<u>\$450,000</u> *****	<u>135</u> ****	<u>165</u> *****	<u>150</u> *****

SEED IMPROVEMENT AND MULTIPLICATION BUDGET - YEAR 1

I. BANANA

For 50 Has. at 1,300 plants per Ha. at a
distance of 4 x 2 m. - Total requirement: 65,000 plants.

PLACES WHERE AVAILABLE

CAACUPE - IAN
SAN LORENZO - LUIS PEÑA
LA PASTORA - H. CRTEGA
OTHERS

INPUTS REQUIRED BY IAN

1) 5 Laborers at \$ 3.46 p.d.	
300 days x 5 x 3.46 = Total year	\$ 5,190
2) 500 Kgs. fertilizer of \$ 3.35	1,960
3) Introduction of new lines of plants from Central America	2,900
4) Unit price per plant: \$.23	
65,000 x \$.23	<u>14,950</u>
TOTAL	\$25,000 =====

BUDGET - YEAR 2 - 5

II. STRAWBERRIES

For 25 Has. at 80,000 plants per Ha.

Total requirement: 2,000,000 plants

INPUTS REQUIRED BY IAN

1) Materials for propagation to be imported from Brazil: 200,000 Stolons Variety "Monte Alegre", Camanducaia, Hybrides "IAC",	
Total Costs	\$ 2,000
2) Construction of shelter to cover the tree nursery during summertime 1,000 sq. m.	2,300
3) 10 Laborers	7,000
4) Fertilizer, Insecticides, Fungicides	<u>400</u>
Total	\$ 11,700 =====

REMARKS

Purchase of Stolons can be made from Areguá zone, provided that they are the appropriate varieties.

III. PINEAPPLE (Cayena Lisa or Abacaxi)

For 50 Has. at 35,000 plants per Ha.

Total requirement: 1,750,000 plants.

PLACES WHERE AVAILABLE

CAACUPE	.	IAN
NUEVA ITALIA	-	ENCA
SAN LORENZO	-	L. PEÑA

Imports of materials for propagation from Brazil,
USA, & Mexico.

Arroyos y Esterios, San Bernardino (Variety Abacaxi).

INPUTS REQUIRED BY IAN

1) 5 Laborers	\$ 3,500
2) Fertilizer, Insecticide, Herbicide & Fungicide	400
3) 100 000 plants of \$.077	<u>7,700</u>
TOTAL	<u>\$ 11,600</u> <u>=====</u>

REMARKS

In case of shortage of Cayena Lisa variety, the
Abacaxi variety could be planted.

TRAINING & EDUCATION PROGRAM

The program of Training and Education will encompass seminars, short courses, demonstration methods, field visits to the production centers, distribution of pamphlets, posters, and other audio visual media on the different crops: Tomatoes, banana, pineapple, and strawberries. All subjects will be related to the steps of production and marketing.

BUDGET - YEAR 1-3

A. TOMATOES

- | | |
|--|--------|
| 1. 1 Country wide course, 3 days for about 30 participants of \$ 7.00 p.d. | \$ 630 |
| 2. 2 Region wide courses, 3 days for about 40 participants at \$ 7.00 p.d. | 830 |
| 3. 3 Local courses, 2 days for about 60 participants at \$ 2.31 p.d. | 140 |
| 4. Printing 500 pamphlets | 540 |

B. BANANA

- | | |
|--|------------|
| 1. 4 Region wide courses, 2 days for about 80 participants of \$ 7.00 p.d. | 1,120 |
| 2. 4 Local courses, 2 days for about 80 participants at \$ 2.31 p.d. | 370 |
| 3. Two field visits to IAN at \$ | 620 |
| 4. Printing 500 pamphlets | <u>540</u> |
| | \$ 4,790 |
| | ===== |

BUDGET - YEAR 4

A. TOMATOES

1. 1 Country wide course, 3 days for about 30 participants at \$ 7.00 p.d.	\$ 630
2. 4 Region wide courses, 2 days for about 80 participants at \$ 7.00 p.d.	1,120
3. 6 Local courses, 2 days for about 90 participants at \$ 2.31 p.d.	420
4. Printing 500 posters	470

B. BANANA

1. 6 Region wide courses, 2 days for about 98 participants at \$ 7.00 p.d.	1,360
2. 6 Local courses, 2 days for about 90 participants at \$ 2.31 p.d.	420
3. 1 Field visit to IAN	310
4. Printing 500 posters	470

C. PINEAPPLE

1. 2 Country wide courses, 3 days for about 50 participants at \$ 7.00	1,040
2. 4 Region wide courses, 2 days for about 80 participants at \$ 7.00	1,110
3. 4 Local courses, 2 days for about 80 participants at \$ 2.31 p.d.	370
4. Printing 500 Pamphlets	540
5. Printing 500 Posters	470

D. STRAWBERRIES

1. 4 Region wide courses, 2 days for about 80 participants at \$ 7.00 p.d.	\$ 1,360
2. 4 Local courses, 2 days for about 80 participants	370
3. Printing 500 Pamphlets	540
4. Printing 500 Posters	<u>470</u>
	\$ <u>11,470</u>

BUDGET - YEAR 5

A. TOMATOES

1. 1 Country wide course, 3 days for about 30 participants at \$ 7.00 p.d.	\$ 630
2. 4 Region wide course, 2 days for about 80 participants at \$ 7.00 p.d.	1,120
3. 6 Local courses, 2 days for about 90 participants at \$ 2.31 p.d.	470

B. BANANA

1. 6 Region wide courses, 2 days for about 120 participants at \$ 7.00 p.d.	1,670
2. 6 Local courses, 2 days for about 90 participants at \$ 2.31	420
3. 1 Field visit	310

C. PINEAPPLE

1. 1 Country wide course, 3 days for 30 participants at \$7.00	630
2. 4 Region wide courses, 2 days for 80 participants	1,110
3. 1 Field visit to IAN	310

D. STRAWBERRIES

1. 4 Region wide courses, 2 days for about 80 participants at \$7.00 p.d.	1,360
2. 4 Local courses, 2 days for about 80 participants	370
3. 1 Field visit	<u>310</u>

\$8,710

VIDEO SYSTEM BENEFITS

The rationale for using what may be considered a rather expensive educational tool (the proposed video system) for relatively few students is based on two factors.

The first is the expected reduction of the risk of failure for the small farmer who will be borrowing between \$1,000 and \$2,000 per hectare to plant crops which have obviously higher production and marketing risk than traditional crops.

Year	Cost of Production	Return at Risk Reduction Factor 5%
1st.	312,000	15,600
2nd.	982,000	49,100
3rd.	1,827,000	91,350
4th.	966,000	48,300
Total	4,087,000	204,350

The second factor used to evaluate return on the video system investment is potential improvement in production and a corresponding increase in the value of production.

Year	Value of Production Including 5% Benefit	Value of Production without Video	Benefit
1st.	\$ 308,000	292,000	16,000
2nd.	1,135,000	1,078,000	57,000
3rd.	2,893,000	2,748,000	145,000
4th.	4,191,000	3,981,000	210,000
Total	8,527,000	8,099,000	428,000

In other words the return on investment should not be measured in terms of hours of education provided per dollar spent or students per dollar spent but rather in terms of potential dollars return from the investment in the video system.

Over the four year period using the smallest improved return illustrated, five percent, the total return is more than \$632,000.

Nonetheless it is clear that the more the system is utilized for all types of educational programs the higher will be the total overall return on the investment.

For example utilization of the equipment for reproduction of some management training courses now presented in person is expected to free up time needed for use in producing the technical assistance tapes for the fruits and vegetables program.

In addition the equipment will be used in new educational programs on collection methods and loan interviewing where participants will be able to see themselves in action and be able to improve their performance based upon the feedback received from the video system

VIDEO SYSTEM BUDGET

	<u>AID</u>	<u>CREDESCOOP</u>	<u>Total</u>
1. Sony Betamax SLO 340 Portable Video Cassette Recorder	\$ 6,000	-	\$ 6,000
1. Sony Color Video Camera	\$ 6,000		\$ 6,000
6. Sony Betamax SLP 300 Video Cassette Players	\$ 7,500	\$ 1,500	
6. Sony FVM 8000 Monitors			
1. in CREDESCOOP		300	300
5. in Cooperative sites	\$ 1,500		1,500
1. Sony SLO 320 RM 430 Memory Access RM 300 Automatic Edit Control	\$ 3,000	-	\$ 3,000
1. Sony Black and White Video Camera avc 3450	-	750	750
1. Sony Black and White Portable Recorder AV 3400 E	-	\$ 1,400	\$ 1,400
	<u>\$24,000</u>	<u>\$ 3,950</u>	<u>\$27,950</u>
Cassettes			
200 color	5,000	-	5,000
50 Black and White	-	750	750
	<u>\$29,000</u>	<u>\$ 4,700</u>	<u>\$33,700</u>

CREDESCOOP participation 30%

NEW PERSONNEL

	<u>S A L A R Y</u>	
		\$
	<u>No.</u>	<u>Year</u>
1. One Marketing Specialist	385	4,620
2. One Production Specialist	385	4,620
3. One Administrative Assistant	230	2,760
4. Four Technical Assistants	1,540	<u>18,480</u>
TOTAL		\$ 28,480
Social Benefits: 30% on \$ 28,480		<u>8,520</u>
Total		\$ 37,000 =====

ANNEX F

PER DIEM & TRANSPORTATION COSTS

1. <u>PER DIEM</u>		
900 days at \$ 11.5 p.d.	=	\$ 10,350
2. <u>TRANSPORTATION</u>		
300 round trip at \$ 5.4	=	<u>1,650</u>
Total		\$ 12,000 =====

A. COLD STORAGE UNITS - STORAGE FACILITIES

The operating expenses and maintenance of the units would be as follows:

1. <u>Direct Labor</u>		
- 1 Refrigeration specialist \$385 p.m. x 12	\$	4,620
- 4 Laborers \$ 155 p.m. x 12 x 4		7,740
2. <u>Indirect Labor</u>		
- Administrative Personnel partially working for the Project. See separate list		9,315
3. <u>Social Benefits</u>		2,795
4. <u>Electricity</u>		
18,500 KW/h 12 mos. x \$.053		10,500
5. <u>Insurance</u>		
- 20 o/oo on Machines & Equipment \$ 195,000		3,900
- 20 o/oo on Building \$ 195,000		3,900
6. <u>Gas - "AZETHYL"</u>		4,000
7. <u>Depreciation</u>		
- 10% p.a. on Machines & Equipment \$ 195,000		19,500
- 5% on Building \$ 125,000		6,250
8. <u>Transformer</u>		2,000
9. <u>Interests</u>		
12% on \$ 320,000		38,400
10. <u>Contingency</u>		
10% on \$ 112,920		<u>11,290</u>
Total	\$	124,210

C. OPERATING EXPENSES FOR PLANT & OFFICES

1. <u>Electricity</u>		
- Total consumption of building	\$13,446	
- 70% not chargeable to the project	<u>9,416</u>	
- 30% chargeable to the project		\$ 4,030
2. <u>Insurance</u>		
200/00 on \$ 153,000		3,060
3. <u>Depreciation</u>		
5% p.a. on \$ 153,000		7,650
4. <u>Interests</u>		
12% p.a. on \$ 153,000		18,360
5. <u>Contingency</u>		
10% on \$ 33,120		<u>3,310</u>
	Total	<u>\$ 36,430</u>
		=====