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AIRGRAM

DEPARTMENT OF STATE

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TO - AID/W 141

DATE REC'D. 56p 35-W AM 11 45

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A.I.D. COMM BR

DATE SENT 8-3-72

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ATTENTION: AS/PR

FROM - USAID/Quito

SUBJECT - Revised PROP for the Agricultural Cooperatives Project

REFERENCE - 518-11-670-098 I

This revision extends the termination date of the project from FY'72, to December 31, 1975, for the following reasons:

1. The original PROP underestimated the time required to accomplish the project goals and targets.

2. The original PROP basically outlined the strategy for the initial phase of the project, that of organizing the required agricultural cooperatives infrastructure. This initial phase is substantially completed in the rice cooperatives portion of the project (FENACOOPARR) and well advanced in the highlands agricultural cooperatives (FECOPAM). However, the project has now entered the second and final phase of A.I.D. participation during which emphasis will be on: (a) the establishment of income producing services needed by the farmer members, such as marketing and farm supply and (b) the improvement of management competence in the base-level and secondary-level cooperative organizations.

OTHER AGENCY

3. In the original PROP it was anticipated that the project would include assistance to the National Federation of Agricultural Production and Marketing Cooperatives (FECOPAM). However, the former management was operating FECOPAM primarily for its own political advantage, and was not interested in AID or CLUSA assistance. Only with the intervention of FECOPAM by the

PAGE 1 OF PAGES 2

DRAFTED BY	OFFICE	PHONE NO.	DATE	APPROVED BY
RDD/COB: LOS/gha	RDD/COB	294	7/31/72	Peter M. Cody, Director

AID AND OTHER CLEARANCES

RDD/COB: FTemple

RDD: NCFine

O/DP: WNagy

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CLASSIFICATION

O/DP: JMagill

AID-5-40 (9-62) W/O (1-67)

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PRINTED 10-62

National Directorate of Cooperatives was CLUSA invited to assist in the reorganization of the federation and in the provision of technical assistance to the affiliated members of the federation. Therefore, the AID/CLUSA assistance to FECOPAM only began in July, 1971, about two years behind schedule.

4. Delays in the implementation of the A.I.D. financed Land Sale Guaranty Loan signed November, 1970, have resulted in a retardation of the financial progress of the rice cooperatives and in a reduction of the number of hectares acquired by the cooperatives. It is expected that the first sub-loans to cooperatives under the Land Sale Guaranty Loan will be made by December, 1972.

5. The presence of a CLUSA advisor in the Cooperative Bank and the implementation of the Second A.I.D. Loan to the Bank have significantly improved the prospects for orienting the Bank's lending more substantially towards agriculture and making its activities more complementary to those of the other portions of the A.I.D.-assisted agricultural cooperatives project. Continued technical assistance to the Bank through the agricultural cooperatives project will further develop the Bank's capacity to serve the small farmer members of the agricultural cooperatives and rural credit unions.

6. A recent evaluation of the Directed Agricultural Production Credit Program completed with USAID/E assistance, demonstrated the utility of developing that program not as in the past on an isolated basis, but in close coordination with the agricultural cooperatives, thereby most efficiently providing the small farmer with the major services that he requires in order to raise his income and increase his participation.

In summary, the proposed extension of the termination date of the project will permit the development of a financially self-sufficient and growing agricultural cooperative infrastructure through the establishment of needed services such as marketing and farm supply which provide increased income to the cooperative members and to the cooperative organizations. The extension of the project will also allow for the technical and administrative self-sufficiency of the agricultural cooperative infrastructure through increased formal and on-the-job training of cooperative managers, and finally the extension will provide the time and resources necessary to more fully integrate two vital pieces into the project, the Cooperative Bank, and the DAPC Program.

Early cable advice of approval will be appreciated in order to expedite the processing of corresponding Project Agreements.

BURNS

AID 1025-1 (7-71) (FACE SHEET)

NONCAPITAL PROJECT PAPER (PROP)

I. PROJECT IDENTIFICATION

1. PROJECT TITLE

INSTITUTIONAL DEVELOPMENT
Agricultural Cooperatives

APPENDIX ATTACHED: [X] YES [ ] NO

2. PROJECT NO. (M.O. 1025.2) 518-15-995-096.1

3. RECIPIENT (specify)
[X] COUNTRY ECUADOR
[ ] REGIONAL ____ [ ] INTERREGIONAL ____

4. LIFE OF PROJECT
BEGINS FY 1965
ENDS FY 1975

5. SUBMISSION
[ ] ORIGINAL
[X] REV. NO. 1 DATE 8/3/71
CONTR./PASA NO. CSD 2901

II. FUNDING ($000) AND MAN MONTHS (MM) REQUIREMENTS

A. FUNDING BY FISCAL YEAR	B. TOTAL $	C. PERSONNEL (1) $	C. PERSONNEL (2) MM	D. PARTICIPANTS (1) $	D. PARTICIPANTS (2) MM	E. COMMODITIES $	F. OTHER COSTS $	G. PASA/CONTR. (1) $	G. PASA/CONTR. (2) MM	H. LOCAL EXCHANGE CURRENCY RATE: $ US 24.75 (U.S. OWNED) (1) U.S. GRANT LOAN	(2) COOP COUNTRY (A) JOINT	(2) COOP COUNTRY (B) BUDGET
1. PRIOR THRU ACTUAL FY	1,301	626	438	0		60	615	988	402	398		520
2. OPRN FY 1973	370	139	97	8	8	18	205	210	97	175		72
3. BUDGET FY 1974	270	96	52	8	8	8	158	149	52	141		112
4. BUDGET +1 FY 1975	172	56	30	8	8	3	105	99	30	86		163
5. BUDGET +2 FY												
6. BUDGET +3 FY												
7. ALL SUBQ. FY												
8. GRAND TOTAL	2,113	917	617	24	24	89	1,083	1,446	581	800		867

9. OTHER DONOR CONTRIBUTIONS

(A) NAME OF DONOR	(B) KIND OF GOODS/SERVICES	(C) AMOUNT

III. ORIGINATING OFFICE CLEARANCE

1. DRAFTER Theodore Tenorio T. Tenorio	TITLE Cooperatives Advisor	DATE 30 Aug 1972
2. CLEARANCE OFFICER Peter M. Cody Peter M. Cody	TITLE Director	DATE 5 Aug 1972

IV. PROJECT AUTHORIZATION

1. CONDITIONS OF APPROVAL

If scheduled evaluation indicates a need for substantial project modification, a revised PROP will be required.

BEST AVAILABLE COPY

BEST AVAILABLE COPY

2. CLEARANCES

BUR/OFF.	SIGNATURE	DATE	BUR/OFF	SIGNATURE	DATE
LA/DR	M. D. Brown	1/8/73	LA/DR	F. Kimball	1/9/73
~~LA/DP~~	~~W. Wren (draft)~~	~~1/8/73~~	LA/GC	N. Williams (draft)	1/8/73
LA/DR	J. Halpin (draft)	1/5/73	LA/OPNS	~~P. Romano (draft)~~	~~1/5/73~~
~~LA/DP~~	~~J. O'Donnell (draft)~~	~~1/5/73~~	LA/EP	J. Guardiano (draft)	1/5/73
LA/MSRD	R. Greene (draft)	1/5/73			

3. APPROVAL AAs OR OFFICE DIRECTORS

SIGNATURE AA/LA, Herman Kleine — DATE

TITLE

4. APPROVAL A/AID (See M.O. 1025.1 VI C)

SIGNATURE — DATE

ADMINISTRATOR, AGENCY FOR INTERNATIONAL DEVELOPMENT

AGRICULTURAL COOPERATIVES

PROP

A. The Mission Goal

1. Statement of Goal

The Mission goals which this project addresses are to raise the level of income of that segment of the population (estimated at 53%) which is on the margin of society, and to maximize the participation of all people of Ecuador in the development process.

2. Measures of Goal Achievement

Goal achievement will be measured through evaluation of the effect of the project on the following specific indicators:

a) Increased income to cooperative members from increased productivity.

b) Increased income to cooperative members from marketing through cooperatives.

c) Increase in number of active cooperative members.

d) Increased attendance at cooperative meetings.

e) Increase in use of extension and other technical assistance services.

f) Positive changes in attitudes towards participation, personal efficacy and social relations.

g) Increased effectiveness of the agricultural cooperative movement in influencing government policy and securing government assistance (e.g. export quotas, farm prices, extension services, etc.).

3. Assumptions about goal achievement

a) That cooperatives are an effective means of mobilizing the participation of significant numbers of low income farmers, and increasing their income.

b) That the GOE will continue to allow significant non-public sector involvement in the marketing of agricultural products.

c) That the people reached by this project constitute an important target group within the 53% at the margin of society.

d) The demonstration of successful service-oriented agricultural cooperatives will give impetus to the establishment of similar organizations in other parts of the country, i.e.:

1) That the AID assistance will create an infrastructure which will demonstrate to the GOE and other sources of outside assistance the feasibility and utility of small farmer agricultural cooperatives and which will serve as a financial and management base for future growth of the movement; and

2) That small farmers will organize into cooperatives and support those organizations financially and morally when the economic and social benefits of cooperative organization are demonstrated.

e) That second level agricultural cooperative organizations are essential for the successful functioning of first-level agricultural cooperatives in Ecuador.

f) That a degree of specialization of functions among rural cooperative organizations, supply of credit by credit unions, marketing and farm supply functions by agricultural cooperative organizations assures improved administration of the services required by the small farmers.

g) That the credit union federation (FECOAC), the agricultural cooperative federations (FECOPAM and FENACOOPARR) and the credit institutions (Cooperative Bank, BNF) will plan and implement complementary action programs in the rural sector.

B. The Project Purpose

1. Statement of the project purpose

This project proposes to establish an agricultural cooperative infrastructure which is financially, technically and administratively self-sufficient, and is able to provide financial and technical support for the continued growth and improvement of the agricultural cooperative movement, and able to identify and seek out necessary outside financial and technical assistance.

2. Conditions expected at end of project

a) Two agricultural cooperative federations the National Federation of Rice Cooperatives (FENACOOPARR) and the National Federation of Agricultural Production and Marketing Cooperatives (FECOPAM) that are self-sufficient, well-managed and growing, and that are providing services such as the following to their member cooperatives: Farm supply sales, marketing of major products, machinery

pools, seed farms, auditing services, management and accounting assistance, legal and land tenure assistance and coordination of credit and agricultural technical assistance.";

b) A national level cooperative farm supply organization providing coordinated farm supply bulk purchasing and distribution services to the lower level cooperative organizations.

c) Eight regional cooperative centrals or unions providing similar services and complementing the above which are most efficiently provided at the regional level, especially marketing and farm supply.

d) Approximately one hundred and thirty (130) base-level cooperatives that are providing services such as loan request preparation, credit disbursement, collection of products for marketing, ordering and distribution of farm supplies, administration of cooperative-owned farm machinery and irrigation systems and other services most efficiently performed at the local level.

e) A Directed Agricultural Production Credit Program effectively functioning in 36 rural sector credit unions, channeling credit and technical assistance to the small farmer members of the DAPC credit unions, and coordinating the marketing of major farm products and the sale of farm supplies with an appropriate agricultural cooperative organization.

f) A well-managed, effective and responsive Cooperative Bank.

Basic Assumptions

a) That once the cooperative federations are financially self-sufficient based on a given number of cooperative members, and a given volume of business and services they will set aside the internal resources and seek out the external resources needed to continue the growth and improvement of the agricultural cooperative movement.

b) Attitudinal prerequisites of a successful cooperative movment are consistent with Ecuadorean cultural patterns and values.

c) Projected size and volume of services of cooperative federations are sufficient to permit economically viable institutions.

d) Turnover in local cooperative managers will be low.

C. Statement of Project Outputs and Output Indicators

1. The following table sets forth the output indicators and targets for the duration of the project:

Output Indicators	Output Targets CY71	CY72	CY73	CY74	CY75
1. FENACOOPARR					
a. First level cooperatives functioning and affiliated	31	32	35	38	44
b. Number of first level cooperatiaes with qualified managers	11	11	16	22	30
c. Number of first level cooperatives with accounting functioning and self-financed	7	7	12	20	30
d. Number of cooperative members	1,212	1,335	1,425	1,515	1,605
e. Hectares acquired by cooperatives (annual)	2,945	10,400	11,600	11,100	11,800

(cont.)

Output Indicators	Output Targets CY71	CY72	CY73	CY74	CY75
f. Number of hectares in rice cultivation 1/	4,300	5,283	5,734	6,184	6,634
g. Amount of rice produced (thousand qq)	155	189	235	315	358
h. Average yield per hectare (qq of milled rice)	35	36	41	51	54
i. % increase in yield per hectare - Base yr. 1971 =100	100	103	117	146	154
j. Capitalization of first-level cooperatives (S/. 000)	1,914	2,266	2,719	3,263	3,916
k. Amount of rice marketed by Federation (thousand qq)	0	20	50	100	150
l. Income to FENACOOPARR from marketing (S/.000)	0	160	250	400	600
m. Income to FENACOOPARR from farm supplies sold (S/.000)	5	32	96	109	136
n. Income to FENACOOPARR from other cooperative services (S/.000)	13	136	286	200	200
o. %self-sufficiency of FENACOOPARR	1%	14%	30%	50%	75%
p. Number of trained Federation staff	14	12	16	18	20
q. Data collection and evaluation system established			x		
r. Amount of credit used by first-level cooperatives (S/.000)	3,046	5,284	5,644	9,006	12,908

1/ Represents double cropped acreages

(cont.) Output Indicators	Output Targets CY71	CY72	CY73	CY74	CY75
2. FECOPAM					
a. First-level cooperatives functioning, affiliated and receiving federation services	41	45	61	80	94
b. Number of first-level cooperatives with qualified managers	1	5	20	40	60
c. Number of first-level cooperatives with accounting functioning and self-sufficient	4	22	35	50	75
d. Hectares acquired by cooperatives (annual)	469	3,000	4,000	4,000	5,000
e. Number of cooperative members	0	2,500	3,050	4,000	4,700
f. Number of hectares in cultivation	6,785	8,300	9,000	9,400	10,000
g. Number of hectares with technified cultivation	705	800	1,100	1,500	3,000
h. Amount of major crops produced (qq)					
1. Corn	11,480	15,456	23,912	35,480	47,376
2. Potatoes	95,571	113,400	166,530	235,200	296,100
3. Wheat	6,970	7,650	12,200	19,200	26,320
i. Average yield per hectare (quintales - qq)					
1. Corn	10	12	14	16	18
2. Potatoes	111	120	130	140	150
3. Wheat	17	17	20	24	28
j. Increased yield per hectare (Base yr. 1971 = 100)					
1. Corn	100	120	140	160	180
2. Potatoes	100	108	117	126	135
3. Wheat	100	100	118	141	165

(cont.) Output Indicators	Output Targets CY71	CY72	CY73	CY74	CY75
k. Amounts of products marketed by FECOPAM (S/.000)	0	0	500	600	750
l. Income to FECOPAM through marketing (S/.000)	0	0	50	60	75
m. Income to FECOPAM through farm supplies sold (S/.000)	0	15	150	180	220
n. Income to FECOPAM from other cooperative services (S/.000)	0	100	288	448	576
o. % Self-sufficiency of FECOPAM	0	24%	35%	50%	75%
p. Second-level staff trained	0	6	10	15	20
q. Data collection and evaluation system established and operating			x		
CREDIT UNION DAPC PROGRAM					
a. First-level credit unions participating	10	10	20	28	36
b. Number of members participating	1,900	2,900	3,400	3,700	4,100
d. Total annual amount of DAPC Loans (in million sucres)	8.0	12.00	14.4	18.0	19.2
d. Number of hectares financed by DAPC Loans	2,900	4,800	6,000	7,200	8,400

(Cont.) Output Indicators	Output Target CY71	CY72	CY73	CY74	CY75
e. Total production, major crops, financed by DAPC Loans (in quintals)					
1. Wheat		23,310	35,340	40,860	49,990
2. Potatoes		40,080	62,320	89,050	100,180
3. Rice		22,615	28,620	35,190	43,050
4. Corn		8,040	11,120	14,590	18,650
f. Average gross increases in personal income to credit union members from production financed by DAPC Loans in Sucres					
- number of cooperative members		2,900	3,400	3,700	4,100
-average income increase per member		600	900	1,000	1,400
- total increased income resulting from DAPC Loans (in million sucres)		1.75	3.35	3.7	5.74
4. COOPERATIVE BANK					
a. Late Loan Rate	9.5%	9%	6%	6%	6%
b. Total outstanding loans to agricultural sector (million sucres)	14	44	68.5	75.5	85
c. Total outstanding loans (million sucres)	39.1	72	110	128	145
d. Level of Cooperative Bank operations with Fondos Fiduciarios (S/.000)			5,000	10,000	15,000
e. Expansion of Cooperative Bank service base					
1. Opening of branches		Guayaquil			
2. 2. Correspondent relations with Banks			BNF		

D. Statement of Project Inputs

1. The USAID and cooperating agencies will provide the following goods and services in order to produce the above outputs:

Budget and Implementation Schedule

Inputs (USAID)		FY73		FY74		FY75	
I. Total Cost of Project			$370,000		$270,000		$172,000
II. Contract Costs			210,000		149,000		98,500
A. Personnel			139,000		96,000		56,000
1) Operations and Management Advisor FECOPAM	20,000			35,000		31,000	
2) Operations and Management Advisor FENACOOPARR	30,000			-		-	
3) TDY Consultants	13,500			13,500		10,500	
4) DAPC Advisor	13,500			-		-	
5) Cooperative Management Training Advisor	34,500			30,500		-	
6) Agricultural Cooperatives Evaluation	9,000					9,000	
7) Local Hire							
a) Cooperative Management Advisor	11,500			11,500			
b) Clerical/Administrative	7,000			5,500		5,500	
. Other Costs			63,000		45,000		34,500

(Continuation)

Inputs (USAID)	FY73	FY74	FY75
C. Participants	8,000	8,000	8,000
III. Direct Costs	160,000	121,000	73,
A. Commodities	18,000	8,500	3,
1) Vehicles	13,500	4,500	
2) Office and Audio Visual equipment and supplies	3,500	3,000	2,000
3) Engineering and Agricultural demonstration equipment	1,000	1,000	1,000
B. Other Costs	142,000	112,500	[illegible]
(financial support for salaries, transportation, vehicle maintenance, education and field operations)			
1) FENACOOPARR	70,000	55,000	[illegible]
2) FECOPAM	45,000	38,000	[illegible]
3) DAPC Program (FECOAC)	27,000	19,500	[illegible]

(Continuation)

Inputs (Cooperating Agencies)	CY73	CY74	CY75
1. Personnel	$50,000	$78,000	$103,000
2. Other Costs	22,000	34,000	60,000
TOTAL	$72,000	$112,000	$163,000

NARRATIVE

Since this is a revision of a previous PROP, and the project is well underway, it would be useful to briefly trace the development of the project, and compare actual accomplishments to expectations in the previous PROP.

History of the Project

The Agricultural Cooperatives project in its present form was initiated in FY 1965. The first phase of the project (1965-1968) consisted primarily of the development of the Coffee Growers Cooperative Federation, and related base level cooperatives and cooperative unions. Active assistance to the coffee growers cooperatives terminated in 1969. The cooperatives have since progressed to the point where they have been assigned a significant portion of the total Ecuadorean quota for coffee exports.

In 1968 work was initiated in the Guayas River Basin with the objective of determining the feasibility of organizing rice growers cooperatives in that area. The preliminary work established the feasibility of such a project, and a Rice Cooperatives Project was established under a CLUSA contract.

The major objectives of the project were to organize thirty base-level cooperatives, legalize these groups and affiliate them in a federation or union. Although some of the groups already existed, in most cases it was necessary to organize new cooperatives. This required leading the groups through the entire lengthy process from initial contacts through promotion and motivation, cooperative education and leadership training, legalization, installation of accounting systems, and initiation of activities. It was soon found that in addition to all this, it was necessary to provide assistance to the cooperatives in the acquisition of land.

Thus, the first two years of the project (1969 - 1970) were dedicated overwhelmingly to the organization and legalization of cooperatives, the acquisition of land for the cooperatives, and the formation of the National Federation of Rice Cooperatives. The implementation of the Land Sale Guarantee Loan, designed to further land acquisition by cooperative members, has been delayed but is about to be initiated.

In early 1970 work began in the highlands of Ecuador with the objective of developing a cooperative infrastructure in that region. Until recently, the major activities in this region were in the two northern-most provinces of Carchi and Imbabura. In these areas there is little to be done in the way of organization of new cooperatives. Rather the focus has been on improving the administration of the existing base-level cooperatives, and organizing regional cooperativ association to provide farm supply services and later to initiate marketing activities. It was planned that the project could begin to work through the National

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Federation of Agricultural and Marketing Cooperatives (FECOPAM). However, it was not until the latter part of CY 1971 that the National Directorate of Cooperatives intervened FECOPAM, and invited the CLUSA contract team to begin the work of reorganizing the Federation.

PRESENT STATUS OF THE PROJECT:

A. Rice Cooperatives

The National Federation of Rice Cooperatives (FENACOOPARR) was legalized in November 1970. It is expected to reach a 15% level of self-sufficiency in CY 1972. The Federation now provides services in the following areas to 31 legalized rice cooperatives affiliates:

a) Marketing

b) Farm supply

c) Accounting and auditing

d) Loan request preparation

e) Land tenure

f) Cooperative education

g) Agricultural extension (through an agreement with the Ministry of Production and the National Rice Program).

8,500 hectares of land have been acquired by the rice cooperatives since the initiation of the project.

The rice cooperatives portion of the project is at a watershed. During the past year the Federation has begun shifting from a primarily promotional and technical assistance activities into commercial, income producing activities. Farm supply and rice marketing operations have been initiated

on a small scale. A full-time CLUSA advisor began his services in July 1972. His major focus will be on assisting the management of the farm supply and marketing operations.

B. Highland Cooperatives

A technical assistance agreement has been signed between CLUSA and FECOPAM. AID, under a Pro/Ag signed with the Ministry of Social Welfare, is providing financial assistance to the Federation. The Federation, with CLUSA guidance is reestablishing its contacts with agricultural cooperatives on the highlands.

Most of these cooperatives have either been inactive members of FECOPAM or have never affiliated. The Federation is beginning to provide these cooperatives with essential services, such as accounting, auditing, land tenure and agricultural extension, (the latter two, through agreements with GOE agencies), cooperative education and farm supplies, (through the formation of regional farm supply cooperatives).

FECOPAM will work with existing legalized cooperatives. Therefore, it will be able to move into commercial income producing activities without the delays encountered in the rice cooperatives project. Two regional farm supply cooperative associations are operating and one more will soon begin operations.

At this time, FECOPAM is providing services to fifty (50) member cooperatives and is assisting the operations of two regional cooperative unions, and one central in the provinces of Carchi, and Imbabura, in the northern highlands. FECOPAM is also organizing two regional cooperative farm supply stores in the provinces of Cotopaxi and Tungurahua, in the central highlands.

C. Directed Agricultural Production Credit Program

This program began in 1966 as a pilot project of the Credit Union Federation, (FECOAC) with technical assistance from CUNA. The objectives of the program were to orient more of the credit generated in the Credit Union movement towards productive agricultural credit, by increasing the amount of financing available, and improving the delivery system for credit to small farmers.

An evaluation of the project was recently completed by FECOAC with assistance from USAID/E. The major findings of the evaluation were the following:

a) Additional technical assistance in two areas is required if the DAPC program is to have a significant impact:

   1) credit union administration

   2) agricultural extension

b) The program must be coordinated with all aspects of the farmers' production cycle, especially marketing and availability of farm supplies, if it is to be successful.

As a result of this evaluation, FECOAC has entered into an agreement with the Ministry of Production which will substantially increase the agricultural extension resources available to FECOAC. It is developing agreements with the National Development Bank and the Cooperative Bank to assure availability of sufficient credits in addition to those generated from within the credit union movement. It is also developing with FECOPAM a working relationship whereby each Federation will carry out a promotional campaign to a) bring the members of rural credit unions into the regional farm supply and marketing cooperatives, and b) bring the agricultural cooperative members into larger regional credit unions which will either be based on existing credit unions with predominantly rural memberships, or will be newly established with FECOAC assistance. Under this arrangement, FECOPAM will be responsible for the implementation of marketing services, FECOAC will develop the channels for distribution of the farm credit, and both organizations will participate in the development of a national farm supply cooperative organization. It is projected that in the future FENACOOPARR will join in this arrangement or will enter into a similar one with FECOAC and FECOPAM.

Thus, the focus of the DAPC program will be on improving the administrative and agricultural technical assistance to the rural credit unons; on improving the efficiency of the credit channels to the small farmers, on attracting additional small farmers members to existing rural credit unions; or developing new regional credit unions or credit union centrals which can serve larger number of small farmers.

In order to improve the efficiency of the credit channels to the small farmers FECOAC will receive additional technical assistance from AID in the establishment and training of staff for a credit department which will channel and supervise agricultural credit to the small farmers from national lending sources such as the Cooperative Bank and the National Development Bank.

In summary, FECOPAM and FECOAC will initiate the implementation of an integrated work plan in which the responsibilities of each party will be well-defined in order to provide the most efficient and most important services to the small farmer members of the cooperatives.

Within this working arrangement, the parties will have the following responsibilities:

a) To jointly establish a national farm supply cooperative organization to meet the farm supply needs of the small farmers and the member cooperatives.

b) FECOPAM will carry on the following activities:

   (1) Promote the affiliation of the agricultural cooperative members into the rural credit unions, or into regional credit union centrals.

   (2) In coordination with the Ministry of Production, provide agricultural technical assistance to the small farmer cooperative members in order to improve production techniques.

(3) In conjunction with the National Farm Supply Cooperative Organization, carry out the necessary feasibility studies, and initiate the operations of the regional farm supply stores.

(4) Initiate marketing services for the small farmer cooperative members.

c) FECOAC will carry out the following activities:

(1) Channel agricultural credit to the small farmers through the rural credit union system

(2) Provide technical assistance and training to the rural credit union managers in administration and financial management.

(3) Maintain supervision and control over the lending procedures of the rural credit unions.

(4) In coordination with the Ministry of Production, provide technical assistance to the rural credit unions in farm planning under the procedures of the DAPC program.

(5) Within its possibilities, provide financial assistance to the projects which will be carried out in coordination with the other cooperative federations.

(6) Promote the affiliation of agricultural cooperative members into the rural credit unions and where rural credit unions are not available, promote the creation of new credit unions, new branches of existing credit unions, or new credit union centrals in order to make increased agricultural credit efficiently available to the small farmers.

D. Cooperative Bank

The cooperative Bank has 220 member cooperatives. At the end of CY71 it had S/39, 545, 698 in outstanding loans (US$1, 581, 822). The Bank has opened its first branch in Guayaquil and is studying the possibility of establishing a correspondent arrangement with the National Development Bank which has branches throughout the country. Such an arrangement could allow the Cooperative Bank to significantly improve and expand its services. Since October, 1971 the Bank has the full-time technical assistance of the CLUSA Banking and Finance Advisor.

RATIONALE

Ecuador is basically an agricultural society. Approximately 60% of the total national population is in the rural sector, and the large majority (over 90%) of the rural population is made up of small farmers. Most of these small farmers are earning less than the average per capita income (US$300), and have only limited access to the factors of production such as capital, technology, land, and management skills, which would allow them to increase their incomes from farming. They are also at the mercy of inefficient and inequitable systems for distribution of farm supplies and marketing of farm products.

Sources of credit for small farmers are expanding. However, actual delivery of the credit to the farmer is still on a scale far less than the need because of his lack of competence and organization to design feasible loan requests and his lack of technical assistance. Technical assistance to small farmers has been severely limited partially because of insufficient GOE funds available to the technical assistance organizations such as the Ministry of Production. Such technical assistance has been further limited by the high cost of providing assitance to small farmers on an individual basis, and because the small farmer has yet to acquire the influence to be able to demand competent services from the government.

The most immediate bottleneck to small farmer land acquisition is lack of organization. Unless he is organized, a small farmer is for all practical purposes unable to acquire land. The Agrarian Reform Law requires cooperative organization for land acquisition under government auspices. In order to buy land on a commercial basis, small farmers must organize to pool sufficient resources to purchase the tracts of land which are up for sale. Even when they have clear title to land, the landholdings and the amount of production are generally so small that the farmer alone is defenseless against the various problems he faces. Finally, most of the small farmers are unable to effectively manage their small plots, much less a larger enterprise, without technical assistance inputs.

The number of agricultural cooperatives in Ecuador has increased dramatically since 1960. Today, there are 659 legalized agricultural cooperatives in the country. Virtually, all of the agricultural cooperatives in Ecuador are made up of 20-100 small farmers (average of 1-10 hectares in the highlands and 3-20 hectares on the coast), who band together initially in order to acquire land under the Agrarian Reform Law, or through purchase or through seizure. Once land is acquired, the cooperative members have little or no conception of what further services the cooperative can provide, nor do they have the technical or managerial competence to implement new cooperative services. Therefore, generally the cooperatives become stagnant, ineffective paper organizations once the member's immediate objective of land acquisition is attained.

The cooperatives which do exist provide a basis from which to build a viable agricultural cooperative infrastructure. However, the individual base-level cooperatives have generally too few members and the total volume of business of the small farmer members is generally too small to have any significant impact on marketing or farm supply operations, on a national or regional level. Therefore, second-level organizations are required to pool the resources, the demand and the production of several small farmer cooperatives. At this level cooperative organizations can sustain the volume of business necessary to support competent management, and to conduct farm supply and marketing operations of sufficient scale to have an impact on prices of farm inputs and farm products, and thus have an impact on small farmer income.

The basic rationale of the project is that cooperatives are one of the most useful tools on the Ecuadorean scene for addressing the basic problems of the small farmer: low income and low participation in the society. The cooperative movement is seen as such by the GOE and by the small farmers themselves, although neither has yet come close to dedicating the resources needed to develop a viable agricultural cooperative infrastructure.

This project does not attempt to develop a truly nation-wide agricultural cooperative movement. At the end of project only a tiny fraction of the small farmers of Ecuador will be members of the cooperative organizations affected by the project. Rather this project addresses itself to the needs of the small farmer through the development of an agricultural cooperative infrastructure which will be self-sufficient and will demonstrate to the small farmer, the GOE and other donors involved in Ecuador, the utility of cooperatives, as well as how they can be developed. The infrastructure to be developed by this project will serve as the basis for continued expansion of the agricultural cooperative movement through the mobilization of its own resources, through its influence on the channelling of public resources, and through its ability to attract, and effectively use other donor resources.

This infrastructure will essentially consist of two organizational levels: the base-level cooperatives, and the secondary-level cooperative organizations (cooperative unions, centrals and federations).

Each of these levels is essential to the success of the project. It is at the base-level where the small farmer participates in a truly participatory way. He is involved in the cooperatives at the level and he recognizes they belong to him. It is through effective base-level participation that the campesino can control the secondary-level organizations and minimize the bureaucratization and inward-orientation inherent to organizations at that level. Furthermore, the base-level cooperative activities are: short-term storage and distribution of farm supplies, administration of light and medium farm machinery, construction and maintenance of irrigation systems, basic management accounting and farm records, collection of produce for marketing, development of farm plans and loan requests, channeling of credits from outside sources to the farmers, and of course, land acquisition.

At the secondary-level cooperative organizations will concentrate their resources on: 1) providing and channeling technical assistance (agricultural and administrative) to the base-level cooperatives, 2) operations for marketing and farm supply services (i.e., information, contracts, and and distribution to the cooperatives, stocking, processing and storage of produce, sales of produce to wholesalers and retailers, transportation of produce, and collection from the cooperatives, 3) legal, land tenure and auditing services to the cooperatives 4) other services extended, such as machinery pools and machinery maintenance facilities, and factors

At the base-level the project will assist the cooperatives to move from their present concentration on land acquisition into the provision of the types of services indicated above. The project's input to the base-level organizations will be channeled through the cooperative organizations at the secondary-level through the upgrading of their technical assistance capability, particularly administrative technical assistance, and through the provision of financial and technical assistance to the secondary-level organizations in the development and management of their commercial income-producing services, especially marketing and farm supply. In addition, the project will place increased emphasis on developing and implementing practical, intensive training programs for cooperative managers at both levels. This will be done through provision of technical assistance to a national level organization for the development of a practical intensive training program for managers of base and secondary level cooperatives.

Finally, a new approach is the inclusion in this project of financial and technical assistance to the Credit Union Federation's DAPC Program. The DAPC Program deals with the same target group as the agricultural cooperatives. It operates in many of the same regions, and has the potential to operate in all of the same regions. In many cases, it is working with the same individuals, providing credit services which are complementary to the farm supply and marketing services provided by the agricultural cooperatives.

The objective of this assistance is to integrate more closely the activities of the credit unions in the rural sector, with the agricultural cooperatives, in order to avoid duplication of efforts by these organizations, to take

advantage of the specializations being established by each organization, and to most efficiently provide to the small farmer the range of basic services that he requires: (credit, technical assistance, farm inputs and marketing).

As is evident from the discussion above, the project is entering a phase in which the promotional and motivational activities will be reduced and emphasis will be placed on implementing the commercial, income-producin activities, as well as upgrading the administrative and management capabilities of the cooperative organizations at both levels.

Although technical assistance to the cooperatives will continue to be important, the focus of this assistance is changing significantly. In the areas of agricultural extension, the Federations' involvement will no longer be direct, but rather through agreements with GOE agencies which will provide the assistance to the cooperatives. In cooperative education emphasis will continue to shift from leadership and membership training to training of cooperative managers. It is likely, that AID assistance for the education activities of the Federations will be reduced steadily over the next two to three years, as a national level organization begins implementing intensive cooperative management training programs. The accounting technical assistance presently provided by the Federations will be eliminated as base-level cooperatives management improves, and will be replaced by auditing services. In regard to land tenure services, the federations will maintain close coordination with the GOE

The Mission feels that a thorough outside evaluation of the project should be conducted as early as possible during FY73-. The purpose of this evaluation will be: 1) to review the progress of the project to date, 2) to identify major barriers to future progress, 3) to evaluate the present activities, inputs, and future plans of all the parties to the project, 4) to analyze their relevance to overcoming the barriers and attaining the objectives of the project. (The major parties would be USAID/E, the contractors, GOE and cooperative organizations). 5) to recommend needed changes in program design, particularly related to host agency and contractor inputs, and 6) to review the continuing data gathering and evaluation capabilities of the host agencies and assist them in improving that capability in a manner most useful and practical for them.

This evaluation should be carried out by an outside agency or individuals with successful experience in evaluations of similar projects.

A second outside evaluation of similar scope is projected for completion twelve months before EOP in order to make any adjustments called for before EOP, and to identify residual financial and technical assistance which may be required.

Funds for the two special evaluations are projected in this PROP.

AID 1025-1A (7-71) (NARRATIVE DESCRIPTION)

PROJECT NO.	SUBMISSION	DATE	PAGE ____ of ____ PAGES
918-15-995-095.1	☐ ORIGINAL ☒ REVISION (Number) 1	8/3/72	

Step	Activity	Description	Responsible Agent	Elapsed Months
0	0	Conceptualization		
1	0-A	Review 5 year financing and capitalization projections and work plans for [illegible] and [illegible] and make needed revisions.	PENACOOPAIR INCOPAN CONSA USAID/S	1
2	0-B	Negotiate and sign agreement between [illegible] & [illegible] and initiate complementary activities in the rural sector.	MINCOPAN PENCAC CONSA	2
	A-B	Logical interrelationship		
3	A-D	Complete feasibility study and initiate operations of the [illegible] rice mill.	PENACOOPAIR CONSA	8
	D-E & E-D	Logical interrelationship		
	D-F	Logical interrelationship		
4	B-C	Complete feasibility study and initiate operations of national farm supply cooperative organization.	CCE MINCAC INCOPAN CONSA	6
5	C-H	Enter agreements between Ministry of Production and [illegible], [illegible] & [illegible] respectively, providing Ministry of Production technical assistance to member cooperatives.	CCE PENACOOPAIR MINCOPAN PENCAC	annually thru life of project
6	C-G	Negotiate and sign agreements for the provision of credit and technical assistance between [illegible], Cooperative Bank and/or National Development Bank.	CCE Coop Bank INCOPAN	4
7	B-I	Complete feasibility study of [illegible] extending operations on a regional basis, and initiate operations.	MINCOPAN CONSA	8
	I-F	Logical interrelationship		
	E-G & G-E	Logical interrelationship		
	G-F	Logical interrelationship		
8	F-H	Carry out first outside evaluation of the project.	USAID/S Contractor	9

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AID 1025-1A (7-71) (NARRATIVE DESCRIPTION)

PROJECT NO.	SUBMISSION	DATE	PAGE of PAGES
511-15-995-095.1	☐ ORIGINAL ☒ REVISION (Number) --	9/3/72	

Step	Activity	Description	Responsible Agent	Months
9	H-I	Organize and initiate agricultural coopératives and rural credit union management training program, and contract needed technical assistance	GOE USAID/E Contractor	6
10	H-J	Initiate cooperative audit services of FEDECOOPADE & FECOPAN	FEDECOOPADE FECOPAN	6
	I-J	Logical interrelationship		
11	H-K	Revise farm supply marketing, credit and other operations of coop organizations, based on evaluation and continue operations	FEDECOOPADE FECOPAN FENCOAC GOE Contractor USAID/E	18
12	K-L	Carry out second outside evaluation of the project	USAID/E Contractor	3
13	L-M	Revise the operations of the coop organizations based on evaluation in order to meet the project purpose		5

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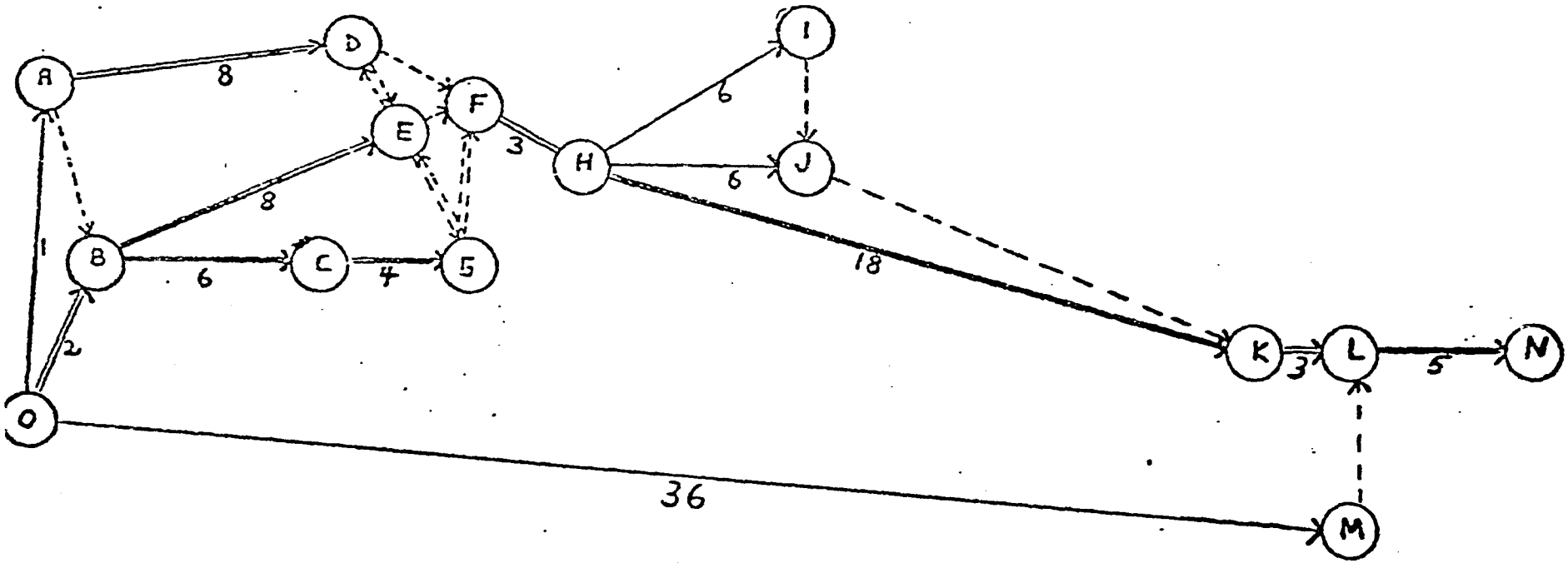
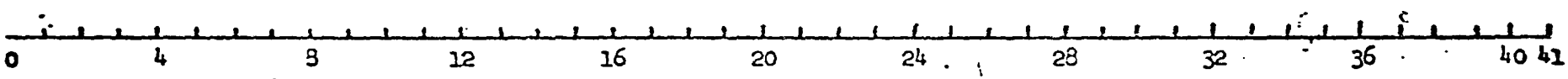
Abreviated PERT Network





Life of Project: From FY [illegible] To FY [illegible]

Total U.S. Funding:

Date Prepared: August [illegible], 1972

LOGICAL FRAMEWORK MATRIX

INSTITUTIONAL DEVELOPMENT Agricultural Cooperatives

Narrative Summary	Objectively Verifiable Indicators
Mission Goal 1. To raise the level of income of that segment of the population (estimated at 55%) which is on the margin of society. 2. To maximize the participation of all people of Ecuador in the development process.	**Measures of Goal Achievement** a) Increased income to cooperative members from increased productivity. b) Increased income to cooperative members from marketing through cooperatives. c) Increase in number of active cooperative members. d) Increased attendance at cooperative meetings. e) Increase in use of extension and other technical assistance services. f) Positive changes in attitudes towards participation, personal efficacy and social relations. g) Increased effectiveness of the agricultural cooperative movement in influencing government policy and securing government assistance (e.g. export quotas, farm prices, extension services, etc.).
Project Purpose This project proposes to establish an agricultural cooperative infrastructure which is financially, technically and administratively self-sufficient, and is able to provide financial and technical support for the continued growth and improvement of the agricultural cooperative movement, and able to identify and seek out necessary [illegible] provide financial and technical assistance.	**Conditions expected at End of Project FY 1976** a) Two agricultural cooperative federations the National Federation of Cooperatives (FEDECOPAR) and the National Federation of Agricultural Production and Marketing Cooperatives (FENCOPAI) that are self-[illegible] well-managed and growing, and that are providing services [illegible] following to their member cooperatives: [illegible] of [illegible] production, [illegible] pools, [illegible] farms, [illegible] and accounting assistance, legal and [illegible] [illegible] of credit and agricultural [illegible]

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b) A national level cooperative farm supply [illegible] ed farm supply bulk purchasing and distr[illegible] level cooperative organizations.

c) Eight regional cooperative centrals or unions providing similar and complementing the above which are more efficiently provided regional level, especially marketing and farm supply.

d) Approximately one hundred and thirty (130) base-level cooperati[illegible] are providing services such as loan requ[illegible] preparation, credit ment, collection of products for marketing, ordering and distrib[illegible] farm supplies, administration of cooperative-owned farm machin[illegible] irrigation systems and other services more efficiently perform[illegible] local level.

e) A Directed Agricultural Production Credit Program effectively fu[illegible] ing in 36 rural sector credit unions, channeling credit and tech[illegible] assistance to the small farmer members of the DAPC credit unions coordinating the marketing of major farm products and the sale o[illegible] supplies with an appropriate agricultural cooperative organiza[illegible]

f) A well-managed, effective and responsive Cooperative Bank.

Outputs

FENACOOPARR

Output Targets	CY 71	CY 72	CY 73	CY 74	CY 75
a. First level cooperatives functioning and affiliated	31	32	35	38	44
b. Number of first level cooperatives with qualified managers	11	11	16	22	30
c. Number of first level cooperatives with accounting functioning and self financed	7	7	12	20	30
d. Number of cooperative members	1,212	1,335	1,425	1,515	1,6[illegible]
e. Hectares acquired by cooperatives (annual)	2,945	10,400	11,600	[illegible],100	11,[illegible]
f. Number of hectares in rice cultivation 1/	4,300	5,283	5,734	[illegible],184	6,[illegible]
g. Amount of rice produced (thousand qq)	155	189	235	315	355
h. Average yield per hectare (qq of milled rice)	535	36	41	51	5[illegible]
i. Increase in yield per hectare (Base year 1971 = 100)	100	103	117	146	15[illegible]
j. Capitalization of first level cooperatives (S/ 000)	1,914	2,263	2,719	3,263	3,9[illegible]
k. Amount of rice marketed by Federation (thousand qq)	0	20	50	100	[illegible]
l. Income to FENACOOPARR from marketing (S/ 000) 2/	0	160	250	400	6[illegible]
m. Income to FENACOOPARR from farm supplies sold (S/ 000)	5	32	96	109	[illegible]
n. Income to FENACOOPARR from other cooperative services (S/ 000)	13	136	286	200	[illegible]
o. % self-sufficiency of FENACOOPARR	1%	14%	30%	50%	75%
p. Number of trained federation staff	14	12	16	18	2[illegible]
q. Data collection and evaluation system established			x		
r. Amount of credit used by first-level cooperatives (S/ 000)	3,064	5,284	5,644	9,006	12,9[illegible]8

1/ Totals include 20% increase over actual acreage to represent double cropping.
2/ Leased mill.

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b) A national level cooperative farm supply [illegible] ed farm supply bulk purchasing and distr[illegible] level cooperative organizations.

c) Eight regional cooperative centrals or unions providing similar and complementing the above which are most efficiently provid[illegible] regional level, especially marketing and [illegible] supply.

d) Approximately one hundred and thirty ([illegible]) base-level cooperati[illegible] are providing services such as loan req[illegible] preparation, credit ment, collection of products for marketing, ordering and distri[illegible] farm supplies, administration of cooper[illegible] owned farm mach[illegible] irrigation systems and other services [illegible] efficiently perform[illegible] local level.

e) A Directed Agricultural Production Credit Program effectively [illegible] ing in 36 rural sector credit unions, ch[illegible] ling credit and tech assistance to the small farmer members of the DAPC credit union coordinating the marketing of major farm products and the sale [illegible] supplies with an appropriate agricultural cooperative organiz[illegible]

f) A well-managed, effective and responsive Cooperative Bank.

Outputs

FENACOOPARR

	Output Targets CY 71	CY 72	CY 73	CY 74	CY 75
a. First level cooperatives functioning and affiliated	31	32	35	38	[illegible]
b. Number of first level cooperatives with qualified managers	11	11	16	22	30
c. Number of first level cooperatives with accounting functioning and self financed	7	7	12	20	30
d. Number of cooperative members	1,212	1,335	1,425	1,515	1,6[illegible]
e. Hectares acquired by cooperatives (annual)	2,945	10,400	11,600	[illegible],100	11,[illegible]
f. Number of hectares in rice cultivation 1/	4,300	5,283	5,734	[illegible],184	6,[illegible]
g. Amount of rice produced (thousand qq)	155	189	235	315	[illegible]
h. Average yield per hectare (qq of milled rice)	535	36	41	51	[illegible]
i. Increase in yield per hectare (Base year 1971 = 100)	100	103	117	146	[illegible]
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l. Income to FENACOOPARR from marketing (S/ 000) 2/	0	160	250	400	[illegible]
m. Income to FENACOOPARR from farm supplies sold (S/ 000)	5	32	96	109	[illegible]
n. Income to FENACOOPARR from other cooperative services (S/ 000)	13	136	286	200	[illegible]
o. % self-sufficiency of FENACOOPARR	1%	14%	30%	50%	75%
p. Number of trained federation staff	14	12	16	18	20
q. Data collection and evaluation system established			x		
r. Amount of credit used by first-level cooperatives (S/ 000)	3,064	5,284	5,644	9,006	12,908

1/ Totals include 20% increase over actual acreage to represent double cropping.

2/ Leased mill.

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COOPERATIVE BANK					
a. Base loan rate	9.5%	9%	6%	6%	6%
b. Total outstanding loans to agricultural sector (million sucres)	14	44	68.5	75.5	85
c. Total outstanding loans (million sucres)	39.1	72	110	128	145
d. Level of Cooperative Bank operations with Fondos Fiduciarios ($000)			5,000	10,000	15,000
e. Expansion of Cooperative Bank service base					
1. Opening of branches			Guayaquil		
2. Correspondent relations with Banks			BNF		

Costs	Budget and Implementation Schedule FY 73		FY 74		FY 75
(USAID)					
Total Cost of Project	$370,000		$270,000		$172,000
I. Contract Costs	220,000		149,000		98,500
A. Personnel	139,000		96,000		56,000
1) Operations and Management Advisor FECOPAM	20,000	35,000		31,000	
2) Operations and Management Advisor FEMACOOPARR	30,000	-		-	
3) TDY Consultants	13,500	13,500		10,500	
4) DAFC Advisor	13,500	-		-	
5) Cooperative Management Training Advisor	34,500	30,500		-	
6) Agricultural Cooperatives Evaluation	9,000	-		9,000	
7) Local Hire					
a) Cooperative Management Advisor	11,500	11,500			
b) Clerical/Administrative	7,000	5,500		5,500	
B. Other Costs	63,000		45,000		34,500
C. Participants	8,000		8,000		8,000
II. Direct Costs	160,000		121,000		73,500
A. Commodities	18,000		8,500		3,000
1) Vehicles	13,500	4,500			
2) Office and Audio Visual equipment and supplies	3,500	3,000		2,000	
3) Engineering and Agricultural demonstration equipment	1,000	1,000		1,000	
B. Other Costs	142,000		112,500		70,500
(financial support for salaries, transportation, vehicle maintenance, education and field operations)					
1) FEMACOOPARR	70,000	55,000		35,000	
2) FECOPAM	45,000	38,000		25,000	
3) DAFC Program (FECOAC)	27,000	19,500		10,500	
(Cooperating Agency)					
Personnel	50,000		78,000		103,000
Other Costs	22,000		34,000		60,000
Total	72,000		112,000		163,000

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Important Assumptions

a) That cooperatives are an effective means of mobilizing the participation of significant numbers of low income farmers, and increasing their income.
b) That the GOE will continue to allow significant non-public sector involvement in the marketing of agricultural products.
c) That the people reached by this project constitute an important target group within the 53% at the margin of society.
d) The demonstration of successful service-oriented agricultural cooperatives will give impetus to the establishment of similar organizations in other parts of the country, i.e.:
   1) That the AID assistance will create an infrastructure which will demonstrate to the GOE and other sources of outside assistance the feasibility and utility of small farmer agricultural cooperatives and which will serve as a financial and management base for future growth of the movement; and
   2) That small farmers will organize into cooperatives and support those organizations financially and morally when the economic and social benefits of cooperative organization are demonstrated.
e) That second level agricultural cooperative organizations are essential for the successful functioning of first-level agricultural cooperatives in Ecuador.
f) That a degree of specialization of functions among rural cooperative organizations, supply of credit by credit unions, marketing and farm supply functions by agricultural cooperative organizations assures improved administration of the services required by the small farmers.
g) That the credit union federation (FECOAC), the agricultural cooperative federations (FECOPAM and FEMACOPAER) and the credit institutions (Cooperative Bank, BNF) will plan and implement complementary action programs in the rural sector.

a) That once the cooperative federations are financially self-sufficient based on a given number of cooperative members, and a given volume of business and services they will set aside the internal resources and seek out the external resources needed to continue the growth and improvement of the agricultural cooperative movement.
b) Attitudinal prerequisites of a successful cooperative movement are consistent with Ecuadorean cultural patterns and values.
c) Projected size and volume of services of cooperative federations are sufficient to permit economically viable institutions.
d) Turnover in local cooperative managers will be low.

(There are no assumptions for Outputs and Inputs)

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ANNEX A

AGRICULTURAL COOPERATIVES PROP

A. HOW PROJECT RELATES TO OTHER AID ACTIVITIES IN AGRICULTURAL SECTOR AND ECUADOREAN SECTOR STRATEGY.

The Agricultural Cooperatives Project forms an important part of the AID activity in the agricultural sector. The USAID Program for the sector concentrates on (1) increasing rural income and (2) expanding certain crops which have a ready market and which can either be exported or serve as import substitutes. The Agricultural Cooperatives Project is related more directly to the objective of increasing rural income by helping institutionalize programs wherein small farmers can market more efficently, buy inputs when needed and at lower prices, and develop a voice in the formulation of national agricultural policies. The GOE has also listed as its objectives an increase and redistribution of income and import substitutions and exports as its goals. It particularly named the Guayas Basin as a site for priority actions.

1. AID Loan 518-L-031: Relation to other Loans and Agricultural Cooperatives Grant Project.

Loan 031 is the second loan made to the Cooperative Bank. The first loan (518-L-024) is already disbursed. Both of these loans were conceived and planned under the Agricultural Cooperatives grant project, which provides to the Cooperative Bank grant-financed, advisory services of CLUSA, including advice and technical assistance particularly relative to the disbursement of the 031 loan.

Another interrelationship is that many of the cooperatives, members of one or the other of the three federations assisted by the grant project, are sub-borrowers under the 031 loan. Through the efforts of the federations in education, management, accounting, etc., the sub-borrower cooperatives are rendered more creditworthy, which in turn should be reflected in improved and sounder 031 loan operations.

A third interrelationship is that existing between the grant-assisted DAPC Program and the Cooperative Bank. On one hand the grant project strengthens the DAPC Program which is a client of the Bank; on the other hand it helps the Bank to be more responsive to small farmer credit needs.

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2. Land Sale Guaranty Loan 518-L-032 - Relation to other Loans and Agricultural Cooperatives Grant Project.

To a considerable extent the Agricultural Cooperatives Project identified the problems which the 032 loan addresses. The grant project was heavily involved in preparing the loan paper. The main relation which exists between the loan and the grant project occurs in this way: The grant project provides CLUSA advisory assistance and budget support to the Federation of Rice Cooperatives (FENACOOPARR), while many of the sub-borrower cooperatives (but not all) are members of FENACOOPARR. Under an agreement with the loan project management, FENACOOPARR is providing to some of the cooperative sub-borrowers a special type of technical assistance for which FENACOOPARR charges a fee. The technical assistance provided by the federation is made up principally of courses in cooperative education, management and accounting, obviating the necessity for the technical assistance branch of the loan project to provide this service. The fees paid to FENACOOPARR for this service come from the technical assistance component of the loan funds, but they will probably not exceed $4,000 in 1972. The grant-assisted Federation supports the loan to the extent that the Federation makes the sub-borrower cooperatives more creditworthy. The loan helps the Federation to the extent that the loan renders the cooperative sub-borrowers (members of the Federation) more productive and viable.

There is no essential timing relationship between the disbursement schedules of the grant and loan projects; hence it is not necessary for the disbursement periods of the projects to coincide.

There is one more interrelationship between the loan (032) and the 031 loan and the Cooperative Bank. The Land Sale Guaranty Loan (032) is being operated under a plan whereby private banks (including the Bank of Cooperatives) can have access to loan funds in a trust fund in the Central Bank of Ecuador with rediscount and/or guarantee procedures. The Cooperative Bank has already made one loan to a cooperative under Loan 032 and will probably make others in the near future. It is also possible that a cooperative under the 032 loan program may have access to 031 loan funds in the Bank of Cooperatives for purchases tied to dollars; that is, instead of lending the cooperative local currency from 032 for all of its needs, it could have a sub-loan from the 031 loan which utilizes dollars for purchasing farm machinery, etc.

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3. Agricultural Development and Diversification Loan (518-L-033) - Relation to Other Loans and Agricultural Cooperatives Project.

This loan is designed to provide credit to individual farmers for cacao production and for oil seed production. The site of operations is in the Guayas Basin which coincides with the area of operations of the 032 loan and of FENACOOPARR. Theoretically, the 033 loan could

finance individual farmers [illegible] ing them sub-loans [illegible] marketing organizat[illegible] possible with the A[illegible]

The Agricultural Cooperatives Project complements but does not duplicate the loan. Apart from the use of a small amount of loan 032 funds paid to the [illegible] Federation for services to sub-borrower Cooperatives under the 032 loan, no loan funds are available to finance project activities.

B. SELECTION CRITERIA FOR TARGET GROUP

Of the 650,000 or more fa[illegible] in the rural sector of Ecuador, about 400,000 -- approximately [illegible] percent -- have insufficient [illegible] to provide full employment to a family w[illegible] capacity is equivalent to [illegible] years. In this group are [illegible] 000 and less la[illegible] farms, as long ago as the [illegible], there [illegible] less than 1 hectare. [illegible] an increase in the next [illegible] which is not generally considered apt for pr[illegible] etc., from the total of 650,000 family units, we have [illegible] families in a more fortunate category and with [illegible] Of this number an estimated [illegible],000 are large [illegible] have access to technical assistance and credit, [illegible] sidered to be still within [illegible] our target group. By working [illegible] plemented by loans 031 and 032, [illegible] marginal group in operations that will [illegible] economy or more firmly [illegible]

The large and medium farmers who want to be involved in [illegible] movement will not be disc[illegible] of production and econom[illegible] not the primary target.

C. LINKING PROJECT INP[illegible] ACHIEVEMENT [illegible]

It is stated in PROP Section [illegible] that the ultimate Output [illegible] operative institutions. It [illegible] directed.

Essential AID inputs for effe[illegible] of the Project are provided [illegible]

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a) USAID funding [illegible] and operating budget augmentations on a diminishing [illegible] and

b) CLUSA continued [illegible] management and technical backstopping as well as [illegible] and [illegible] training.

Successful models for this [illegible] approach exist in the on-going, self-[illegible] National Federation of Coffee Cooperatives (FENACAFE) and the National Federation of Savings and Credit Cooperatives (FECOAC). All inputs [illegible] and most recently institutionalized cooperatives projects were provided [illegible] CLUSA [illegible] arrangement similar to the CLUSA use [illegible] Project. Early [illegible] beginning the [illegible] on June 30, 1972, showed [illegible] viable credit unions with 5,[illegible] members, [illegible] savings, assets of $9.3 million and over $32.0 million in accumulated [illegible].

These have the [illegible] potential, but diminishing budgetary support, AID [illegible] providing the following technical assistance [illegible] activities:

FENACAFE [illegible] providing CLUSA advisory services [illegible] cooperative management for the [illegible] of income, increasing activities aimed at increasing [illegible] more diversified services to members, such as farm [illegible], [illegible] milling and marketing operations. These indicators [illegible] significant [illegible] increases in CY 72, which are to be applied against [illegible] beginning in 1973.

FECOAC [illegible] advisory services to cooperative organization and [illegible] with [illegible] and [illegible] many existing but weak [illegible] opportunities for participation in expanding farm [illegible] [illegible] increasing numbers of members. These [illegible] generating income for immediate application to the federation [illegible] and thereby gradually decreasing AID budgetary support.

[illegible] CLUSA [illegible] credit management [illegible] toward improving the [illegible] recent IACC Program Evaluation by [illegible] important [illegible] and providing on-[illegible] to the IACC cooperatives concerning [illegible] of [illegible] procedures of IACC. The Credit [illegible] derived from the Cooperative [illegible] other sources to IACC [illegible].

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A multi-fold expansion of farm supply operations through coordinated procurement and distribution of production outputs on a national basis will be attained beginning in 1973 through a tripartite agreement among the three participating federations scheduled for execution in November 1972.

ELABORATION OF OUTPUT INDICATORS

Table C, pp. 5 -8 of the PROP have been updated for FENACOOPARR on the basis of new data compiled by the CLUSA Advisor recently assigned to that Federation, and for FECOPAM on the basis of a new, comprehensive study just completed. The new pages are substituted for the old ones. In the preparation of the new material, and in line with a completely collaborative style of operation, we have relied heavily on the contributions of the Bank, the federations and their advisors.

The most direct indicator of progress in the federations, FENACOOPARR and FECOPAM, is the one designated "o. Self-sufficiency", Table of the PROP. It measures the success of the federations in increasing their contributions to their operating budgets. To obtain this progress in self-sufficiency, the two federations must increase their incomes. The indicators which reflect progress in increasing income are output targets "l", "m", and "n", Table C of the PROP. Hence, the best indicators are the items "l", "m", "n" and "o".

It is fairly clear that progress in reaching self-sufficiency rests to a great degree, though not exclusively, on a base of increased agricultural production, so some indicators such as increase in number of hectares and yield per hectare have been chosen. Other factors which increase the cooperatives volume of business are also considered to be important. There is no known formula, however, for predicting self-sufficiency from several of the indicators (viz. "a", "b", "c", "d", "e", "f", "g", "h", "i", "j", and "k",), either individually or in combination. It is assumed, based on Mission experience, that they are important and their inclusion is based more on a subjective rather than an objective judgment. We are interested in production and volume of business and intend to follow them because we have made a management decision that they are important to the success of the Project.

If it could be demonstrated that there is a direct linkage between institutional inputs and some or all of the highly specific output indicators--a clearcut cause and effect relationship--the project would rest on a stronger scientific base; unfortunately one has to rely on judgments and appraisals rather than formulae for deciding that the inputs contemplated will allow the federations to increase their income and reach self-sufficiency on schedule. Probably the chief source of assurance in support of this conclusion comes from successful prior experience with two other federations described in page 6.

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The Cooperative Bank is a situation quite different from the federations. It is an independent institution and could already be classed as self-sufficient. There is room for improvement and our rationale for assisting it derives from our continuing interes in AID Loan 031 still being disbursed and because the bank is important to the cooperative movement as a whole. This Project is putting in about 1/4 man-year of technical assistance and the output expected is improvement in operations as reflected by the output indicators for the Cooperative Bank.

The situation with the DAPC Program is similar to that of the Cooperative Bank, except considerably more technical assistance and budget support is to go into the DAPC Program. That these inputs are linked with the output indicators is again a matter of judgment instead of demonstrable cause and effect relationships.

Basis for Crop Projections, Table C

The basis for the crop production projections can be derived to some extent from yield response to fertilizer taken from recent FAO on-farm trials. We attach, as Annex "B" some Xerox tables from the local FAO Information Bulletin No. 2 prepared by the FAO Fertilizer Program of Ecuador. Yield data ("Rendimiento kg/ha") are given in kilograms per hectare. A rough conversion to quintals per hectare can be made by multiplying by 2 and dividing by 100. Review of the yields and yield response in the major crops, corn, wheat, potatoes and rice, show yield possibilities well above those projected. Increasing application of other inputs (herbicides, insecticides, better land preparation and certified seed) which are to be provided through federations outlets will also increase production. The principal problem of the small farmer up to date is not that he does not care to use these inputs; but that they have not been available when he needs them and that he lacked credit to purchase them. Institutional improvements developed through the grant project should result in more readily available inputs to the farmers.

The Mission view is that some of the projected yield increases may be overly optimistic, not for lack of available inputs so much as for the overall sheer difficulty in establishing high annual rates of increase in yields per hectare where substantial numbers of farmers are involved. We expect to have more and better yield data in one to two years of operations, which may confirm or deny the validity of projections made by the Federations. We do not have such data at the present and hence are accepting for the time being the best judgments of the federations.

Bases for Projected Income - Cooperative Income Items

Income projections, as in the case of outputs, are based on actual 1972 experience to date, Project Work Plans detailing the scope of income generating project activity prepared by the Federation with the guidance of [illegible] Contract Advisors and the expert judgment of the latter given reasonably normal conditions.

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The following bases for each Project operational component are keyed to PROP Table C, Output Indicators:

FENACOOPARR

(Table C - 2, new page 6)

l) Actual 1972 income from marketing output of 1 leased mill, estimated 1973 income from marketing out of 2 leased mills, estimated 1974/75 income from marketing output of owned mill with 24 ton capacity, per 8 hr. shift.

m) Actual 1972 income from sales and projections based on expansion expected from participation in National farm supply Program contemplated beginning in 1973.

n) Estimated income in 1973 from services to member cooperatives including: education, accounting, extension and legal services for land acquisition. Income from this source will decrease in 1974-75 by phasing out education and accounting services to concentrate on economic projects.

o) The self-sufficiency projections reflect the foregoing income estimates.

r) Projected credit use based on contemplated scope of operations is expected to derive from:

i) Land Sale Guaranty Loan
ii) Banks - public and private

FECOPAM

(Table C - 2, new page 6,

) Projected income will derive from development of a program to market surplus "sierra" products in the coastal areas which was initiated on an experimental basis in late 1972 with favorable results. Also a work plan and feasibility study are completed for an early 1973 sub-project to organize a market central, initially with 18 existing and ultimately including 30 cooperatives.

n) One of two regional farm supply cooperatives planned in 1972 began operating in early October 1972 and the second is expected to open in December. These together with 5 existing non-affiliated outlets receiving management technical assistance from the Federation will be incorporated in and form the

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(Table C - 2, new page 6)

l) Actual 1972 income from marketing output of 1 leased mill, estimated 1973 income from marketing out of 2 leased mills, estimated 1974/75 income from marketing output of owned mill with 24 ton capacity, per 8 hr. shift.

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n) Estimated income in 1973 from services to member cooperatives including: education, accounting, extension and legal services for land acquisition. Income from this source will decrease in 1974-75 by phasing out education and accounting services to concentrate on economic projects.

o) The self-sufficiency projections reflect the foregoing income estimates.

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i) Land Sale Guaranty Loan
i) Banks - public and private

FECOPAM

(Table C - 2, new page 6)

l) Projected income will derive from development of a program to market surplus "sierra" products in the coastal areas which was initiated on an experimental basis in late 1972 with favorable results. Also a work plan and feasibility study are completed for an early 1973 sub-project to organize a market central, initially with 18 existing and ultimately including 30 cooperatives.

m) One of two regional farm supply cooperatives planned in 1972 began operating in early October 1972 and the second is expected to open in December. These together with 5 existing non-affiliated outlets receiving management technical assistance from the Federation will be incorporated in and form the

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base for a national farm supply program scheduled to begin operating in 1973 under agreement executed by the three federations late in 1972. This operation will significantly increase farm supply sales volume and income accordingly.

n) The Federation's income from other cooperative services derives from provision of assistance in accounting, audit, cooperative education, as well as farm supply and marketing, to its affiliated base cooperatives, and also by contractual agreement with independent second-level organizations for their member cooperatives.

Income projections are based on expansion of these services to a greater number of both FECOPAM affiliated and non-affiliated cooperatives.

o) The self-sufficiency percentage projections are considered to be as realistic as it is possible to establish in the circumstances and in relation with output indicators l), m), and n).

Self-Sufficiency Projections - Table C

These estimates are necessarily based on the projections for income-generating activities described in Table C of the PROP and reflect financial statements developed from Project Work Plans. These Work Plans represent the best subjective judgment of federation management and their Advisors, recognizing that their implementation is subject to unpredictable factors.

Reduction in Late Loan Rate - (Table C-4, page 9)

The rate reduction projected by the CLUSA Banking and Finance Advisor, presumes Cooperative Bank implementation and follow-up of recommended administrative reforms to improve operating efficiency and reduce loan administration costs. This implementation and follow-up is currently and will continue to be in 1973 one of the advisor's principal objectives.

How will specified inputs result in obtaining outputs of Table C?

Except for some doubts already expressed about achieving the rice yields as projected by FENACOOPARR, we consider the indicators to be realistic. We have already mentioned the difficulty in demonstrating direct cause-effect associations between inputs into the institutions and output indicators which generally are by-products of institutional efficiency, or possible other factors.

It is not possible to demonstrate the cause-effect relation at this stage, although we assume that it exists. The output indicator is only an indicator that something is transpiring which could reasonably but not necessarily be associated with improvement in federation operations.

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To address the question in more specific terms, budget support to the Federations permits them to employ the people they need to promote their programs, enroll more cooperatives, give the new cooperatives training, improve the services to cooperatives, generate more income for themselves, etc. The contribution of CLUSA advisory service as elsewhere explained will improve the institution's operations. The institutions' operations, indirectly or directly, are then reflected by changes in such indicators as suggested in Table C.

Status of Collection of Baseline Data Necessary to Measure AID Project Effect

The Federations are currently initiating base line data gathering and will establish collection and analysis systems early in the 1973 program year. These data will be available in a timely manner for project evaluation.

FECOPAM first received AID financing in the current 1972 program year. Although FENACOOPARR was legalized in 1970 a full-time CLUSA Advisor was not assigned until July, 1972. Hence the delay in organizing these systems. Meanwhile, there was no alternative but to base operations on actual 1971/72 experience and the best estimates of the federations.

A precedent exists in Ecuador involving the Credit Unions project initiated under similar conditions, i.e., best available estimates in the absence of adequate base line data, which were later developed with AID-financed CUNA guidance over a period of several years.

D. ASSISTANCE TO COOPERATIVE BANK

A full-time CLUSA-contract Banking and Finance Advisor has been provided to the Cooperative Bank beginning in September 1971 and programmed through December, 1972. Upon initiation of the advisory service the Cooperative Bank enjoyed the dubious honor of being "intervened" by the National Superintendency of Banks. It was largely through the implementation of the Contract Advisor's Work Plan for the Bank's operations that the "intervened" status was lifted in February, 1972 and in the short period of six months the COOPBANK was authorized to participate in Central Bank's discount operations, thus re-establishing the Bank's credit standing and prestige.

Beginning in January, 1973 this contract Advisor is scheduled to undertake near full-time advisory services for the National Federation of Agricultural Production and Marketing Cooperatives (FECOPAM). However, by mutual understanding with COOPBANK the Advisor will, on a limited time basis, continue to follow up on the implementation of procedures and systems instituted during the 10 month tenure. Also the USAID/'s Capital Development Office in conjunction with the Cooperatives Branch will continue to monitor Fund of Guarantees operations.

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Furthermore, with the assistance of CLUSA and USAID/Ecuador, COOPBANK will seek short-term advisory assistance for livestock and also dairy project development through the Volunteer Development Corps (VDC), the International Volunteer Executive Service Corps and other sources. In this connection CLUSA/AID together with COOPBANK will review the Bank's future needs.

E. ESTIMATES OF GOE TECHNICAL SUPPORT

Pertinent Project Agreements for 1973 and future years, as in the past, are executed for the GOE by the Minister of Social Welfare and Labor, wherein functions the National Cooperatives Directorate, thus officially confirming GOE counterpart participation. This action does not necessarily guarantee the commitment hence the project relies to some extent on the President's frequent, public pronouncements of support for an expanding cooperative movement.

The Project Agreement corresponding to CY-1973 operations contemplates the following GOE and Cooperating Agency contributions toward budgeted project operations:

FENACOOPARR		
Personnel - Direct Contribution	$18,781	
Other Costs- " "	5,447	24,228
National Rice Program		
2 half-time technicians (in kind)	4,72	
Ministry of Production		
1 full-time technician (in kind)	2,835	7,559
		$31,787
FECOPAM		
Personnel - Direct Contribution	$ 7,590	
Other Costs " "	3,745	11,335
Agrarian Reform Agency (IERAC)	9,560	
1 land reform expert		
1 economist		
1 cooperative extensionist		
Ministry of Production	10,[illegible]	
1 full-time Agricultural Engineer		20,[illegible]
		$3[illegible],[illegible]5

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FECOAC (DAPC)

Personnel - Direct Contribution	$ 3,426	
Other Costs "	2,125	5,551
Ministry of Production 9 full-time Extensionists	19,234	19,234
		$24,785
	TOTAL	$88,017

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ANNEX B to Agriculture Cooperatives [illegible]

(From FAO Information Bulletin No. 2 prepared by the FAO Fertilizer Program in Ecuador)

Parcela	Tratamientos N-P_2O_5-K_2O kg/ha	Rendimiento kg/ha	Incremento del Rendimiento kg/ha	Valor del Incremento del Rendimiento S/ha	Costo de los fertilizantes S/ha	Ganancia Neta S/ha	V/C
CHIMBORAZO N., SAN JUAN-SAN ANDRES (1 demostración) MAIZ (Maize) 1969							
T	0- 0- 0	1134	--	--	--	--	--
2	45- 0- 0	1814	680	952	425	527	2,24
3	45-45- 0	2268	1134	1588	670	918	2,37
4	45-45-22,5	3629	2495	3493	760	3733	4,60
	Nivel de fertilización dando la Ganancia Neta más alta: 45-45-22,5						
	Nivel de fertilización dando la relación Valor/Costo más alta: 45-45-22,5						
CHIMBORAZO N.; SAN JUAN-SAN ANDRES (1 demostración) MAIZ (Maize) 1969							
T	0- 0- 0	1360	--	--	--	--	--
2	45- 0- 0	1814	454	635	425	210	1,49
3	45-67,5- 0	2948	1588	2223	808	1615	2,75
4	45-67,5-22,5	4082	2722	3810	906	2904	4,20
	Nivel de fertilización dando la Ganancia Neta más alta: 45-67,3-22,5						
	Nivel de fertilización dando la relación Valor/Costo más alta: 45-67,5-22,5						
CHIMBORAZO N., GUANO (3 demostraciones) MAIZ (Maize) 1969							
T	0- 0- 0	4367	--	--	--	--	--
2	45- 0- 0	4971	604	846	425	421	1,99
3	45-67,5- 0	7862	3495	4893	670	4223	7,30
4	45-67,5-22,5	8600	4233	5926	760	5166	7,67
	Nivel de fertilización dando la Ganancia Neta más alta: 45-67,5-22,5						
	Nivel de fertilización dando la relación Valor/Costo más alta: 45-67,5-22,5						

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Parcela	Tratamientos $N-P_2O_5-K_2O$ kg/ha	Rendimiento kg/ha	Incremento del Rendimiento kg/ha	Valor del Incremento del Rendimiento S/ha	Costo de los fertilizantes S/ha	Ganancia Neta S/ha	V/C
CHIMBOTE N.; GUANO (2 demostraciones) MAIZ (Maize) 1969							
T.	0- 0- 0	3738	—	—	—	—	—
2	45- 0- 0	6151	2413	3378	425	2953	7,95
3	45-45- 0	7929	4191	5867	670	5197	8,76
4	45-45-22,5	8691	4953	6934	760	6174	9,12
Nivel de fertilización dando la Ganancia Neta más alta: 45-45-22,5							
Nivel de fertilización dando la relación Valor/Costo más alta: 45-45-22,5							
TICAPAMPA; VELILLO (2 demostraciones) MAIZ (Maize) 1970							
T	0- 0- 0	499	—	—	—	—	—
2	45-45-45	862	363	508	850	—	0,60
3	45-90-45	1134	635	889	1095	—	0,81
4	90-90-45	1475	976	1366	1520	—	0,90
Nivel de fertilización dando la relación Valor/Costo más alta: 90-90-45							
CHIMBOTE N., SAN JUAN-SAN ANDRES (2 demostraciones) TRIGO (Wheat) 1969							
T	0- 0- 0	680	—	—	—	—	—
2	45- 0- 0	1361	681	1362	425	936	3,20
3	45-67,5- 0	2495	1815	3630	808	2822	4,49
4	45-67,5-22,5	3629	2949	5898	906	4992	6,51
Nivel de fertilización dando la Ganancia Neta más alta: 45-67,5-22,5							
Nivel de fertilización dando la Relación Valor/Costo más alta: 45-67,5-22,5							

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Parcela	Tratamientos $N-P_2O_5-K_2O$ kg/ha	Rendimiento kg/ha	Incremento del Rendimiento kg/ha	Valor del Incremento del Rendimiento S/ha	Costo de los fertilizantes S/ha	Ganancia Neta S/ha	V/C
IMBABURA, IBARRA (10 demostraciones)			TRIGO (Wheat) 1970				
T	0- 0- 0	415	--	--	--	--	--
2	45- 0- 0	670	255	528	420	108	1,26
3	45-90- 0	1577	1162	2405	890	1515	2,70
4	45-90-22,5	1338	923	1911	970	941	1,97
	Nivel de fertilización dando la Ganancia Neta más alta: 45-90-0						
	Nivel de fertilización dando la relación Valor/Costo más alta: 45-90-0						
CHIMBORAZO, PELILEO (1 demostración)			TRIGO (WHEAT) 1970				
T	0- 0- 0	181	--	--	--	--	--
2	45- 0- 0	1134	953	1906	425	1481	4,48
3	45-90- 0	1270	1089	2178	915	1263	2,38
4	45-90-22,5	1360	1179	2358	1005	1353	2,35
	Nivel de fertilización dando la Ganancia Neta más alta: 45-90-22,5						
	Nivel de fertilización dando la relación Valor/Costo más alta: 45-0-0						
CHIMBORAZO N.; CAJABAMBA (9 demostraciones)			TRIGO (Wheat) 1970				
T	0- 0- 0	887	--	--	--	--	--
2	45- 0- 0	1089	202	404	425	--	0,95
3	45-90- 0	1369	482	964	915	49	1,05
4	45-90-22,5	1534	647	1294	1005	289	1,29
	Nivel de fertilización dando la Ganancia Neta más alta: 45-90-22,5						
	Nivel de fertilización dando la relación Valor/Costo más alta: 45-90-22,5						

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SUMARIO DE RESULTADOS POR ZONA

Parcela	Tratamientos N-P_2O_5-K_2O kg/ha	Rendimiento kg/ha	Incremento del Rendimiento kg/ha	Valor del Incremento del Rendimiento S/ha	Costo de los fertilizantes S/ha	Ganancia Neta S/ha	V/C
CHIMBORAZO S.; TIXAN (1 demostración)			TRIGO (Wheat) 1970				
1	0- 0- 0	4627	--	--	--	--	--
2	45- 0- 0	3810	--	--	425	--	--
3	45-90- 0	7031	2404	4808	915	3893	5,25
4	45-90-22,5	5897	1250	2500	1005	1495	2,49
	Nivel de fertilización dando la Ganancia Neta más alta: 45-90-0						
	Nivel de fertilización dando la Relación Valor/Costo más alta: 45-90-0						
IMBABURA, COTACACHI (14 demostraciones)			PAPAS (Potatoes) 1970				
1	0- 0- 0	5990	--	--	--	--	--
2	45- 0- 0	8226	2236	2280	420	1860	5,43
3	45-67,5- 0	13809	7819	7975	773	7202	10,32
4	45-67,5-22,5	20527	14537	14828	853	13975	17,38
	Nivel de fertilización dando la Ganancia Neta más alta: 45-67,5-22,5						
	Nivel de fertilización dando la Relación Valor/Costo más alta: 45-67,5-22,5						
IMBABURA, OTAVALO (5 demostraciones)			PAPAS (Potatoes) 1970				
1	0- 0- 0	4730	--	--	--	--	--
2	45-90-45	16470	11740	5870	850	5020	6,91
3	90- 90-45	13054	13324	6662	1270	5392	5,25
4	90-135-45	21423	16698	8349	1405	6944	5,94
	Nivel de fertilización dando la Ganancia Neta más alta: 45-90-45						
	Nivel de fertilización dando la Relación Valor/Costo más alta: 90-135-45						

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SUMARIO DE RESULTADOS POR ZONAS

Parcela	Tratamientos $N-P_2O_5-K_2O$ kg/ha	Rendimiento kg/ha	Incremento del Rendimiento kg/ha	Valor del Incremento del Rendimiento S/ha	Costo de los fertilizantes S/ha	Ganancia Neta S/ha	V/C
MILAGRO (21 demostraciones)			ARROZ bajo riego (Irrigated rice) 1970				
1	0-0-0	968	--	--	--	--	--
2	[illegible]-0-0	1673	[illegible]05	1833	[illegible]85	1108	1,31
3	[illegible]-45-0	[illegible]	[illegible]32	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]-45-45	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible] fertilización [illegible] la parcela [illegible] ta más alta: 45-45-45 [illegible] la relación Valor/Costo [illegible] alta: 45-45-[illegible]						
	(21 demostraciones) [illegible] bajo riego (Irrigated rice)						
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	1546	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]