

UNCLASSIFIED

**UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D. C. 20523**

ECUADOR

PROJECT PAPER

RURAL TECHNOLOGY TRANSFER SYSTEM

AMENDMENT

AID/LAC/P-055/1

**Loan Number: 518-T-041
Project Number: 518-0032**

UNCLASSIFIED

PDAAL506

(U K A F I)

AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT DATA SHEET	1. TRANSACTION CODE <input type="checkbox"/> A = Add <input checked="" type="checkbox"/> C = Change <input type="checkbox"/> D = Delete	Amendment Number 1	DOCUMENT CODE 3
2. COUNTRY/ENTITY Ecuador	3. PROJECT NUMBER 518-0032		
4. BUREAU/OFFICE LAC	5. PROJECT TITLE (maximum 40 characters) Rural Technology Transfer System		

6. PROJECT ASSISTANCE COMPLETION DATE (PACD) MM DD YY 09 30 87	7. ESTIMATED DATE OF OBLIGATION (Under 'B.' below, enter 1, 2, 3, or 4) A. Initial FY 80 B. Quarter 4 C. Final FY 85
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8. COSTS (\$000 OR EQUIVALENT \$1 =)						
A. FUNDING SOURCE	FIRST FY 80			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total						
(Grant)	(385)	(15)	(400)	(5,100)	(200)	(5,300)
(Loan)	(-)	(-)	(-)	(3,300)	(1,700)	(5,000)
Other U.S.						
1. Host Country		685	685		14,100	14,100
2. Other Donor(s)						
TOTALS	385	700	1,085	8,400	16,000	24,400

9. SCHEDULE OF AID FUNDING (\$000)									
A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) ARDN	284	968	968	2,000			5,000	5,300	5,000
(2)									
(3)									
(4)									
TOTALS									

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each) 050 012 978	11. SECONDARY PURPOSE CODE
12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each) A. Code XII R/AG B. Amount 10,300 8,300	

13. PROJECT PURPOSE (maximum 480 characters)

1. Establish a rural technology transfer system which can identify and address key rural development constraints by mobilizing technical resources, especially those of the U.S. Title XII institutions.
2. Strengthen rural sector institutions so that they will be able to serve the sector effectively.
3. Develop technologies appropriate to the needs of small farmers and the agricultural sector in general.

14. SCHEDULED EVALUATIONS Interim MM YY MM YY Final MM YY 1 0 8 2 1 0 8 3 1 2 8 7	15. SOURCE/ORIGIN OF GOODS AND SERVICES <input type="checkbox"/> 000 <input checked="" type="checkbox"/> 941 <input type="checkbox"/> Local <input type="checkbox"/> Other (Specify)
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16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a _____ page PP Amendment)

A loan add-on of \$5,000,000 is proposed. The project purposes remain unchanged. Most of the additional funding will be used to strengthen further the rural technology transfer mechanism and to expand the subproject portfolio. The scope of project activities will be broadened to include support for private sector research and development, basic research, and other activities of limited scope which contribute to project objectives.

17. APPROVED BY	Signature: <i>John A. Sanbrillo</i> Title: Director, USAID/Ecuador	Date Signed: MM DD YY 0 6 1 8 8 2	18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION MM DD YY 8 2
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PROJECT AUTHORIZATION
(Amendment No. 1)

Name of Country: Ecuador

Name of Project: Rural Technology Transfer System

Number of Project: 518-0032

Loan Number: 518-T-041

1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, the Rural Technology Transfer System project for Ecuador was authorized on July 31, 1980 (the "Authorization"). The Authorization is hereby amended by deleting the text of the Authorization in its entirety and substituting in lieu thereof the following:

"1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Rural Technology Transfer System project for Ecuador, involving planned obligations of not to exceed Five Million United States Dollars (\$5,000,000) in loan funds ("Loan") and Five Million Three Hundred Thousand United States Dollars (\$5,300,000) in grant funds ("Grant") over a five (5) year period from date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing exchange and local currency costs for the project.

2. The project ("Project") consists of, assisting Ecuador's National Council for Science and Technology (CONACYT) expand its Rural Technology Transfer System (RTTS) and finance a series of subprojects and activities designed to improve Ecuadorean agricultural research, education and extension programs.

3. The Project Agreements, which may be negotiated and executed by the officer to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority, shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate:

a. Interest Rate and Terms of Repayment (Loan)

The COE shall repay the loan to A.I.D. in U.S. Dollars within twenty-five (25) years from the date of first disbursement of the loan, including a grace period of not to exceed ten (10) years. The COE shall pay to A.I.D. in U.S. Dollars interest from the date of first disbursement of the loan at the rate of (i) two percent (2%) per annum during the first ten (10) years, and (ii) three percent (3%) thereafter, on the outstanding disbursed balance of the loan and on any due and unpaid interest accrued thereon.

b. Source and Origin of Goods and Services (Loan)

Goods and services, except for ocean shipping, financed by A.I.D. under the Loan shall have their source and origin in Ecuador or in countries included in A.I.D. Geographic Code 941, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the Loan shall be financed only on flag vessels of Ecuador or countries included in A.I.D. Geographic Code 941, except as A.I.D. may otherwise agree in writing.

c. Source and Origin of Goods and Services (Grant)

Goods and services, except for ocean shipping, financed by A.I.D. under the Grant shall have their source and origin in the United States or in Ecuador, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the Grant shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States.

d. Condition Precedent to Initial Disbursement (Grant)

Prior to any disbursement, or the issuance of any commitment documents under the Project Grant Agreement, the COE shall, except as A.I.D. may otherwise agree in writing:

- (1) formally establish the RITS as a part of the National Council for Science and Technology ("CONACYT"), with a chief operating officer of the RITS named and on board; and
- (2) cause the RITS to be staffed with an adequate number of project specialists in addition to the chief operating officer and to have office space, equipment, and necessary support personnel, all satisfactory to A.I.D.

e. Condition Precedent to Disbursement for RITS Subprojects (Grant)

Prior to any disbursement, or the issuance of any commitment documents under the Project Grant Agreement, for RITS activities, CONACYT shall, except as A.I.D. may otherwise agree in writing, furnish, in form and substance satisfactory to A.I.D., its approved subproject selection procedures, including selection criteria.

f. Condition Precedent to Disbursement for Subprojects Under the Small Subprojects Account and the Private Sector Research & Development Account (Loan)

Prior to any disbursement under the Loan, or the issuance by A.I.D. of documentation pursuant to which disbursement will be made, to finance any subproject under the Small Subprojects Account and the Private Sector Research & Development Account, the COE shall, except as the Parties may otherwise agree in writing, furnish, in form and substance satisfactory to A.I.D., the approved selection criteria and operating procedures for the Small Subprojects Account and for the Private Sector Research & Development Account

g. Condition Precedent to Disbursement for New Subprojects in Calendar Year 1983 Other Than Small Subprojects Account and Private Sector Research & Development Account Subprojects (Loan and Grant)

Prior to any disbursement, or the issuance of any commitment documents under the Loan to finance any new subprojects approved by CONACYT in Calendar Year 1983, other than Small Subprojects Account and Private Sector Research and Development Account subprojects, the CONACYT shall, except as the Parties may otherwise agree in writing, furnish, in form and substance satisfactory to A.I.D., evidence that CONACYT has issued a set of priorities consistent with national development goals, for use in ranking subprojects to be funded under the Project.

h. Recurring Conditions Precedent to Disbursement for Subprojects (Loan and Grant)

(1) Prior to any disbursement under the Loan, or the issuance by A.I.D. of documentation pursuant to which disbursement will be made, to finance any subproject other than subprojects funded under the Small Subprojects Account and the Private Sector Research & Development Account, the GOE shall, except as the Parties may otherwise agree in writing, furnish, in form and in substance satisfactory to A.I.D., evidence that CONACYT has for each subproject: a detailed description of the subproject, a technical, economic, social and, where appropriate environmental analysis, an implementation plan and a financial plan.

(2) Prior to any disbursement under the Loan, or the issuance by A.I.D. of documentation pursuant to which disbursement will be made, to finance any subproject under the Small Subprojects Account and the Private Sector Research & Development Account, the GOE shall, except as the Parties may otherwise agree in writing, furnish, in form and substance satisfactory to A.I.D., evidence that CONACYT has a description of the subproject, including the specific objectives and their relevance to the principal objectives of the Project, an implementation plan and a budget.

i. Covenants

The GOE shall covenant and agree that, unless AID otherwise agrees in writing:

- (1) it will make available for Project activities, annual funds of amounts jointly agreed upon by A.I.D. through a science and technology budget item or through a fund for the National Council for Science and Technology ("CONACYT").
- (2) it will provide the Rural Development Division of CONACYT with a staff of seven professionals by January 1, 1983, one additional professional staff member by September 30, 1983, and a minimum staffing level of eight professionals through the remaining life of the Project.

- (3) it will provide to A.I.D. in form and substance satisfactory to A.I.D., by February 15th of each calendar year of the Project, an implementation plan for that year which will include a list of anticipated subprojects and other activities to be funded, an estimated budget for all subprojects and activities and other anticipated local cost items.
- (4) A.I.D. will have the right to approve any subproject, training activity, technical assistance personnel, or other Project component to be financed with A.I.D. funds."

2. Except as expressly modified or amended hereby, the Authorization remains in full force and effect.


John A. Sanbrailo
Mission Director
USAID/Ecuador

June 24, 1982
Date

Clearances:

RDO: VCusumano (in draft)
O/DP: FMaldonado (substance)
O/CON: RMcClure RM
O/CAP: RJordan (in draft)
GDO: LGarza LG
EXO: JThrower JT
A/DIR: PFritz PF

Drafted by: RLA: DAVlams:
6/15/82

5

RURAL TECHNOLOGY TRANSFER SYSTEM
(Title XII)

518-0032

Project Paper Amendment

	<u>Page</u>
SUMMARY AND RECOMMENDATION	i
I. BACKGROUND AND PROBLEM STATEMENT	
A. Introduction	1
B. Purpose of the Project Paper Amendment	2
C. Problems and Constraints of the Rural Sector	3
1. Problems	3
2. The Reasons and the Constraints.	4
a. Institutional Constraints.	5
b. Technological Constraints.	7
D. The RTIS as a Response	8
II. PROGRESS TOWARDS MEETING PROJECT OBJECTIVES	
A. Towards Institutionalization of the RTIS	10
B. Towards Coordinating and Strengthening Research, Education, Extension (REE) Activities.	11
C. Towards Developing Technologies which are Appropriate to Small Farmers.	12
D. Implementation Concerns.	12
1. Demand for Subprojects Exceeds Funding Supply.	12
2. Need to Establish Science and Technology Priorities.	14
3. Administration and Professional Staff.	14
III. DETAILED DESCRIPTION OF THE AMENDED PROJECT	
A. Objective and Rationale of Project Amendment	17
B. Project Elements	17
1. Institutionalization of RTIS Within CONACYT.	17
a. Technical Assistance	17
b. Project Development and Support.	18
c. Training of CONACYT Personnel.	18
d. Equipment/Materials/Vehicles	19
e. Hiring of Local Project Specialist	19
f. Other RTIS/CONACYT Activities.	19
1) Private Sector Research and Development.	19
2) Small Subprojects.	20

2.	Subproject Portfolio	23
a.	Conceptual Role of the Subproject Portfolio	23
b.	Subproject Portfolio Description	23
C.	Financial Analysis and Plan	33
1.	Summary Financial Data	33
2.	Disbursement and Obligation Schedule	35
3.	Institutionalization of Financing	38
a.	Recurring Costs	38
b.	GOE Support for RTIS Activities	39
c.	Other Sources of RTIS Funding	40
d.	Supplemental Subproject Funding	40
4.	Conclusion	40
D.	Institutional Analysis	40
1.	Background	40
2.	Ecuador's Science and Technology System	41
3.	CONACYT's Organizational Structure	43
4.	The RTIS Project and CONACYT	43
IV.	IMPLEMENTATION AND EVALUATION	
A.	Revised Implementation Schedule	48
B.	Subproject Formulation, Evaluation, and Selection	49
C.	Subproject Implementation and Monitoring	52
D.	Contracting	52
E.	Evaluation	54
F.	Conditions and Covenants	55

ANNEXES

- A. GOE Letter of Application
- B. AID/W Cable
- C. Logical Framework
- D. Statutory Checklist
- E. Subproject Summaries

Ongoing Subprojects

- 1. Soil and Water Conservation and Management (COMSA) 1
- 2. Small Farmer Adaptive Research and Development (IDAPA) 5
- 3. Study of Agrarian Structure in Ecuador 8
- 4. Bean Research CRSP 10

Subprojects Approved at the Profile Level

- 1. University of Machala Research and Dissemination 12
- 2. Post-Harvest Food Technologies (PITALPRO) 14
- 3. Agricultural Policy and Statistics 16
- 4. Agricultural Training for Rural Youth. 19

Subprojects Proposed in the Project Paper But Not Yet

Approved by CONACYT

- 1. Catholic University of Guayaquil Animal Science Program. 22
- 2. Soybean Production and Utilization 25

Proposed New Subprojects

- 1. Soil Conservation Service. 27
- 2. Highland Vegetable Crops 31
- 3. Deciduous and Subtropical Fruit Crops. 34
- 4. Integrated Insect Pest Management. 37
- 5. Extension Systems for Small Farm Families. 40
- 6. Appropriate Technology Development 42
- 7. Irrigation Support 44
- 8. Fisheries and Aquaculture. 47
- 9. Cereals Program. 49
- 10. Technology Transfer for Small Fishermen 52
- 11. Agricultural School Feasibility Study 54
- 12. Natural Resources Planning and Management 56

- F. Subproject Application Form
- G. Statutory Basis for CONACYT
- H. Cable.....
- I. Equipment List for CONACYT

LIST OF TABLES

Table 1.	Comparison of RTTS Funding Requirements and AID Resources.	13
Table 2.	Assistance for the Institutionalization of the RTTS within CONACYT	22
Table 3.	Summary Description of the Subproject Portfolio . .	27
Table 4.	Financial Summary of Ongoing and Proposed Activities of the RTTS	34
Table 5.	Disbursement and Obligation Schedule for RTTS Project Activities.	36
	Detailed Subproject Budgets	Annex E

LIST OF FIGURES

Figure 1.	Conceptual Model of RTTS.	24
Figure 2.	Ecuador's Science and Technology System	42
Figure 3.	CONACYT's Administrative Structure.	44
Figure 4.	The RTTS within CONACYT	46
Figure 5.	Schematic of Subproject Formulation, Evaluation, and Selection Process.	53

COMMON ACRONYMS

BNF	National Development Bank
CATER	Andean Center for Rural Technology
CEDEGE	Studies Commission for the Development of the Guayas Basin
CONACYT	National Science and Technology Council
CONADE	National Development Council
CREA	Center for the Economic Rehabilitation of Azuay, Cañar, and Morona Santiago
CRM	Center for the Rehabilitation of Manabí
CUG	Catholic University of Guayaquil
ENAC	National Agricultural Storage and Marketing Organization
FODERUMA	Development Fund for the Rural Marginal Sector
GOE	Government of Ecuador
IERAC	Ecuadorean Institute for Agrarian Reform and Colonization
INCRAE	National Institute for the Colonization of the Ecuadorean Amazon Region
INEC	National Statistics and Census Institute
INERHI	Ecuadorean Water Resources Institute
INIAP	National Agricultural Research Institute
INP	National Fisheries Institute
LTC	Land Tenure Center, University of Wisconsin
MAG	Ministry of Agriculture and Livestock
PREDESUR	Regional Program for the Development of Southern Ecuador
PRONACOS	National Soil Conservation Program
RDD	Rural Development Division of CONACYT
RTTS	Rural Technology Transfer System
SEDRI	Secretariat for Integrated Rural Development
UTA	Technical University of Ambato
UTM	Technical University of Machala

SUMMARY AND RECOMMENDATION

A. Introduction

This Project Paper Amendment is a proposal for a loan add-on to Project 518-0032. The reader should review both the Grant Project Paper (AID/LAC/P-55) and the loan proposal contained herein to gain a comprehensive understanding of the entire Rural Technology Transfer System (Title XII) Project. This Project Paper Amendment provides the rationale for the loan add-on, presents a status report on the Rural Technology Transfer System (RTTS) being established in the National Science and Technology Council of the Government of Ecuador (GOE), and summarizes changes that have occurred in the project during the period 1980-1982. The loan add-on is based on a detailed evaluation of the RTTS Project that was conducted by the Deputy Director of the Board for International Food and Agricultural Development (BIFAD) in November 1981 when the Project Identification Document (PID) for the loan add-on was prepared. The PID was approved by AID/W in State 004713 dated January 8, 1982 and the LAC Bureau delegated to USAID/Ecuador authority to approve the Project Paper Amendment in the field.

B. Background

The Rural Technology Transfer System Project was authorized on July 31, 1980 and signed on August 27, 1980. This five-year, \$5.3 million grant-funded project has been a key component of the USAID program undertaken to support the development goals of the new civilian government which took office in August 1979. These goals, as mapped out in the GOE's five-year National Development Plan, have closely coincided with AID's own focus on increasing agricultural production and assisting the rural poor. In an effort to make the best use of its limited resources, USAID has selected an institution building and technology transfer strategy. This strategy recognizes that the objectives of the National Development Plan cannot be achieved and sustained without addressing the fundamental institutional and technological weaknesses in the Ecuadorean agricultural sector.

As a part of this strategy, the Rural Technology Transfer System Project seeks to develop and disseminate technologies appropriate to small farmers by strengthening agricultural research, education, and extension (REE) programs. To ensure continued institutional support for these objectives, a rural technology transfer system (RTTS) is being established within the GOE. The functions of this system are to identify major rural development problems - both institutional and technological in nature - and to marshal the financial resources and technical expertise to solve them. These resources are channeled through a series of subprojects carried out by rural development agencies. The subprojects address institutional constraints by providing technical assistance and training to the personnel of the implementing agencies, and by achieving greater coordination of the REE activities of these agencies. Technological constraints are addressed through support for research, development, and dissemination of technologies to increase the productivity of small farmers; assistance is also provided to improve techniques of policy analysis and planning in key agricultural areas.

An important role in the institutionalization of the RITS is played by the Title XII university system. The lead university provides long-term assistance to the RITS personnel to build their capacity to select, develop, finance, and monitor subprojects that are consistent with the rural development priorities of Ecuador. The lead university advisors may also call upon short-term technical advisors from the range of Title XII universities to assist in the development, selection, and implementation of particular subprojects. In this way, a relationship is being forged between the RITS and the Title XII universities that will ensure a continuing stream of technology transfer to the rural sector of Ecuador.

The grant project provides \$1,000,000 for the institutionalization of the RITS. The remaining \$4,300,000 constitutes an initial source of funding for subprojects approved by the RITS.

After less than two years, the RITS model is swiftly evolving into reality. The institutionalization of the RITS was given a major boost when, shortly after the signing of the Project Agreement, the GOE created the National Science and Technology Council (CONACYT). The original intent had been to place the RITS within a new Rural Development Secretariat (RDS). The RDS was to provide planning, coordination, and financing to carry out the GOE's integrated rural development strategy as well as other new rural development activities. However, a subsequent GOE policy change narrowed the focus of the RDS to the 17 integrated rural development (IRD) projects included in the National Development Plan (see Quito 5550 attached as Annex H for further details). Thus, the RDS became the Integrated Rural Development Secretariat (SEDRI).

The GOE decided that SEDRI would not provide the most appropriate institutional framework for the RITS. First, the RITS Project involves assistance to activities both inside and outside the IRD areas and is designed with a broader focus on problems of the entire agricultural sector. Second, SEDRI does not have expertise in technology transfer mechanisms or in science and technology development. By comparison, CONACYT - an entity of the National Planning Council (CONADE) - was created with the express purpose of formulating a national policy for science and technology, facilitating international technology transfer to Ecuador, and promoting research, development, and dissemination of technology with special emphasis on the problems of the Ecuadorian rural sector. Thus, the GOE and USAID agreed that CONACYT, with its broader geographic and functional mandate, provided a more appropriate planning, coordination, and financing mechanism for the RITS Project. The placement of the RITS within the newly established CONACYT ensures that the RITS activities will receive high-level support and will be part of a coordinated attack on the technological constraints of the Ecuadorian rural sector.

The RITS Project in turn benefits CONACYT by providing funds and an immediate program of action which are helping CONACYT to define and establish its science and technology role. The technical assistance provided by the University of Florida and the experience gained in project design, selection, and monitoring are applicable to CONACYT's operations across all sectors.

Through the RITS, CONACYT is also evolving into a major GOE instrument for strengthening agricultural REE agencies within a broader science and technology policy framework. The GOE's intention to create a special fund for CONACYT's activities in 1983 is evidence of the status which this institution has acquired over the past two years.

With the assistance of the University of Florida, the RITS Project has made good progress. Three major subprojects with RITS funding requirements of over \$2.5 million have been developed, evaluated, and approved by CONACYT and are now being implemented under its supervision. The demand for RITS funding which was initially estimated at \$4.3 million has burgeoned to more than \$16 million. Eighteen new proposals are now before CONACYT, in addition to a proposed expansion of a subproject that is already being successfully implemented. Furthermore, a number of proposals have been submitted for basic research and other activities that are not now eligible for RITS funding but which could contribute significantly to the improved application of science and technology to rural development problems.

C. Justification for the Project Paper Amendment

The exceptionally strong response to the RITS was not foreseen in the design of the original grant project. As a result, USAID is proposing a \$5 million loan add-on and a two-year extension of the project to ensure continuing progress toward achievement of project objectives. The institutionalization of the RITS within CONACYT will be supported through increased technical assistance and training of an expanded staff that will allow CONACYT to respond more effectively to demands for subproject development, coordination, and financing. The capacity of Ecuadorean REE institutions to develop and disseminate technologies which increase agricultural production and rural incomes will be promoted through expanded support for ongoing and new subprojects which have been proposed in a number of high priority areas. The additional resources will also free up grant funds for increased technical assistance to CONACYT and to the various REE institutions while providing loan funding for training and for the procurement of badly needed laboratory and field equipment for research and development activities.

D. Project Amendment Description

The objectives, rationale, and basic model described in the original Project Paper remain unchanged. The main difference involves the substitution of CONACYT for the Rural Development Secretariat (RDS) as the institutional home for the RITS. The proposed loan add-on will further strengthen the capacity of CONACYT to manage the RITS, slightly broaden the scope of RITS activities, and increase the number of funded subprojects.

The strengthening of CONACYT will be achieved by various means. First, the two long-term technical advisors will be supplemented by ten person-months of short-term technical assistance, principally from the University of Florida and other Title XII universities, to help CONACYT manage the heavy demand for subproject development, funding, and monitoring. Second, AID will provide funding for short-term specialized technical assistance for subproject design and evaluation in cases where CONACYT and the participating institutions lack the necessary expertise. These resources will also allow CONACYT to take the initiative in developing subprojects in priority areas which have not been addressed by submitted proposals. Third, the CONACYT staff directly responsible for the RTIS will be expanded from two to eight. CONACYT will hire five professionals by the beginning of CY 1983. AID will finance the hiring of another professional whose salary will be assumed by CONACYT approximately one year later. Fourth, the expanded RTIS staff will receive formal in addition to on-the-job training to ensure that the RTIS mechanism continues to function successfully after the technical advisors depart. Fifth, loan funds will finance utility vehicles and office equipment for the RTIS staff and advisors. Under the revised financial plan, a total of \$2 million will be available to CONACYT for institutionalization of the RTIS, double the amount budgeted under the original grant.

The scope of RTIS activities will be broadened through the creation of two special loan-funded accounts. One account of \$300,000 will provide risk capital to private agribusinesses for the research and development of processing and marketing technologies that will help commercialize small farmer production. A second account of \$200,000 will support small subprojects (up to \$20,000 each) which address specific research, education, or extension needs through short courses, seminars, studies, short-term technical assistance, etc. These funds will also support basic research which has not been carried out elsewhere on specific problems affecting rural development in Ecuador.

Finally, the loan add-on will provide an infusion of resources a time when the RTIS faces rapidly growing demands for subproject funding. In addition to the subprojects described in the original Project Paper but not yet fully approved, new proposals have been received in a variety of priority areas including: a national soil conservation service, promotion of fruit and vegetable crops, integrated insect pest management, and on-farm irrigation assistance. The additional loan funds will not be sufficient to finance all of the current proposals. But they will enable CONACYT to expand its RTIS portfolio, thus strengthening its subproject management capacity and building support for the RTIS. Under the revised financial plan, total AID funding for subprojects will increase from \$4.3 million to \$7.8 million.

E. Implementation Agencies and Summary Financial Data

The decision to locate the RTIS within CONACYT has altered somewhat the implementation structure described in the original Project Paper. CONACYT is an organ of CONADE. The president of CONADE, who is the Vice President of Ecuador, heads the Council for Science and Technology. This Council is the policy-making body for CONACYT and includes representatives from the

Ministries of Education and Industry, Commerce, and Integration, as well as from universities and research units. Its main function in relation to the RTIS is the formulation of a national policy for science and technology which is consistent with the National Development Plan. This policy identifies priorities for REE activities which will guide subproject selection.

The Technical Committee for Rural Development/Agriculture is the advisory unit of CONACYT with members from various GOE rural development agencies. It screens preliminary subproject proposals to ensure that they conform to the established science and technology priorities.

Implementation of the RTIS is the immediate responsibility of CONACYT's Rural Development Division (RDD), one of three technical divisions within CONACYT. When fully staffed, this division will consist of a director, two chiefs for research/evaluation and project design/development, and five project specialists. The University of Florida advisors will continue to work closely with RDD and other CONACYT personnel over the next three years.

The RDD personnel and the Title XII advisors assist participating institutions in developing subproject proposals which have received initial approval from CONACYT. When a proposal is in final form, recommendations are made by the RDD, the University of Florida advisors, and USAID to the Executive Director of CONACYT for final approval. A contract is then entered into by the participating institution and CONACYT for RTIS funding.

The subprojects are implemented by the participating institutions. CONACYT, the University of Florida advisors, and USAID monitor the subprojects through quarterly reports, meetings, and trips to subproject sites. The University of Florida plays a key implementation role by arranging for technical assistance and training for the subprojects through a task order mechanism which makes services available from Florida and the Title XII system as a whole, and from other appropriate public and private sources. Through this CONACYT mechanism, it is expected that long-term technology transfer linkages will be developed between Ecuadorean agricultural REE agencies and these U.S. institutions.

Subproject proposals presented in this Amendment are illustrative of the types of activities CONACYT will fund through the RTIS. CONACYT functions as an intermediate financing mechanism for Ecuadorean universities and other agricultural REE agencies such as MAG, INERHI, IERAC, and INIAP. This mechanism operates like a rural technology development bank; it receives subproject proposals from a wide array of rural development agencies; evaluates each proposal in light of GOE priorities and technical and financial feasibility; approves funding; assists with subproject procurement, particularly of foreign technical assistance and training from U.S. Title XII universities; and monitors and evaluates subproject implementation. Providing CONACYT with maximum flexibility in the selection and funding of subprojects is a fundamental element of USAID's strategy of promoting the institutional development of CONACYT and its RTIS mechanism.

A summary financial plan is presented below. A potential universe of subprojects has been developed with funding requirements that greatly exceed total AID project resources (see Table 1).

Summary Financial Data
(\$ 000's)

<u>Activity</u>	<u>AID(RITS) Funding</u>			<u>Host Country</u>
	<u>Loan</u>	<u>Grant</u>	<u>Total</u>	
CONACYT institutional development (including special accounts)	788	1,712	2,500	1,365
Ongoing subprojects	935	1,636	2,571	4,916
New subprojects to be funded under project	3,277	1,952	5,229	7,042
PROJECT TOTAL	5,000	5,300	10,300	13,323
Current estimated subproject requirements not funded under project	5,000	3,340	8,340	6,606
TOTAL REQUIREMENTS	10,000	8,640	18,640	19,929

In addition to the counterpart funding provided by CONACYT and participating institutions, as shown above, it is expected that the GOE will make available for RITS program activities no less than \$800,000 during the life of the project. This funding, to be channeled to CONACYT either through the current science and technology budget item or a special science and technology fund to be created in the future, will be used to finance local costs of subprojects for which the participating institutions do not have sufficient funds, or the local costs of other subprojects.

F. Project Development Personnel

The following persons were responsible for design and drafting of the Project Paper Amendment:

Dr. Vincent Quamano, Agricultural & Rural Development Officer,
USAID/Ecuador
Randall Roemer, Finance Officer, IAC/DR

The following GOE personnel played important roles in the development of the Project Amendment:

Econ. Angel Matovello, CONACYT
Econ. Fabén Salazar, CONACYT
Econ. Alfredo Escalde, CONACYT
Ing. Oscar Aguirre, CONACYT

Ing. Franklin Arboleda, CONACYT
Ing. Enrique Suárez, MAG
Ing. Oswaldo Guevara, MAG
Ing. Gonzalo Chacón, MAG
Ing. Jorge Ibarra, MAG
Ing. Fausto Rivera, INIAP
Dr. Francisco Muñoz, INIAP
Econ. Guillermo Otañez, INEC
Capt. (Rt.) Francisco García, Ministry of Natural Resources
Dr. Santiago Carrasco, Fundación Eugenio Espejo
Ing. Carlos Molina, 4-F Foundation
Ing. Francisco López, 4-F Foundation
Ing. Angel Saltos, University of Ambato
Ing. Jorge Valarezo, University of Machala

The following outside consultants also assisted in the design of the Project:

Dr. Kamal Dow, University of Florida
Ing. Rómulo Soliz, University of Florida
Dr. W.W. MacPherson, University of Florida
Dr. Kary Mathis, University of Florida
Dr. Clyde Kiber, University of Florida
Dr. William Wilbank, University of Florida
Dr. Keith Andrews, University of Florida
Dr. Donald Sweat, University of Florida
Dr. Samuel R. Daines, University of Florida
Dr. Carlton Infanger, University of Florida
Dr. E. Glass, Cornell University
Dr. L. Hiller, IADS, Rockefeller Foundation
Dr. Samuel Camacho, IADS, Rockefeller Foundation
Ing. Fausto Cevallos, University of Florida
Ing. Gualberto Merino, University of Florida
Dr. Edgardo Moscardi, CIMMYT
Dr. Jesse Dubin, CIMMYT

The Project Amendment was reviewed and approved by a USAID Project Committee composed of the following:

Patricio Maldonado, Program Officer
Carlos Izuriaga, Program Economist
Paul Fritz, Project Design and Implementation Officer
Robert Jordan, Capital Projects Development Officer
Leopoldo Garza, General Development Officer
Fausto Maldonado, Agricultural Specialist
Richard McClure, Controller
Jack Thrower, Executive Officer

The Project Amendment was reviewed and approved by:

John A. Sanbrailo, USAID/Ecuador Mission Director
Angel M. Diaz, USAID/Ecuador Assistant Mission Director
Annette Adams, AID Regional Legal Advisor

G. Recommendation

The Project Amendment proposed herein was developed by a team of professionals from CONACYT, Ecuadorean agricultural research, education, and extension agencies, USAID, AID/W, Title XII universities, and other sources. The basic design of the RTTS system is unchanged from the original Project Paper (518-0032). However, based on experience to date, elements have been added to expand the type of activity financed by the RTTS. A large number of subprojects have been identified for potential funding by CONACYT. Plans and cost estimates have been reviewed for all of these proposed subprojects. Several of the proposals are sufficiently developed for final review while others will require some additional design work. The Project Amendment and the subprojects were reviewed by the USAID Project Review Committee. Both the design team and the Project Review Committee conclude that the Project Amendment is technically, economically, socially, administratively, environmentally, and financially sound, and recommend that the Project Amendment be approved by the USAID Mission Director and that an AID add-on loan of US\$5.0 million be authorized.

RURAL TECHNOLOGY TRANSFER SYSTEM

PROJECT PAPER AMENDMENT

I. BACKGROUND AND PROBLEM STATEMENT

A. Introduction

After almost a decade of stagnating agricultural productivity, declining per capita food production, and an ever widening gap in the traditional dualism between urban and rural Ecuador, the democratic Government of Ecuador (GOE) is promoting institutional and policy reforms designed to address the problems of the rural sector. The GOE is aware that failure to take action will lead to continued food deficits, foreign exchange will need to be diverted from capital formation to food imports, and rural incomes will continue to fall behind the rest of the economy.

Several causes have been associated with the state of Ecuador's agricultural sector. The unequal distribution of assets among the rural population, the lack of credit, inefficient markets both at the output and input levels, lack of technological progress, and institutional weakness have been cited as critical development obstacles to overcome if the GOE is to improve productivity, increase food production, and achieve its stated goal of growth with equity.

In recognition of these problems and in support of the GOE's program to overcome these development bottlenecks, USAID/Ecuador, in cooperation with the GOE, has developed a loan/grant development package which includes such activities as intensification of agriculture, campesino organization and training activities, low cost rural health delivery, and technological development and dissemination. A Forestry Development Project is also being prepared for authorization in FY 1982. In all these activities the strategy is to focus on institution building with field level demonstrations that contribute to improving GOE capacity to identify and carry out sound rural development programs that increase production and income leading to improved quality of life in rural areas.

A paramount component of this effort is the \$5.3 million grant project 518-0032 "Rural Technology Transfer System (RTTS)", authorized in FY 1980. This project is designed to address two of Ecuador's most critical development constraints: lack of technological progress and institutional weakness among those agencies responsible for the delivery of agricultural research, education, and extension services. More specifically, this project is being implemented under the Title XII amendment of the Foreign Assistance Act and includes:

- assisting the GOE in the establishment of a rural technology transfer system with the capacity of mobilizing resources to address technological and institutional constraints in the rural/agricultural sector;

- strengthening the institutional linkages among the Ecuadorean agricultural/rural development agencies responsible for agricultural/rural development research, education and extension; and
- improving the Ecuadorean agricultural/rural development institutional capacity to develop, adapt, and disseminate technologies for agricultural improvement, particularly among small commercial farmers.

The approved project provides up to \$1.0 million towards the establishment of a functioning rural technology transfer system in the National Science and Technology Council (CONACYT) and up to \$4.3 million to finance subprojects for the development and dissemination of appropriate technologies. These subprojects will also improve linkages among agricultural REE institutions. CONACYT works with GOE institutions such as MAG, INIAP, INERHI, IERAC, BNF, and Ecuadorean universities to: (1) define rural development problems; (2) design technical cooperation/training subprojects to address such problems; (3) arrange for financing of subprojects; (4) locate appropriate sources of internal and external expertise to assist in carrying out subprojects; and (5) coordinate and evaluate subproject implementation.

Since the GOE/AID Project Agreement was signed on August 27, 1980, all conditions precedent to disbursement have been met and project implementation is proceeding extremely well. Key implementation benchmarks which have already been met include the legal creation of CONACYT, the development of the project's operational criteria and implementation plan, and the initiation of three major subprojects. The lead Title XII institution (the University of Florida) was contracted in June 1981.

Under the project, CONACYT is currently utilizing technical resources from the University of Florida, USDA, the Soil Conservation Service, the University of Wisconsin's Land Tenure Center, Cornell University, and other Title XII institutions. Several other new subprojects are presently being developed to address critical development bottlenecks which will involve other Title XII centers of agricultural/rural development expertise. Thus after only a short period of project implementation, the technology transfer mechanism envisioned in the Project Paper is already beginning to emerge.

B. Purpose of the Project Paper Amendment

The financial analysis (Section III.C.) demonstrates that the demand expressed by rural development institutions for project resources greatly exceeds the projections made in the original Project Paper. The primary purpose of the Project Paper Amendment is to present a justification for increasing the flow of AID financial resources to the rural technology transfer activities. Special attention is given to the progress of the project since the Agreement was signed. In addition, a detailed description of the modified project and all of its elements is provided, including specific cost information on all approved and proposed subprojects currently before CONACYT. A revised financial plan is presented, and proposed adjustments in the operational characteristics and implementation arrangements of the project are discussed and fully justified in terms of improved project management.

With an expanded financial base, CONACYT will be better able to respond as an effective promoter, coordinator, and evaluator of science and technology as it relates to Ecuador's rural sector development. Equally important is the fact that an expanded RIMS Project will permit USAID and CONACYT to enter into new initiatives such as private sector research and development, on-farm irrigation assistance, fruits and vegetables improvement, integrated pest management, and extension service development. An expanded RIMS Project will also enable a more intensive strengthening of Ecuador's rural sector research, education, and extension (REE) institutions for a more efficient, integrated, and appropriate mix of services which will increase food production, incomes, and welfare.

C. Problems and Constraints of the Rural Sector

Although the RIMS Project is beginning to address some of the key development bottlenecks of Ecuador's rural sector, the problems and constraints analyzed in the Project Paper remain unchanged.

1. Problems

Agricultural stagnation and rural poverty continue to prevail. Over 75 percent of Ecuador's estimated 834,000 rural households own or work land under some sort of permanent arrangement. Approximately 28 percent of these "landed" families work less than one hectare and another 39 percent have from one to five hectares. This means that 67 percent of all farms comprise only 6.7 percent of the country's agricultural land, in contrast to the 6.5 percent of farms with 50 hectares or more controlling 66 percent of all farm lands. Moreover, the farms of five hectares or less are located primarily on marginal lands of poor fertility and unstable soil. Consequently, almost all small farm families have to supplement their farm income with off-farm employment.

These small farmers utilize the technology of their ancestors. Few have access to, or understand utilization of, improved seeds, fertilizers, and pesticides; where access to these inputs exists misuse and overuse occur. The age-old agricultural methods employed are appropriate to an area of abundant land. In the past, a small farmer could simply move on to another plot when he had exhausted the capacity of his land, thus allowing the exhausted land to recover and the farmer to remain productive. Currently, however, the land to which the farmer moves is even poorer than the land he is presently working. It is often on slopes of steep grade and subject to rapid erosion once the native vegetation is cleared.

At the macro level, the small gains made in the production of food are offset by population growth. An analysis made by the World Bank indicates that while population growth reached 3.5 percent during the 1970s, food production increased by only 2.3 percent resulting in a major food deficit and the need to import more food. Agricultural commodity imports rose to \$271 million in 1980 compared to only \$13 million in 1972. Moreover, Ecuadorian earnings from petroleum are expected to drop drastically in the remainder of the 1980s and projections indicate that the country could be a net importer of petroleum by the end of this decade.

Ecuador's ability to earn foreign exchange from its traditional export crops is deteriorating. In 1969, cacao, bananas, coffee, and sugar accounted for more than 70 percent of total exports; currently, this percentage has declined to less than 50 percent. Although this is partly due to the relative increase in petroleum and other exports, it must be emphasized that in terms of volume Ecuador is exporting increasingly fewer agricultural commodities.

The general deteriorating state of agriculture is reflected in the prevalence of rural unemployment. The present level of production could be maintained with only 50 percent of the economically active rural population. Redundancy in the rural labor force has transferred the problems of the rural poor to the cities.

These conditions are also manifested in the utilization of Ecuador's renewable natural resources. The cycle of poverty in which most rural inhabitants live has set in motion a process of environmental degradation. Deforestation, soil erosion, desertification, and other environmental problems are found throughout rural Ecuador. According to a report made for USAID by Chemonics Industries in November 1979, arid land in Ecuador has increased by 31.5 percent in the past 25 years. Of 134,000 km² of land in the coastal and precordillera region, 10,000 km² are now classified as arid. The Chemonics report also estimates a progressive rate of desertification of approximately 5,000 hectares per year. Soil loss has been estimated at 100 tons per hectare per year on small farm plots in the Central Sierra.

2. The Reasons and the Constraints

Like the problems themselves, the causes are complex and interrelated. One of the most critical reasons for Ecuador's rural poverty and agricultural stagnation is a series of policies which serve as disincentives to agricultural investment and production. These include the traditional policies of import substitution and subsidized food prices found in many Latin American countries that favor the urban-industrial sector.* A second reason is the heavy concentration of land ownership and the resulting inefficient use of land. Most of the best land is held in large units and is underutilized, while the sloping marginal lands are generally used by small farmers to produce the country's food crops. Yet some 50 percent of the country's basic food crops are produced on farms of ten hectares or less. A third reason is the relatively small amount of resources that has been dedicated to agricultural development and the inability of the ODE's institutional system to deliver such resources to small farmers and the rural poor on a coordinated, continuing, and timely basis. A fourth reason is a complex and seemingly inefficient marketing system which makes it difficult for small

It should be pointed out that the Hurtado Administration has recognized the need to revise its food pricing policies. Price increases in the 25-40 percent range have been authorized in the case of sugar and rice. These measures touched off a series of strikes and public demonstrations, but the ODE has been firm in its decision to increase prices to a level which reflects real production costs.

farmers to receive an equitable share of the retail or export price for most crops. A fifth reason is the inability of Ecuadorean institutions to develop and diffuse technology which is appropriate for small farm commercial agriculture.

Two constraints - weak institutions and inadequate technologies - particularly hinder the GOE in dealing with the problems of its rural sector. Each of these is discussed separately as follows:

a. Institutional Constraints

Several characteristics hinder the ability of GOE rural development institutions to serve the sector effectively. These characteristics include:

- dispersion of functions with little coordination;
- institutional orientations which tend to favor large farmers;
- a weak human resource base;
- ineffective management and delivery systems;
- lack of adequate statistics and analyses for purposes of planning and policy formulation

The first weakness manifests itself through overlapping functions, institutional rivalries, and little coordination. There is a plethora of institutions involved in agriculture and rural development. Within the Ministry of Agriculture (MAG), for example, there exist five line divisions, several staff divisions, twenty provincial offices operating independently of the line divisions, and a series of crop-specific national programs. Also associated with MAG, but operating autonomously, are several institutions which implement specific programs. These include the Agricultural Research Institute (INIAP), the Storage and Marketing Organization (ENAC), the National Development Bank (BNF), the Agrarian Reform and Colonization Institute (IERAC), and the Water Resources Institute (INERHI). There are also five regional development authorities, autonomous but with varying degrees of association with MAG: CREA (for the provinces of Cañar, Azuay, and Morona Santiago), PREDESUR (for El Oro, Loja, and Zamora Chinchipe), CRM (for Manabí), INCRAE (for the four Oriente provinces), and CEDEGE (for the Guayas River Basin). Also, there are public sector institutions outside the MAG family which work in agriculture and rural development, such as the Central Bank's Fund for the Development of Rural Marginal Groups (FODERUMA) and the Ministry of Education's Rural Nuclearization Program. There is also a variety of private organizations which work in rural Ecuador, many associated with religious and political groups.

While this institutional mix is not unlike that of some other countries, and while there is no harm per se in having a diversified institutional base, the inability in Ecuador to forge viable working linkages among the institutions has resulted in an ineffective and uncoordinated delivery of

services for increasing agricultural production and assisting the rural poor. As an example, all of the zonal offices of MAG, all of the regional authorities, BNF, the commodity programs, IERAC, INERHI, and a number of private organizations have their own extension agents. All are working to promote their agencies' agricultural/rural development objectives, which are often unrelated and at times competitive. Also, there is virtually no coordination among agricultural research, extension, and education institutions. This dispersion of functions and responsibilities, without a coordinating body or clear definitions of roles, has caused the institutions to be ineffective in dealing with the multiple problems facing the agricultural sector.

The second institutional weakness is an almost exclusive focus on large farmers who have the ability to absorb credit readily and respond to technical assistance. The BNF channels only minor amounts of credit to small farmers who, nonetheless, produce half of the nation's basic food crops. Extension agents are told only to serve a certain number of clients, thus usually leading them to assist only the larger farmers who, because of education, language, and customs, are "easier" to serve. INIAP's research program has traditionally concentrated on the crops and varieties characteristic of large farmers, although this research focus is being changed under the RTIS subproject for small farming adaptive research (IDAPA).

The third area of institutional weakness is the human resource base. As discussed in the 1979 Title XII Baseline Study, the technical schools and universities responsible for training in the agricultural/rural development sciences are severely deficient in curricula, laboratory facilities, and library resources. Within the several development institutions, on-the-job training as well as professional development programs are sporadic and disorganized. Furthermore, since most agricultural professionals come from a middle-class, urban background it is difficult to develop the types of personnel needed to serve rural Ecuador. There is a bias against any but full professionals, and consequently few technical level personnel and no paraprofessionals are employed. Even the mix of professionals is inadequate to deal with the problems of the sector. For example, only 5.6 percent of MAG's professionals are social scientists, only six percent are foresters, and there is only a handful of agricultural economists with training in agricultural policy analysis and planning. In general, the personnel of MAG and the other rural sector institutions are unprepared to deal with the crucial problems of rural poverty and agricultural production both at the field and at the policy levels.

The fourth weakness is the inefficient management and delivery systems of the rural sector institutions. MAG's zonal offices and the regional development authorities find it difficult to plan, manage, and evaluate programs and to provide for the logistics of keeping extension agents in the field. There are few incentives (financial and otherwise) for personnel to work in field level positions. The agents themselves usually operate with little guidance or effective supervision, and often find it difficult to mobilize other assistance for their clients outside of their own area of expertise. Identical delivery systems are normally used for all clients

(e.g., large farmers, marginal farmers, Indians, mestizos, diversified producers, those who concentrate on one crop) though needs vary enormously. For all these reasons it has been difficult to decentralize functions, to create effective linkages among agricultural research, education, and extension, and to deliver services to those who need them.

Finally the GOE's ability to analyze critical agricultural policy issues and to design appropriate interventions (including formulation of options for decision-makers) is extremely limited. Policy development work is urgently needed on such key issues as: agricultural pricing and marketing; farm mechanization vs. labor intensive alternatives; natural resource conservation and management; overall food security concerns; land tenure and colonization; and agricultural credit formation.

The data collection system on which policy analysis can be based is woefully inadequate. GOE decision-makers do not currently receive production information on a timely and reliable basis. Data on agricultural marketing conditions are almost non-existent and, when available, unreliable. Contributing to this problem is the lack of knowledge about methodological approaches for analyzing specific policy issues, and a shortage of planning scientists in MAG and CONADE who understand the multidisciplinary complexities of rural problems and their interrelationship with the rest of the economy.

The capacity to formulate program strategies and allocate public sector resources in accord with appropriate priorities is also weak. Program and project designers do not currently have adequate access to knowledge and information on such concerns as alternative approaches to agrarian reform, marketing systems appropriate for small farmers, women in development strategies, and the best ways to organize alternative employment opportunities for marginal rural dwellers. Without improved capacity in program design and project development there will always be a serious bottleneck in achieving even the best of development plans.

b. Technological Constraints

To date, agricultural research programs in Ecuador have tended to follow the commodity approach. There has been inadequate research on production systems and specific small farmer problems (as well as a failure to disseminate research results) and a lack of focus on the total farm unit and on the problems of rural poverty.

Agricultural productivity in Ecuador has not increased significantly over the last 15 years. As documented in the Title XII Baseline Study, only a few crops have shown an upward trend in yields (rice, bananas, cotton, soybeans), and these increases were primarily due to favorable market conditions which made modern input use particularly profitable rather than to new agricultural innovations. Almost all crops produced for domestic consumption by the small farmer have experienced declines in both absolute production and yields. During the period 1970-1976, soft corn production declined by 11.4 percent, potatoes by 2.2 percent, beans by 3.4 percent, barley by 20.5 percent, wheat by 2.4 percent, and peas by 4.8 percent. Since

1976, this situation has deteriorated further for every food crop because of drought conditions. Average yields for such commodities as potatoes and soft corn are only 35 percent and 16 percent respectively of those yields obtained at INIAP's experimental stations. In general, on-farm yields in basic grains are below yields in other countries with similar environments.

In the export commodities a similar trend exists. Coffee, for example, has shown a significant growth trend in acreage planted and tons produced but not in yields per hectare. The national average seldom exceeds seven qq/ha., about 60 percent of Colombia's level and less than half of El Salvador's. In the case of cacao, fungal diseases have traditionally taken a heavy toll and account for the low productivity. The same is true for hemp production. Those few export crops which have increased production have done so only because of acreage expansion.

In short, agricultural production (excluding livestock, forestry, and fisheries) can be said to be in a period of technological stagnation. Serious research efforts combined with effective educational and dissemination mechanisms are needed.

D. The RDIS as a Response

The RDIS is designed to help alleviate the institutional and technological constraints described above. The RDIS has two components. The first is the core mechanism in CONACYT that identifies problems hindering rural development in Ecuador, determines priorities, and mobilizes the technical and financial resources to solve the problems. This process involves several activities:

- developing close relationships between CONACYT and RDE institutions concerned with the rural sector;
- studying sector problems as well as problems of linkages among the RDE activities;
- establishing permanent linkages and communication channels among CONACYT, participating Ecuadorean institutions, and U.S. Title XII universities that can provide the technical assistance that the system requires for its functioning;
- identifying and mobilizing other sources of technical and financial assistance both within Ecuador and outside that are needed to strengthen rural development institutions;
- coordinating all technical assistance and training activities considered necessary to strengthen RDE activities in the rural sector;
- formal and on-the-job training of CONACYT personnel to create the stable and qualified cadre of professionals that can carry out the above activities.

The second component is the subprojects. These are the practical means by which the above activities are carried out and are instrumental to the achievement of several objectives:

- The RTIS core mechanism is strengthened. By working with REE institutions in the development of subproject proposals, CONACYT is learning to direct their efforts towards priority technological constraints and to forge linkages with other rural development institutions. In assisting the institutions to implement the subprojects, CONACYT is learning to identify and marshal the technical and financial resources necessary to solve Ecuador's rural development problems.
- The participating institutions are strengthened. The training and much of the technical assistance provided through the subprojects are designed to improve the institutional capacity and human resource base at both the technical and managerial levels.
- Linkages are formed among REE activities. Most subprojects are expected to involve at least two of the three elements.
- Technologies are developed and disseminated which are appropriate to the needs of small farmers and to the rural sector in general.

The RTIS approach is consistent with both USAID and GOE strategy. It is based on the premise that the problems of agricultural stagnation and rural poverty will not be solved over the next five years. Therefore, a permanent mechanism (the RTIS) must be established to facilitate a continuous flow of technical assistance, training, and technological resources to Ecuadorean rural development agencies. This mechanism will support the generation and dissemination of technologies that increase yields and improve the utilization of the small farmer's limited resources. A strengthened REE network will also promote changes in the composition of agricultural production from a subsistence to a commercial basis and reduce production risks and costs, thus increasing profitability and capital formation in agriculture.

II. PROGRESS TOWARDS MEETING PROJECT OBJECTIVES

An excellent beginning has been made toward the achievement of the three project purposes of institutionalizing the rural technology transfer system, strengthening and coordinating rural REF institutions, and developing appropriate technologies for small farmers. Progress along these lines is discussed below.

A. Towards Institutionalization of the RTIS

In the original Project Paper the rural technology transfer system was to become an integral part of the administrative framework of the new Rural Development Secretariat (RDS). The rationale for this institutional arrangement was based on the anticipated mandate of the RDS to improve the flow of essential services to abandoned and often forgotten rural areas. Also, at the time of the design of the RTIS Project, a strong national institution for science and technology in Ecuador did not yet exist. However, subsequent to project design, GOE policy changes narrowed the focus of the RDS to include only integrated rural development projects and created a broader National Science and Technology Council (CONACYT) to coordinate science and technology activities. CONACYT was established to:

- define Ecuador's science and technology needs;
- identify and analyze program options for science and technology development;
- address intersectoral issues related to science and technology; and
- coordinate and evaluate Ecuador's science and technology program.

The GOE and USAID agreed that this mandate made CONACYT a more appropriate institutional home for the RTIS and that CONACYT could fulfill all the responsibilities toward the RTIS Project that had been originally envisioned for the RDS. (See Section III.D. for a detailed description and analysis of CONACYT.)

The project has been instrumental in CONACYT's effort to establish itself as a viable national science and technology institution. Thus, progress towards institutionalization of a rural technology transfer system should be viewed in terms of the institutional growth of CONACYT itself since the Project Agreement was signed. CONACYT is well on its way to becoming the coordinator and promoter of science and technology in Ecuador. Administratively, it is headed by an Executive Director and consists of three technical divisions and two administrative offices. The technical divisions include Planning, Operations, and Rural Development. CONACYT now commands a program budget of approximately \$2.0 million and has a professional and support staff of 32 persons. Initially, CONACYT was confined to the limited physical space provided by the National Council for Development (CONADE), but has since moved into its own quarters. The approved organizational structure of the rural technology transfer system within CONACYT provides an excellent implementation

mechanism for rural sector science and technology activities.

B. Towards Coordinating and Strengthening Research, Education, Extension (REE) Activities

Substantial progress has been made in this area through the approval and implementation of subprojects aimed at strengthening cooperating institutions. Two such subprojects have been approved for the National Agricultural Research Institute (INIAP). The Soil and Water Conservation and Management (COMSA) subproject contemplates long-term technical assistance from a resident advisor plus short-term assistance from the USDA/USAID Soil Management Support program. Training is being provided for two professionals at the M.S. level, for 16 agronomists in short courses in the U.S., and for 60 agronomists and 120 agronomic technicians in short courses in Ecuador. The training in this subproject benefits staff from other participating institutions such as MAG, CREA, CRM, and INERHI as well as INIAP.

The second subproject on Adaptive Research and Development for Small Farmers (IDAPA) contemplates 20 person-months of technical assistance, M.S. training for four professionals, and short-term training for 50 research and extension staff in farming systems research and extension techniques. This subproject is working closely with the Integrated Rural Development Secretariat (SEDRI) and MAG extension agents in carrying out its objectives. It is expected that IDAPA will become the modus operandi of INIAP/MAG working relationships.

A subproject for the Study of the Agrarian Structure of Ecuador is also being implemented. It is aimed at strengthening the Ecuadorean Institute for Agrarian Reform and Colonization (IERAC) in its technical capacity to deal with the complex issues of land tenure. It contemplates about 35 person-months of technical assistance plus short-term training for 23 professionals including three librarians. These technical assistance and training activities have been initiated with assistance from the Land Tenure Center of the University of Wisconsin.

A subproject profile presented by the University of Ambato has been approved for Post-Harvest Food Technologies (PITALPRO). This subproject contemplates eight person-months of technical assistance plus M.S. training for two professionals and short-term training for eight technicians. Technical assistance from the University of Florida for the final design of this subproject has already been provided. The PITALPRO subproject will bring about greater participation of the private sector in the areas of food processing and input supply.

Several other subprojects identified in the original Project Paper have been approved at the profile level. These subprojects include Training for Rural Youth (4-F) and Agricultural Policy and Statistics.

In all the above subprojects, there is a component for the training and support of research assistants. It is expected that in most cases, after the

assistants complete their research and on-the-job training, they will be hired on a permanent basis by the implementing agencies, thus contributing to the strengthening of the professional staff of the participating institutions. In addition to the above subprojects, there are several more that are being evaluated at the present time and still others that are being formulated by the participating REE institutions with assistance from Title XII personnel.

C. Towards Developing Technologies which are Appropriate to Small Farmers

Progress towards this objective is also being achieved through the different subprojects. The COMSA subproject, for example, aims at developing management techniques that will reduce soil losses on small farms. It is expected that in its initial phase around 1,500 small farmers will learn these techniques every year and become prepared to teach them to others.

The IDAPA subproject aims at developing appropriate farm management practices for the systems that prevail in its areas of influence. In its initial phase at least 2,400 small farmers will learn these techniques through field days and follow-up practice. Similarly, the PITAIPRO subproject is aimed at teaching small farmers practices and processes that will reduce post-harvest losses.

All the above subprojects include training of extension agents from the implementing as well as from other participating institutions, thus multiplying the channels through which subproject benefits will be disseminated.

D. Implementation Concerns

1. Demand for Subprojects Exceeds Funding Supply

There has been a strong response from REE agencies to the availability of funds for rural technology generation and transfer subprojects. Table 1 sets forth in summary fashion the total demand for AID funding under the RTTS Project. Section III.C. and Annex E present the details of these financial projections. The Project Paper estimated total subproject demand of \$4.3 million. Yet, after only one year of operation, the actual demand from both ongoing and proposed subprojects is about \$16.1 million. Of this, about \$2.6 million are committed to ongoing subprojects. Thus, funding requirements for proposals awaiting final approval is \$13.5 million while only \$1.7 million of the original grant remain.

Many of the current subproject proposals have been developed to a point where FY 1982 or early FY 1983 approval is possible. Authorization of the loan add-on would make another \$3.5 million available for new subprojects, for a total of \$5.2 million. This increased level of funding would satisfy 40 percent of current subproject demand.

TABLE 1. COMPARISON OF RTIS FUNDING REQUIREMENTS AND AID RESOURCES
(All monetary values in \$ 000's)

<u>Project Activities</u>	<u>Estimated RTIS Cost</u>	
A. CONACYT institutional development	2,500.0	
B. Ongoing subprojects	2,571.6	
C. TOTAL "FIXED" REQUIREMENTS*		<u>5,071.6</u>
D. Subprojects approved at profile level	2,282.2	
E. Subprojects in PP but not yet approved	1,191.8	
F. New subproject proposals	10,095.6	
G. TOTAL REQUIREMENTS FOR FUTURE SUBPROJECT APPROVALS		<u>13,569.6</u>
H. TOTAL REQUIREMENTS (C + G)		<u>18,641.2</u>
 <u>Summary Calculations</u>		
I. Deficit with current authorization of \$5,300.0		13,341.2
J. Deficit with proposed authorization of \$10,300.0		8,341.2
K. AID funding that would be available for future subproject approvals (10,300 - C)		5,228.4
L. Ratio of future subproject requirements to available resources (G/K)		2.6

* Assumes that the expanded set of CONACYT development activities (including project development and support, special accounts, and the hiring of one project specialist) plus all ongoing subprojects will be fully funded if the Project Amendment is approved. The balance of the authorized funding would then be available for subprojects which have not yet been fully approved.

Operating experience shows that there is also a significant demand for support of small subprojects which would qualify as being in the areas of institution building and/or technology transfer, but which are not substantial enough to qualify as regular subprojects. Short courses, seminars, specific consulting services, etc. fall into this category. Other proposals which have been submitted for basic as opposed to adaptive research cannot be considered under the project's present design. Basic research in certain fields is necessary to support technology development in certain areas of particular interest to Ecuador. Examples of areas in which basic research is needed include cocoa plant diseases, the utilization of hybrid seeds by private industry, and atomic energy for plant and animal science. Finally, it would be desirable to tap the processing and marketing technologies of the private sector to complement the improved production technologies being developed

2. Need to Establish Science and Technology Priorities

The subproject proposals submitted for funding to CONACYT under the RTIS Project reflect the submitting institutions' perceptions of Ecuador's rural development problems and of the GOE's development objectives. However, these perceptions may not coincide with national priorities and goals. Thus, there is a definite need for CONACYT to define and establish the science and technology priorities for Ecuador's rural sector. The establishment of a mechanism for this purpose should have been one of the first activities in the implementation of the RTIS Project. However, because of limited personnel and the burden of the numerous subproject proposals, this has not yet been done.

Corrective action to resolve this problem is being taken by CONACYT. Arrangements have been made to provide CONACYT with two short-term consultants to produce a rural science and technology assessment. The assessment will contain a diagnosis of the present science and technology situation in the rural sector of Ecuador, an analysis of the priorities as conceived by the GOE in its National Development Plan, and a set of lines of action and specific areas of work ranked in an order that will reflect both the present situation and the GOE priorities. This document will help CONACYT in setting its priorities, and will encourage participating institutions to formulate subprojects that respond to these priorities.

Nevertheless, a document is not sufficient. Additional professional staff will be required in order to fully establish a priority setting mechanism that is dynamic and responsive to the changing needs of a growing rural section. Furthermore, the University of Florida advisors must work closely with the CONACYT staff - particularly the Technical Committee for Rural Development/Agriculture - to design and implement procedures for systematically screening proposed subprojects at an early stage in the review process to ensure that they conform to the priorities. A condition precedent to disbursement of project funds after CY 1982 will be the issuance by CONACYT of a set of priorities to be used in this process of evaluating and ranking subprojects.

3. Administration and Professional Staff

The preceding discussion demonstrates the progress made in terms of organizing the RTIS within CONACYT and eliciting support from REE institutions. This progress, however, also poses a challenge to CONACYT's Rural Development Division (RDD) and its capacity to effectively manage the process.

The RDD initially had a Director and three professionals as envisioned in the original Project Paper. However, because of attrition, the current staff consists of the Director and one professional. Obviously if the RDD is to carry out its duties and responsibilities it will require additional personnel. The intensive review of project needs has indicated that the minimum core staff of the RDD should consist of the following:

- The Director of Rural Development. This person acts as technical and administrative director of the RTIS Project on behalf of CONACYT's Executive Director. This person is the main counterpart of the University of Florida Chief of Party and acts as liaison between the Executive Director and the RDD as well as between CONACYT and the management level of the participating institutions. Together with the Chief of Party, the Director is responsible for establishing and making operational all the mechanisms necessary for the smooth functioning of the RTIS Project.

- The Chief of Research and Evaluation. This person is in charge of coordinating the research activities which include identification of problems and constraints in rural science and technology, as well as continuous revision of priorities and ways to refine the mechanisms to set these priorities. He/she will also be responsible for coordinating the evaluation activities (both ex-ante and ex-post) for the different subprojects, and will make recommendations to the Director of Rural Development regarding actions to be taken with respect to the different subprojects. In these aspects, this person will work closely with CONACYT's Director of Planning and with the University of Florida personnel. This position calls for a person with research experience and a broad view of sectoral problems and needs.

- Two specialists to work under the Chief of Research and Evaluation. A minimum of two specialists is recommended for two reasons. First, experience during the first year of project implementation shows that there is a continuous and heavy flow of subprojects that need to be evaluated at different levels. These two specialists will give support to the Chief of this activity, as well as in specific research tasks. Second, these specialists are expected to be involved from time to time in training and professional improvement activities (short courses, seminars, conferences) during the life of the project, thus reducing the actual time that can be used for job related activities.

- The Chief of Project Design and Development. This person will be in charge of coordinating all the activities of subproject design and formulation. In this capacity, he/she will work closely with the technical staff of the participating institutions and with the second long-term advisor from the University of Florida. He/she will also be in charge of coordinating the monitoring and follow-up activities for all the subprojects to ensure that schedules are followed, activities take place as planned, and goals are being met. This position calls for a person with experience in project design and implementation.

- Three project specialists to work under the Chief of Project Design and Development. In addition to the reasons already mentioned in the case of the previous specialists, a minimum of three specialists can be justified here because of the large number of expected subprojects and the diversity of actions required for each one of them. Each subproject should have a corresponding manager in CONACYT. In addition to the design activities there is a need for monitoring both at the office and at the field level, coordination of procurement of technical assistance and supplies, training, etc. Each specialist will be managing between three and four subprojects which is a substantial load.

It is important that the five specialists mentioned here represent a wide range of disciplines such as Agronomy, Agricultural Economics, Rural Sociology, Animal Science, Soil Science, etc. This will permit CONACYT to cover in a proper way the different subprojects, as well as take better advantage of the outside technical assistance that will be needed from time to time.

CONACYT agrees to the need for this core staff for the RDD, and these positions exist within CONACYT's staffing plans. Although the present COE austerity program has at times created some uncertainty as to the possibility of Government agencies filling their vacancies, there is strong COE support for CONACYT. USAID has raised this issue with the CONACYT Executive Director who has indicated his intent to have the RDD fully staffed by the beginning of CY 1983. However, one of the eight positions assigned to the RDD is currently filled by the Director of Planning and will not be available to the RDD until personnel adjustments are made elsewhere in CONACYT, including appointment of a permanent Executive Director. In order to ensure full RDD staffing as soon as possible, \$20,000 in project loan funds have been budgeted to hire a project specialist for one year. This is well below the maximum of \$100,000 approved by AID/W for the hiring of local personnel for CONACYT (see AID/W guidance cable, Annex B, para. 1.C.). A covenant expressing CONACYT's agreement to provide staffing support at these levels is included in the amended Project Authorization.

In summary, the progress towards accomplishment of the RPIIS objectives has been excellent. CONACYT has provided an organizational and functional framework that is appropriate for the RPIIS. Several important subprojects have been approved and several others are in various stages of development. The University of Florida has been contracted to help institutionalize the RPIIS in CONACYT and to facilitate the transfer of technology from the U.S. Land Grant Universities. Yet, there are needs which cannot be addressed within the scope of the current grant project. The RPIIS needs greater flexibility, the demand by REE institutions for RPIIS funds are jeopardizing the institutional credibility of CONACYT, and more human resources are needed to adequately handle the complexities of the RPIIS. A detailed description of the project activities intended to address these needs and to ensure project success is presented in the following section.

III. DETAILED DESCRIPTION OF THE AMENDED PROJECT

A. Objective and Rationale of Project Amendment

As indicated in the original Project Paper (page 11), the goal of USAID's program in agriculture and rural development is to increase food production, employment, and incomes, and otherwise improve the well-being of the rural poor. The RTIS Project, as amended, will continue to contribute to this goal through the development of agricultural/rural research, extension, and technical training appropriate for increasing food production and for improving the economic conditions and quality of life of small farmers. However, before CONACYT can fully accomplish these objectives it must demonstrate its institutional capacity to support REE entities in their program development by providing technical and financial assistance. Accordingly, the purpose of this Project Paper Amendment is to propose a loan add-on of \$5.0 million to: (1) expand core support to the RTIS; (2) fund expansion of ongoing subprojects; (3) fund new subprojects, several of which are in the advanced planning stages and will require funding in late FY 1982 and FY 1983; and (4) permit the RTIS to support a broader range of activities including basic research and private sector technology development and transfer. This will permit CONACYT to establish itself as an effective promoter and coordinator of science and technology development in Ecuador. The availability of loan funds will also permit CONACYT to achieve a more desirable allocation of grant and loan funds among training, technical assistance, and capital equipment. Perhaps most importantly, the expanded project will enable a more intensive strengthening of Ecuador's REE institutions and thereby ensure a more efficient, better integrated, and more appropriate mix of agriculture/rural development services in order to increase food production, small farm incomes, and the quality of rural life.

B. Project Elements

1. Institutionalization of the RTIS within CONACYT

a. Technical Assistance

Under the original University of Florida contract, long-term advisory services were estimated at \$550,000 which provided for four person-years (the Chief of Party) in the field plus some supporting services at the University of Florida headquarters. The contract contemplated the hiring of a second advisor which was completed as of May 1, 1982, adding three person-years at a cost of \$340,000. In addition, an Ecuadorean advisor has been hired for three years at an estimated cost of \$135,000, bringing the total cost of long-term technical assistance to \$1,025,000 (ten person-years). The expansion of the subproject portfolio with the consequent demands for CONACYT's participation in subproject formulation, evaluation, and monitoring activities will require additional technical assistance. Approximately ten person-months of short-term technical assistance are budgeted at a cost of \$90,000. Therefore, the total technical assistance budget is \$1,115,000 during the life of the project. All of these costs are grant funded.

b. Project Development and Support

These funds will be used for several purposes. Primarily, they are intended for subproject design and evaluation previous to approval. In many cases, neither CONACYT nor the implementing institutions will have the necessary expertise to design some technical aspects of a particular subproject; or if a subproject has been submitted to CONACYT for approval it might be that none of the project specialists has a degree of knowledge of the subject matter sufficient to make a good evaluation. In these cases, it will become necessary to hire outside technical expertise which may come from the scientific community in Ecuador or, if not available locally, from Florida or other Title XII institutions. These funds will also allow CONACYT to start work and generate demand in areas considered of high priority.

Secondly, these funds will allow CONACYT and the project to tap a very important resource: the scientific community at the Ecuadorian university. Recently a law has been passed approving the sabbatical year for Ecuadorian professors at national universities. It would be very beneficial to attract these scientists to work for the project, which would also contribute to better understanding and linkages among the universities and the other institutions of research and extension that participate in the RPIIS.

Finally, these funds will be available for studies and overall project evaluations. A total of \$450,000 of grant funds is budgeted for the project development and support item. Approximately \$120,000 would be required for the six regular project evaluations and for the planned study on ODE contracting procedures. The remaining \$330,000 would be available for the subproject-related activities described above. Since many of these activities will involve local assistance which can be hired with counterpart funding, the AID contribution will be adequate. Moreover, the need for outside assistance should diminish over time as the CONACYT staff acquires experience in subproject design and evaluation.

c. Training of CONACYT Personnel

The presently limited availability of local personnel has precluded the implementation of training activities. However, once the RPIIS is fully staffed this activity will be stressed. Successful institutionalization of the RPIIS will require that CONACYT personnel be able to take over all project activities once the technical assistance from the Title XII lead institution is terminated. Although on-the-job training will contribute a great deal towards this objective, project specialists and other CONACYT personnel will be given outside training through short courses and seminars on various topics such as project formulation, evaluation, and implementation. In some cases long-term degree training may be called for. The continuous up-grading of professional skills in such areas as economics, financial planning, agriculture, sociology, etc., is also a necessity for CONACYT's successful management of the RPIIS. Loan funds of \$80,000 have been allocated for this activity over the life of the project. It is estimated that the amount will be equally divided between short-term training (eight activities at \$5,000 each) and long-term training (one two-year degree program at \$20,000 per year).

d. Equipment/Materials/Vehicles

The amount of \$50,000 was budgeted for the purchase of four Jeep-type vehicles and office equipment. The vehicles will be used by CONACYT's personnel as well as the technical assistance personnel in their field trips and other selected project activities. An additional \$70,000 has been budgeted for computer hardware and other office equipment as listed in Annex I. All commodities will be loan funded with the exception of a small amount already procured with grant funds.

e. Hiring of Local Project Specialist

As mentioned in Section II.E.3., one of the eight positions assigned to the RDD is currently occupied by the Director of Planning of CONACYT. This position will become available to the RDD after high-level personnel changes are made elsewhere in CONACYT, including the appointment of a permanent Executive Director. In anticipation of some possible delay in these actions, loan funds of \$20,000 have been budgeted to hire a project specialist for up to one year, by which time CONACYT is expected to have assumed the specialists' salary. This allocation is considerably less than the amount approved by AID/W for funding CONACYT personnel (see AID/W guidance cable, Annex B, para. 1.C). CONACYT is committed to hiring the remaining five professionals for the RDD by the beginning of CY 1983. At that time, the RDD will be fully staffed with eight professionals.

f. Other RTIS/CONACYT Activities

Two special loan-funded accounts will be created to finance private sector research and development (\$300,000) and small subprojects (\$200,000).

1) Private Sector Research and Development

Except for the PITALPRO subproject (see Annex E), the primary technology focus of the RTIS is on food production. The land and water resource use and conservation elements, the education and extension activities, and even the policy and planning areas covered by the subprojects focus on production as contrasted with processing and marketing systems. With few exceptions, production technology both in Ecuador and in the U.S. lies in the public domain. This is not, however, true of processing and marketing technology which in Ecuador is primarily controlled by private agribusinesses.

A private sector research and development (R&D) account has been designed into the project in recognition of the important contribution that the private sector can make to enhancing agricultural technology (see AID/W guidance cable, Annex B, para. 1.E.). Agribusiness technology involves organization, market access, and vertical integration of production, processing and marketing. It is more than a package of specific process technologies; it is an integrated system which combines competitive technologies at the production and processing level with an aggressive marketing and distribution system. Effective production technology is only a

part of the rural technology problem; the private sector R&D account will attempt to integrate agribusiness technology into the solution.

The amended project will provide loan funds to co-finance the development and application of high potential agribusiness technologies, with priority for those which provide processing and marketing links for products which are the subject of RTIS production technology subprojects. These include fruits, vegetables, soybeans, cereals, and beans. These funds would be available to Ecuadorean firms to assist them in any of the following functions:

- to improve links to small farms and rural labor-intensive production;
- to extend existing technologies to include small farms, rural labor-intensive production, and small scale fisheries; and
- to facilitate the transfer of agribusiness technology from U.S. firms where such a transfer has a high potential for improving links to small farms, rural employment, or small scale fisheries.

The specific selection criteria and operating procedures for the account will be worked out with CONACYT as a condition precedent to disbursement of project loan funds for the account. It is anticipated that CONACYT will provide co-financing at market rates of interest. The amount of the loan and the repayment schedule would depend on the size of the requesting firm and the type of proposal. A firm categorized as small or medium size could request a cost-sharing arrangement in which CONACYT would loan up to 75 percent of the R&D investment. A large firm could receive up to 50 percent of the total investment from CONACYT. Normal banking practices used by the National Development Bank (BNF) for intermediate investment loans would serve as guidelines for establishing the term structure of the loan. In the event that the R&D undertaking were not successful, CONACYT would forgive the loan. If successful, the firm would repay the principal and interest into the account where it would be available only for other private sector R&D activities.

The total estimated funding requirements for this account are based on an extensive analysis of the investment needs cited in ten R&D feasibility studies completed at the Technical University of Ambato (UTA). These studies revealed that for small and medium size firms the typical R&D investment would be \$60,000-70,000, implying a CONACYT contribution of \$45,000-50,000. For large firms, the investment would be on the order of \$100,000, which would require a contribution of up to \$50,000 by CONACYT. The UTA portfolio contains six small-to-medium firms and four large firms. Taking this as a conservative estimate of nationwide demand for R&D co-financing implies total CONACYT funding requirements of over \$550,000. Project loan funds of \$300,000 were budgeted for this account on the assumption that about 60 percent of these proposals would be presented to CONACYT and approved.

2) Small Subprojects

The experience of the first few months of operation of the RTIS Project shows that there is a good demand for funds to finance activities of a more

limited scope and duration than the subprojects of the type described in the Annex E. These activities include short courses, seminars, short-term technical assistance, applied research, validation of research results, technology transfer, etc. Many of these activities could have a high pay-off in terms of results relevant to the purpose of the RTIS Project and would be useful complements of some of the more complex activities financed under this project. The loan add-on will allow creation of a \$200,000 account to finance small subprojects of this nature.

Small subprojects would be subject to less stringent requirements than regular RTIS subprojects in terms of their presentation and of the process followed for their approval. In terms of their presentation, a clear and concise statement of the proposal would be required. This would include a discussion of the small subproject's objectives, justification, proposed implementation schedule, beneficiaries, budget, and its relevance to the RTIS project goals and objectives.

With respect to the evaluation and selection of small subprojects, the process will also be simpler and will not require the involvement of the Technical Committee for Rural Development/Agriculture. A small subproject would be evaluated by the Director of the CONACYT's Rural Development Division. After receiving written approval from USAID, a recommendation will be sent to CONACYT's Executive Director who would then make the final decision. A main consideration for approval would be relevance to the RTIS Project.

Some examples of small subprojects that have been submitted to CONACYT for financing are:

- a short course for managers and users of irrigation districts on techniques for optimum management of water resources;
- an international seminar to focus on soil conservation problems and policies in ecological areas similar to those in Ecuador;
- a study of data sources and information systems for the agricultural and rural sector; and
- participation in a graduate level seminar on rural technology at the University of Loja.

Other examples are found in the areas of basic research. The original RTIS Project contemplated the support of subprojects with components of technology generation and transfer. In terms of research projects, this would imply that only those subprojects with applied research components would qualify. There are cases, however, in which it is worthwhile to support basic research subprojects that would have a potential impact in rural sector development. An example would be strengthening basic research on diseases that affect cocoa production in Ecuador such as witches' broom and monilia. Certain basic research subprojects would be excellent complements to applied or adaptive research and should be supported. Until now, they have not been

considered for financing under the RTIS. However, the loan funds provided under this Amendment will allow CONACYT to respond to these opportunities.

The experience with the first year of project implementation indicates that it is reasonable to assume that six to eight of these small subproject opportunities would arise each year, from which CONACYT would select and support the best two or three. By reviewing the financial needs of the small subprojects already presented and estimating a total small subproject demand at ten over the life of the project, a total of \$200,000 in loan funding was budgeted for this account.

A condition precedent to disbursement of AID funds for the small subprojects and private sector R&D accounts will be the development and approval by CONACYT and USAID of selection criteria and operating procedures. Furthermore, funding for any given activity under either account will be contingent upon the presentation of a complete description of the activity, including an implementation plan and budget.

The expected AID-financed budget for the institutionalization of the RTIS in CONACYT is detailed in Table 2. The total grant funding of \$1,712,000 includes the \$1,000,000 budgeted under the original grant project plus \$712,000 of grant funds which were originally budgeted for non-technical assistance inputs to subprojects and which will be replaced by loan funds. Loan funding for RTIS institutionalization will be \$788,000.

TABLE 2. ASSISTANCE FOR THE INSTITUTIONALIZATION OF THE RISK WITHIN DOMEST

AID Contribution
(\$ 000's)

<u>Elements</u>	<u>1981</u>			<u>1982</u>			<u>1983</u>			<u>1984-85</u>			<u>Total</u>		
	Grant	Loan	Total	Grant	Loan	Total	Grant	Loan	Total	Grant	Loan	Total	Grant	Loan	Total
<u>Technical Assistance</u>	34	-	34	351	-	351	325	-	325	405	-	405	1,115	-	1,115
<u>Project Development and Support</u>	-	-	-	86	-	86	170	-	170	194	-	194	450	-	450
<u>Training</u>	-	-	-	-	5	5	-	30	30	-	45	45	-	80	80
<u>Equipment Materials</u>	-	-	-	2	50	52	-	43	43	-	25	25	2	118	120
<u>Hiring of local Project Specialist</u>	-	-	-	-	20	20	-	-	-	-	-	-	-	20	20
<u>Special Activities</u>															
<u>Small Projects</u>	-	-	-	-	40	40	-	80	80	-	80	80	-	200	200
<u>Private Sector Research and Development</u>	-	-	-	-	40	40	-	130	130	-	130	130	-	300	300
<u>Subtotals</u>	34	-	34	439	155	594	495	283	778	599	280	879	1567	713	2280
<u>Inflation</u>	-	-	-	37	14	51	49	28	77	59	25	87	145	70	215
<u>Totals</u>	34	-	34	476	169	645	544	311	855	658	308	966	1712	788	2500

2. Subproject Portfolio

a. Conceptual Role of the Subproject Portfolio

As can be appreciated in Figure 1 on the following page, the subproject is the primary mechanism for accomplishing technological change and the overall project goals and objectives. It is the subproject proposal that reflects the institutional perceptions of the problems and constraints of rural Ecuador and proposes solutions in the areas of human resource development, improved institutional capacity, and generation and diffusion of rural sector technologies and innovations. These are necessary ingredients for rural technological change and greater efficiency in the resource allocation decisions made by the rural sector. Under favorable policy and market conditions, these decisions are translated into increased rural production and incomes and a higher quality of life in rural areas.

Thus, through the subproject portfolio the REE system will become better integrated. It will produce technological change for a more effective and competitive rural sector and will enhance CONACYT's role as the coordinator and promoter of science and technology in Ecuador. Because of the importance of the subproject portfolio, over three-quarters of total AID funds will be allocated to this project element. In the following section a description of this portfolio is presented.

b. Subproject Portfolio Description

There are a number of common features of the proposed subprojects in the illustrative portfolio. The portfolio takes a system approach to dealing with the problems and constraints of Ecuador's rural sector. As indicated in the conceptual discussion of the role of the subproject, three necessary factors for rural development to take place are: technology generation/diffusion, institutional capacity, and improved human resources. The subproject portfolio, therefore, is clustered around these common themes. It must be recognized, however, that subprojects will contain elements of all three.

The main cluster includes eight subprojects whose primary emphasis is on technology development and diffusion of innovations. They include the development and diffusion of technologies for such crops as fruits, vegetables, cereals, and soybeans, and technologies for improved soil conservation practices and food processing. The basic thrust of all of these subprojects is to support the COE's integrated rural development (IRD) program with special emphasis on the central highland area of Ecuador where several major IRD projects are being implemented. For example, the basic strategy of both the USAID and World Bank sponsored projects in Quimsag-Denipe, Salcedo and Tungurahua is to intensify agricultural production by a gradual shift in cropping practices from such subsistence crops as barley, corn, and wheat into fruits and vegetables. Thus, the two subprojects entitled Highland Vegetable Crops and Deciduous and Subtropical Fruit Crops would provide INIAP and the universities of Ambato and Chimborazo with an institutional capacity to generate fruits/vegetable production technologies. The coordination of these specific activities would rent with CONACYT and the Integrated Rural

Development Secretariat (SEDRI) Additionally, the PITALPRO subproject would concentrate on providing the IRD program with food processing/storage technologies appropriate to the increased availability of fruits/vegetables and other food crops. The COMSA subproject is providing the adaptive research base for promoting improved cultivation practices as well as reducing soil loss within the IRD areas.

The second category of subprojects has been titled institutional development. Many of the subprojects in this grouping have elements of technology development and human resources improvement. However, the primary emphasis is on building an institutional capacity in such areas as land tenure research, water resources utilization, soil conservation and siltation control, animal science curriculum development, and natural resource planning. The agrarian structure subproject is an example of how this aspect of the program works. Prior to the initiation of this subproject, land tenure issues were being handled by IERAC using a variety of criteria, none of which were technical in nature. Political and often social variables were the only ones considered before decisions were made, resulting in an inadequate response to a complex issue. The agrarian structure subproject, however, proposes to build an institutional research capacity to fully define the interrelationships between land tenure and economic, technical, social, cultural, political, environmental, and financial variables which are important determinants for decision-making concerning land use and tenure. This subproject is receiving assistance from the Land Tenure Center of the University of Wisconsin.

A third cluster of subprojects focuses on human resources improvement. The emphasis of these subprojects is on providing Ecuador's rural sector with a better trained, more culturally sensitive human resource base. Rural youth development, integrated insect pest management, extension service improvement, and farming systems are examples of subprojects within this area of emphasis which may be funded under the RIMS Project. The IDAPA subproject, for example, is beginning to form a new cadre of research scientists within INIAP and other agricultural research institutions. These scientists will have a new philosophy for doing research by focusing on farm level needs instead of conducting research for the sake of research. The IDAPA subproject is providing a new conceptual methodology for technology development and extension. Training and technical assistance are the main inputs of the subprojects in this category.

As can be appreciated in Table 3, the illustrative list of subprojects conforms to the development strategy which is being supported by the OIE and USAID. By improving the human resources, technological, and institutional capacity of Ecuador's rural sector RIE system, technological change will take place that will result in increased productivity, incomes, and general rural welfare.

Finally, it must be noted that except for ongoing subprojects, the list of subprojects presented in Table 3 and Annex E is tentative and subject to further processing by CONACYT. Moreover, funding is not adequate to carry out all subprojects and new subprojects may be identified and considered as

additional implementation experience is gained. Nevertheless, the illustrative list is adequate to demonstrate the types of interrelationships between individual subprojects, the overall project objectives, and the GOE's rural sector strategy.

Table 3: Summary¹ Description of the Subproject Portfolio

Primary Area Title Subproject (Lead Implementing Agency)	Objectives and Major Activities	Status ²				Total Requested AID Funding (\$ 000's)
		A	B	C	D	
<u>A. Technology Development/Diffusion</u>						
1. Deciduous & Subtropical Fruit Crops (INIAP)	Increase fruit production and productivity by training fruit crop research personnel, developing technology in subtropical and deciduous fruit crops, and conducting an active technology transfer program in support of the IRD program in Ecuador's central highland.				X	1,401.0
2. Highland Vegetable Crops (INIAP)	Develop the appropriate vegetable technology for the small and medium-size growers in Ecuador's central highland by: (1) improving the professional and technical staff of personnel dedicated to vegetable research and extension; (2) integrating REE entities working on vegetables; and (3) identifying socio-economic, technical, biological factors that constrain vegetable production/productivity.				X	1,532.9
3. Bean Research CRSP (INIAP)	Reverse the trend of declining bean production by (1) conducting research to document bean plant growth and other essential characteristics of the plant, (2) understanding the role of beans within the agronomic and socio-economic context of farming systems and identifying the special problems of smallholders who produce beans, and (3) developing innovations in production techniques appropriate for such smallholders,					

^{1/} See Annex E for details

^{2/} A) On-going; B) Approved at Profile Level; C) Illustrative in original PP; D) Newly proposed illustrative.

Primary Area Title Subproject (Lead Implementing Agency)	Objectives and Major Activities	Status ²				Total Requested AID Funding (\$ 000's)
		A	B	C	D	
	(4) demonstrating and disseminating the innovations, and (5) providing for the complementary inputs and services necessary for small farmers to implement the new technologies. (AID financing provided under centrally-funded account no. AID/DSAN/XII G-0261)				X	-
4. Soybean Production & Utiliza- tion (INIAP)	(1) Create an interinstitutional soybean working group, under INIAP's leadership to develop and carry out a plan for soybean production and use in Ecuador. (2) Develop and implement a comprehensive research program to investigate the problems and constraints in all areas of soybean production, marketing, and use. (3) Develop the human resources base necessary for INIAP and the other institutions to carry out the program.				X	669.0
5. Fisheries & Aquacul- ture (MAG)	Increase aquaculture production, particularly among small farmers. Specific activities will: (1) coordinate public and private sources of aquaculture technology; (2) assist the development of a trout rearing, disease investigating, and personnel training station; (3) provide technology for trout feed processing; (4) improve a warm-water technology transfer center.				X	239.0
6. Cereals Program (MAG)	(1) Increase the National Cereals Program's ability to give technical assistance to small farm grain growers. (2) Provide the means and methods by which the National Cereals Program can improve the marketing of grains in the Sierra. (3) Link the cereal research program with the technical assistance program in such a way that production on the farm will increase. (4) Improve the training of the personnel of the Cereals Program for them to develop the appropriate technologies for cultivating, harvesting, and post-harvest storing and marketing of grains.				X	903.7

Primary Area Title Subproject (Lead Implementing Agency)	Objectives and Major Activities	Status ²				Total Requested AID Funding (\$ 000's)
		A	B	C	D	
7. Soil and Water Con- servation & Management "COMSA" (INIAP)	(1) Develop appropriate COMSA systems for small farmers through applied re- search. (2) Train small farmer change agents to apply the basic principles of COMSA in specific geographic areas. (3) Train Ecuadorean technicians so that a human resource base will be available for mounting a national COMSA program. (4) Develop a national conscience concerning the importance of the rational use and conservation of soil and water.		X			633.6 approved 565.0 expansion
8. Post- Harvest Food Technologies "PITALPRO" (UTA)	(1) Reduce post-harvest food loss through the development of appropriate technology which the small farmer can use for preserving his own crops. (2) Generate processing and marketing tech- nologies which could be feasibly implemented by agro-industries.			X		509.5
9. Appro- priate Technology Development (CATER)	Assist the Andean Center for Rural Technology (CATER) to (1) carry out an assessment of traditional small-farm technologies in the Province of Loja, (2) test new technologies and improve- ments to existing technologies, and (3) disseminate proven technologies.				X	112.7
<u>B. Institutional Development</u>						
1. Study of Agrarian Structure in Ecuador (IISAC)	Improve the capacity of IISAC to conduct research related to agrarian structure and land utilization.		X			795.0
2. Irrigation Support (INISDII)	(1) Assist INISDII in the development of its institutional capacity to pro- vide training and extension in on-farm water management. (2) Provide INISDII with an analysis of the various irri- gation and farming system practices.				X	1,436.0

Primary Area Title Subproject (Lead Implementing Agency)	Objectives and Major Activities	Status ²				Total Requested AID Funding (\$ 000's)
		A	B	C	D	
3. Soil Con- servation Service (PRONACOS)	Develop a soil conservation and manage- ment program in Ecuador that focuses on: (1) protecting the natural resource base from excessive soil erosion; (2) providing off-site benefits through re- duced sedimentation in stream water, irrigation systems, municipal water supplies, hydroelectric projects, and fisheries.				X	1,327.0
4. Catholic University of Guayaquil Animal Science Program (CUG)	(1) Fortify CUG's Animal Science Pro- gram so as to better prepare tech- nicians for gainful employment. (2) Lay the groundwork for CUG's eventual expansion into a more extensive agri- cultural education program by: conduct- ing a manpower assessment to identity occupational demands; design- ing curricula and preparing detailed plans for expansion into agricultural educational fields other than Animal Science; and conducting limited train- ing in the area of Animal Science for BIF technicians, seminary students, and other groups with defined needs.				X	522.8
5. Agricul- tural School Feasibility Study (Fundación Ejecuto Español)	Perform a study of the type of post- secondary agricultural program most needed in Ecuador and in the Andean region as a whole, and develop an outline for the operation of the proposed institution.				X	91.0
6. Natural Resources Planning & Management (ORWIE)	Establish the institutional capacity to plan and coordinate multisector activities in the area of renewable natural resources.				X	435.3

Primary Area Title Subproject (Lead Implementing Agency)	Objectives and Major Activities	Status ²				Total Requested AID Funding (\$ 000's)
		A	B	C	D	
C. <u>Human Resources</u> <u>Improvement</u>						
1. Small Farmer Adaptive Research & Development "IDAPA" (INIAP)	(1) Generate and transfer technologies appropriate to the agro-socio-economic conditions of small farmers in different ecological zones. (2) Develop the most appropriate techniques for training small farmers through their organizations. (3) Train Ecuadorean technicians from various rural sector institutions in the techniques of research, extension, and education for a small farm adaptive research and development (IDAPA) system. (4) Establish and fortify linkages among Ecuadorean research, extension, and education institutions so a IDAPA system can be built.	X				1,143.0
2. Integrated Insect Pest Management (INIAP)	Improve the quantity and quality of available food crops by developing and implementing Integrated Insect Pest Management Programs which will increase and stabilize yields and at the same time reduce the serious dangers associated with the present widespread abuse of pesticides.				X	1,672.0
3. Agricul- tural Train- ing for Rural Youth (4-F Founda- tion)	Revitalize the 4-F Program so as to make it an effective and efficient vehicle for transferring technologies and for imparting leadership and other skills to rural youth by: bringing the number of clubs and members at least back up to 1973 levels; forming a cadre of trained MAG personnel dedicated to working with 4-F groups; and assuring that the training given and the activities undertaken by the 4-F Program are the most appropriate for future Ecuadorean farmers.	X				370.0

Primary Area Title Subproject (Lead Implementing Agency)	Objectives and Major Activities	Status ²				Total Requested AID Funding (\$ 000's)
		A	B	C	D	
4. Extension Systems for Small Farm Families (MAG)	Carry out a study to: (1) determine what specific improvement can be made in the present methods used for technical assistance and transferring technology to small agricultural producers; (2) provide strategies and plans for changing the policies and implementing improved programs; (3) prepare criteria methods and schedules for evaluating the actions taken.				X	130.0
5. University of Machala Research & Dissemina tion (UIM)	Provide training and support to agricultural professionals conducting research: (1) to conserve genetic material as a means of improving native crops; (2) to control insect pest damage to small farmer crops; (3) to help eradicate <u>Brucelosis</u> , a disease that affects both livestock and humans.				X	334.8
6. Technology Transfer for Small Fishermen (INP)	(1) Train small fishermen in the handling and processing of certain fish varieties of low cost and high protein content using technologies developed by the INP. (2) Conduct a market study that would indicate the potential demand and acceptability of these new products.				X	250.0
7. Agricul- tural Policy & Statistics (INEC)	Help build the capability within the OIE to determine what policies are supportive of agricultural sector goals, what statistical information is relevant to a particular policy, and how best to obtain and analyze that information for decision-making input.				X	1,067.9
TOTAL DEMAND FOR AID (ICPIS) FUNDING FOR SUBPROJECTS						<u>16,141.2</u>
CONTRACT Institutional Development						2,000.0
Small Subprojects and Private Sector R&D Accounts						500.0
TOTAL DEMAND FOR AID PROJECT FUNDING						<u>18,641.2</u>

C. Financial Analysis and Plan

1. Summary Financial Data

A summary of the budgets for all ongoing and proposed RTIS activities is presented in Table 4. (See Annex E for the detailed budgets. The budgets for unapproved subprojects were drawn up for this Project Paper Amendment on the basis of the subproject proposals. Most of the larger subproject proposals were developed with the assistance of Title XII university personnel or other qualified consultants and include rather extensive budgets that fulfill AID requirements.

All budgets were verified. This included checking the consistency of the various line items with the inputs discussed in the subproject proposal narrative, and the reasonableness of costs. Verification of the counterpart was more difficult as many proposals provided highly aggregated figures for personnel and logistical support. In these cases, further information on counterpart inputs was sought from the subproject file, USAID and Title XII personnel familiar with the subproject, and the COE officials directly involved with the subproject.

In general, the budgets probably understate actual counterpart for two reasons. First, some proposals clearly included the costs of new staff only, whereas many existing employees and facilities may in fact contribute to the subproject. Second, in the case of a few subprojects that are already underway it has become clear that the participating agencies are making greater use of existing resources than anticipated in the proposed budgets. This reflects the high level of enthusiasm that the project has generated.

In developing the detailed budgets for the Project Paper Amendment, grant funds have generally been reserved for technical assistance while training, materials and equipment, and general support have been budgeted with loan funds. The only exceptions are the non-technical assistance inputs for CONACYT's institutional development and ongoing subprojects which were purchased with grant funds during the first two years of the project.

Although the cost estimates presented here may be considered reasonably firm, final subproject approval will require more precise budgets which could result in adjustments. In the aggregate, the subproject budgets illustrate two important points concerning the financial soundness of the project. First, subprojects have been developed which are more than sufficient to absorb total proposed AID support for RTIS project activities. Moreover, the total demand for project funding may be expected to increase as other subproject proposals are submitted. Thus, there should be no difficulty in fully committing AID funds to a number of high priority subprojects in a short period of time. Second, the OE and private Guadorean institutions on the average have accepted over 50 percent of the total costs of the subprojects. This signifies a strong commitment to supply the necessary counterpart resources to ensure subproject success.

**Table 4: Funding Requirements for Ongoing and Proposed Activities
of the Rural Technology Transfer System
(\$ 000's)**

	Total Demand for			<u>Host Country</u>
	<u>Loan</u>	<u>Grant</u>	<u>Total</u>	
CONACYT development and special accounts	788.0	1,712.0	2,500.0	1,365.0
Subprojects:				
<u>Ongoing</u>				
COMSA	235.4	398.2	633.6	1,189.4
IDAPA	441.0	702.0	1,143.0	3,157.4
Bean Research CRSP	-	(195.0)	(195.0)	43.0
Agrarian Structure	258.8	536.2	795.0	525.0
<u>Approved Profile</u>				
Machala University	310.2	24.6	334.8	446.3
PITALHA	423.2	86.3	509.5	385.0
Aj Policy & Stats.	724.7	343.2	1,067.9	400.6
4-F Rural Youth	340.0	30.0	370.0	1,330.0
<u>Others in PP</u>				
CUG Animal Science	225.1	297.7	522.8	678.4*
Soybeans	405.0	264.0	669.0	650.0
<u>New Proposals</u>				
Soils Service	779.0	548.0	1,327.0	5,231.7
Vegetables	933.9	599.0	1,532.9	464.8
Fruits	767.0	634.0	1,401.0	615.3
Pest Management	865.0	807.0	1,672.0	716.0
Extension Systems	48.0	82.0	130.0	29.4
Appropriate Tech.	112.7	-	112.7	116.8
Irrigation Support	749.0	687.0	1,436.0	469.3
Fisheries	211.0	8.0	219.0	98.6
Cereals Program	779.7	124.0	903.7	1,271.2
Small Fishermen	210.0	40.0	250.0	210.0
Aj. School	-	91.0	91.0	45.0
CEFA Expansion	212.0	353.0	565.0	411.1
Nat. Res. Planning	162.3	273.0	435.3	80.0
TOTAL	10,001.0	8,640.2	18,641.2	19,929.3

* In addition, Catholic Relief Services will contribute \$74,000.

This set of ongoing and proposed activities gives the following representative distribution of AID funding among various inputs:

	Total Demand for AID (RPMIS) Funding (\$ 000's)			Percentage Distribution
	<u>FX</u>	<u>LC</u>	<u>Total</u>	
Technical assistance	6,802.2	139.0	6,941.2	37.2
Training	3,863.8	984.5	4,848.3	26.0
Equipment/materials	2,752.6	58.0	2,810.6	15.1
General support (salaries, travel, etc.)	367.0	1,650.2	2,017.2	10.8
Inflation/contingencies	1,706.6	317.3	2,023.9	10.9
TOTAL	15,492.2	3,149.0	18,641.2	100.0

Over 63 percent of the requested funding is for technical assistance and training. Another 15 percent of funding will help to relieve the shortage of basic equipment and facilities, particularly for research institutions and experimental stations.

Some subproject budgets request funding of salaries for research professionals and assistants. In most cases, these personnel are new additions to staff and the participating institution would gradually assume the full salary over the life of the subproject. The appropriateness of project funding of salaries and other general support costs (office space, administrative costs, etc.) will be judged for each subproject during the review process and will be held to a minimum.

2. Disbursement and Obligation Schedule

A schedule for the disbursement of AID grant and loan funds was constructed taking into account: (a) the current and proposed (UNACT) institutional development activities, (b) ongoing subprojects, and (c) a number of other subprojects which are expected to be approved shortly. This schedule, presented in Table 5, shows an important trend in which the participating institutions assume an increasing share of subproject costs over time. In this way, UNACT will be able to use additional funding secured from other sources to bring on new subprojects in an orderly fashion as its financial commitments to earlier subprojects diminish. This trend is also indicative of the gradual process by which the participating institutions absorb recurring costs and fully integrate the subproject activities into their program.

The schedule also compares cumulative disbursements to AID obligations. To date, \$2 million in grant funds have been obligated. Incremental grant obligations will be made through FY 1985 to coincide with project requirements. The half of the loan add-on will be obligated in the third quarter of FY 1982 and the second half in FY 1983, although sufficient funds may be available in FY 1982 to fully fund the loan add-on.

Disbursement and Obligation Schedule for RTTS Project Activities

1981 - 1987
(\$ 000's)

	<u>---</u>	<u>Total</u>	<u>---</u>	<u>---</u>	<u>1981-</u>	<u>---</u>	<u>---</u>	<u>1982-</u>	<u>---</u>	<u>---</u>	<u>1983-</u>	<u>---</u>
	<u>AID/L</u>	<u>AID/G</u>	<u>HC</u>	<u>AID/L</u>	<u>AID/G</u>	<u>HC</u>	<u>AID/L</u>	<u>AID/G</u>	<u>HC</u>	<u>AID/L</u>	<u>AID/G</u>	<u>HC</u>
OPERATIONAL												
Institutionalization	703	1712	1365	-	34	150	169	476	165	311	544	180
Ongoing Subprojects	935	1635	4916	-		582	251	1213	1336	434	400	1549
Subprojects to be Approved	3277	1552	7042				111	44	-	871	441	950
TOTAL REQUIREMENTS	5000	5300	13323	-	34	732	531	1733	1501	1616	1385	2679
COMMITTED AID REQUIREMENTS				-	34		531	1767		2147	3152	
COMMITTED AID OBLIGATIONS				-	1200		2500	2000		5000	3300	

(continued)

Disbursement and Obligation Schedule for RTIS Project Activities

1981 - 1987
(\$ 000's)

(continuation)

	-1984-			-1985-			-1986-			-1987-		
	<u>AID/L</u>	<u>AID/G</u>	<u>HC</u>	<u>AID/L</u>	<u>AID/G</u>	<u>HC</u>	<u>AID/L</u>	<u>AID/G</u>	<u>HC</u>	<u>AID/L</u>	<u>AID/G</u>	<u>HC</u>
CONTRACT												
Institutionalization	308	658	195	-	-	210	-	-	225	-	-	240
Ongoing Subprojects	250	23	1449									
Subproject to be Approved	998	535	1715	812	522	2332	352	284	1744	133	126	301
TOTAL DISBURSEMENTS	1556	1216	3359	812	522	2542	352	284	1969	133	126	541
CUMULATIVE AID DISBURSEMENTS	3703	4368		4515	4890		4867	5174		5000	5300	
CUMULATIVE AID OBLIGATIONS	5000	4500		5000	5300		5000	5300		5000	5300	

3. Institutionalization of Financing

A key institution-building objective of the project is to ensure that financial support for the activities carried out under the RITS continues beyond project termination. This raises four issues: (1) recurring costs, particularly for personnel; (2) GOE support for RITS activities; (3) non-GOE sources of future support; and (4) supplemental subproject funding.

a. Recurring Costs

The recurring cost issue is particularly important in this project. On the one hand, this is above all an institution building project designed in part to help overcome the severe shortage of qualified personnel in the areas of agricultural research, education, and extension in Ecuador. To the extent possible, the subprojects are oriented toward assistance to and training of existing personnel. Nevertheless, it is clear that in order to carry out its ambitious, long-range rural development program, the GOE must invest in the training of a new generation of agricultural professionals and technicians. On the other hand, the prospect of slower growth in GOE revenues over the next few years raises the question of its capacity to meet an expanded payroll.

As discussed in Section I.E.2., USAID proposes to provide initial funding for one of six positions to be filled in the Rural Development Division (RDD) of CONACYT. Approximately \$20,000 in AID loan funds will be used to hire a project specialist, well below the \$100,000 maximum AID contribution approved by the DAEC in the AID/W guidance cable (see Annex B, para. 1.C.). The AID-funded specialist will be hired by October 1982 and the salary will be assumed by CONACYT approximately one year later. For its part, CONACYT is committed to hiring one chief of research and evaluation and four specialists by January 1983. At that time, the RDD will be fully staffed with eight professionals. CONACYT will try to fund these new positions by reallocating operating funds, thus minimizing additional recurring costs. Its willingness to make these budgetary changes reflects the high priority that CONACYT places on the the RITS Project.

It is difficult to measure the potential recurring cost impact from the subproject budgets because they often fail to differentiate between salaries for new versus existing personnel. In the worst case, it can be assumed that all salaries are for new personnel. For the 22 ongoing and proposed subprojects, this amounts to \$8.7 million over the seven-year life of the amended project, or about \$1.25 million per year on average. If all new personnel brought on through these subprojects were retained, by 1987 they would represent at most an added cost of \$2.7 million per year. This figure, unadjusted for inflation, is equal to slightly more than one percent of the total GOE budget for the various rural development institutions at the start of the project. More realistically, the budgetary impact would be considerably less than this estimate. Public sector employment in Ecuador increased markedly during the 1970's. It is believed that many participating institutions could make more efficient use of their current employees by shifting some of them into RITS-related activities.

During the subproject review process, the capacity of the participating institution to make internal staffing adjustments to meet subproject personnel needs will be closely examined. RTIS funding for new personnel will be considered only where adjustments are not feasible. In this case, the institution will be expected to take on these salaries over the course of the subproject. Final subproject approval will require reasonable assurance that the institution will be able to meet its personnel and other counterpart commitments.

b. GOE Support for RTIS Activities

The Project Paper called for the establishment of a RTIS Fund as a "major Project objective". As described in the Project Paper, the Fund was to be a GOE budget line item, initially consisting entirely of AID funds for the RTIS, from which subprojects would be funded. It was agreed that over time the GOE would budget an increasing amount of its own resources into this account so that the RTIS Fund would "continue to survive and prosper after the termination of AID assistance". Toward this end, the original Project Authorization and Project Agreement contain two covenants by which the GOE agrees (1) to contribute to the RTIS Fund, beginning no later than the third year of the project (1983), annual funds of amounts jointly agreed to by AID, and (2) to continue the Fund, with adequate funding, beyond the end of the project.

A science and technology (S&T) line item has been established to provide GOE resources to CONACYT. The use of the S&T account is not restricted to rural science and technology activities. However, the institutionalization of the rural technology transfer system in CONACYT resulting from this project should ensure that rural sector activities will command a substantial share of S&T account resources in future years. The significance of the S&T account is that the GOE has demonstrated its financial commitment to CONACYT two years earlier than anticipated in the Project Paper.

The S&T account, however, appears to be an interim measure. Planning is far along for the creation, possibly by 1983, of a national fund for science and technology (FONACYT). The purpose of FONACYT would be to consolidate all GOE expenditures on science and technology and to attract funding from other sources. As such, the creation of FONACYT would signify an even stronger GOE commitment to CONACYT, and would give CONACYT greater leverage in developing its role as promoter and coordinator of science and technology for developmental purposes. Although FONACYT, like the S&T account, would not be directed solely at rural sector activities, it would have the more important effect of strengthening the overall institution within which the RTIS operates.

If FONACYT is not established, continuation of the S&T budget item would fulfill the GOE's commitments to funding rural sector activities. In either case, the two covenants referred to above will be amended to state that the GOE will, during and after the project, make funds available for RTIS subprojects through a general science and technology budget item or fund, rather than through a RTIS Fund per se. It is expected that the GOE will make

available for RTTS activities through either of these mechanisms at least \$800,000 during the life of the project. These funds will finance local costs of subprojects for which the participating institutions do not have sufficient funds, or the local costs of other subprojects.

c. Other Sources of RTTS Funding

It is expected that the positive results of the early subprojects and the demonstrated capability of CONACYT to develop, select, and finance these activities will ensure funding over the long term from a variety of sources. AID centrally-funded and regional projects, the Title XII CRSP and strengthening grants, Ecuadorean private sector institutions, and international research institutions are likely sources. The strengthening of CONACYT proposed in this Project Amendment is especially important for attracting larger donors, such as the IDB and IBRD. Moreover, if the RTTS continues to expand and face demand in excess of available funding, further USAID support for future subprojects should not be ruled out. This support would be justified for specific subprojects which provide replicable REE models (see AID/W guidance cable, Annex B, para. 1.A.) and for promoting the continuing institutional development of CONACYT, an objective which other donors are not likely to share.

d. Supplemental Subproject Funding

The AID/W guidance cable (Annex B, para. 1.D.) discouraged the use of project funds to finance "subproject deficits." In fact, the reference seems to have been to funding for the expansion of ongoing subprojects such as COMSA. New avenues for applied research and increased demand for training and extension services cannot always be foreseen, as occurred in the case of COMSA. USAID believes that CONACYT should have the option to use AID funds for expansion of ongoing subprojects. USAID will closely examine any actual cost overruns incurred by subprojects to determine if circumstances justify additional AID funding.

4. Conclusion

In summary, the financial analysis of the Project Amendment finds that: (1) there is a strong demand for RTTS project funding*; (2) the estimated costs of these subprojects are known and reasonable; (3) the GOE should be able to sustain the ongoing expenses created by these subprojects; and (4) the GOE has taken steps to comply with project covenants by making budgetary resources available for the RTTS. Therefore, it is concluded that the amended project is financially justified.

* As shown in Table 1, the funding requirements of subprojects awaiting final approval are more than double the resources that would be available with the proposed loan add-on.

D. Institutional Analysis

1. Background

The National Science and Technology Council (CONACYT) is the GOE institution responsible for assuring that the RTIS Project accomplishes its objectives. CONACYT was founded on the premise that science and technology development are important factors in the future growth and progress of Ecuador. Five important considerations underlie CONACYT's functions and structure. First, it was recognized that science and technology development is found not only in equipment and materials, but also in people, thus requiring investments in human capital. Second, in order for growth and development to take place in an orderly fashion the system which generates, diffuses, and promotes the adoption of innovations must be well coordinated. Third, technological progress will take place when there is an effective interaction between the producers and users of technology. Fourth, the market for science and technology must be dynamic and constantly in search of new ideas and knowledge, suggesting that technological change will take place only if the system is open and subject to outside influence. Finally, a national-level entity is required to coordinate public and private science and technology activities to ensure the most effective use of Ecuador's limited resources in this area. In short, the need was perceived for a central institution to develop a policy for science and technology based on the country's development problems, and to promote and coordinate activities directed at these problems.

In 1973 CONADE's predecessor agency, JUNAPLA, established a Science and Technology Division in response to the above considerations and to lay the foundation for Ecuador's science and technology development. However, it was not until 1979 that the newly elected democratic government formulated a five-year development plan which made science and technology a national priority. It was subsequently proposed that a national law be passed for the orderly development of science and technology institutional capacity in Ecuador, and that a GOE institution be created with primary responsibility for overseeing that process.

Public Law No. 3811, which creates CONACYT as an entity of CONADE and provides the legal base for Ecuador's science and technology effort, was passed in August 1979. (See Annex G for the text of the law.) CONACYT began operations in September 1980.

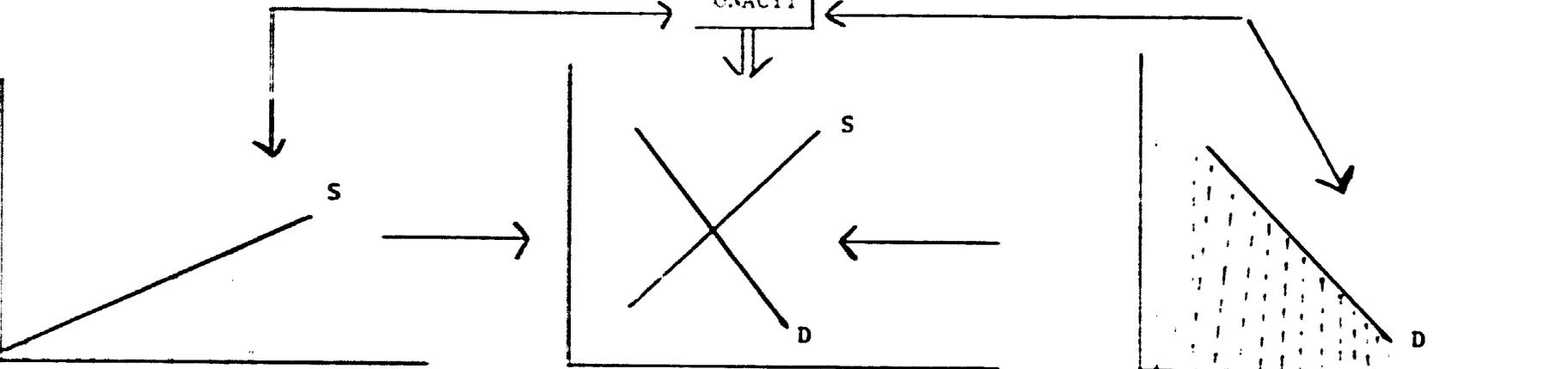
2. Ecuador's Science and Technology System

As depicted in Figure 2, Ecuador's science and technology (S&T) system approximates a typical demand and supply situation, where the market for S&T is influenced by demand, supply, and policy factors. At the center of the system is CONACYT, whose policy decisions directly impact on the suppliers and users of S&T. Private firms, public sector agencies, local universities, Title XII institutions, and other international centers make up the main suppliers of S&T, while specific sectors such as agriculture, health, education, and housing comprise the users of S&T for Ecuador's development.

NATIONAL DEVELOPMENT

OBJECTIVES

CONACYT



SUPPLIERS OF S&T

- Private Sector R&D
- Universities R&D
- Public Sector R&D
- Title XII Universities
- Other International R&D Activities

Market for Science & Technology

USERS OF S&T

- Sectoral Specific Demand for R&D
- Agriculture, Rural Development
 - Agroindustries
 - Health
 - Education
 - Housing
 - etc.

Figure 2: Ecuador's Science and Technology System

Within the specific area of agricultural and rural development, the system is supportive of the S&T needs of integrated rural development; the food needs of Ecuador's growing population; and processing, storage, and marketing. Thus CONACYT was not intended to become the COE's official spokesman for agricultural REE activities (see AID/W guidance cable, Annex B, para. 1.B.) Rather, its role is to establish a policy framework and to bring users and suppliers together to make the most efficient use of S&T resources in solving Ecuador's development problems, including those of the rural sector.

3. CONACYT's Organizational Structure

CONACYT is an advisory body for the National Development Council (CONADE) in the area of S&T (see Figure 3). CONACYT's Board of Directors, the Council for Science and Technology, is chaired by the president of CONADE, who is also the Vice President of Ecuador, and consists of representatives from the Ministry of Education, the scientific community, and private and public sector R&D institutes. The primary responsibility of the Council for Science and Technology is to establish overall policies for S&T in Ecuador.

In order to carry out its policymaking, promotional, and coordinating responsibilities, CONACYT is organized around an Executive Director, three line divisions, and three support offices. As illustrated in Figure 4 the line divisions include Planning, Operations, and Rural Development. The three support offices are Administration, Finance, and Legal.

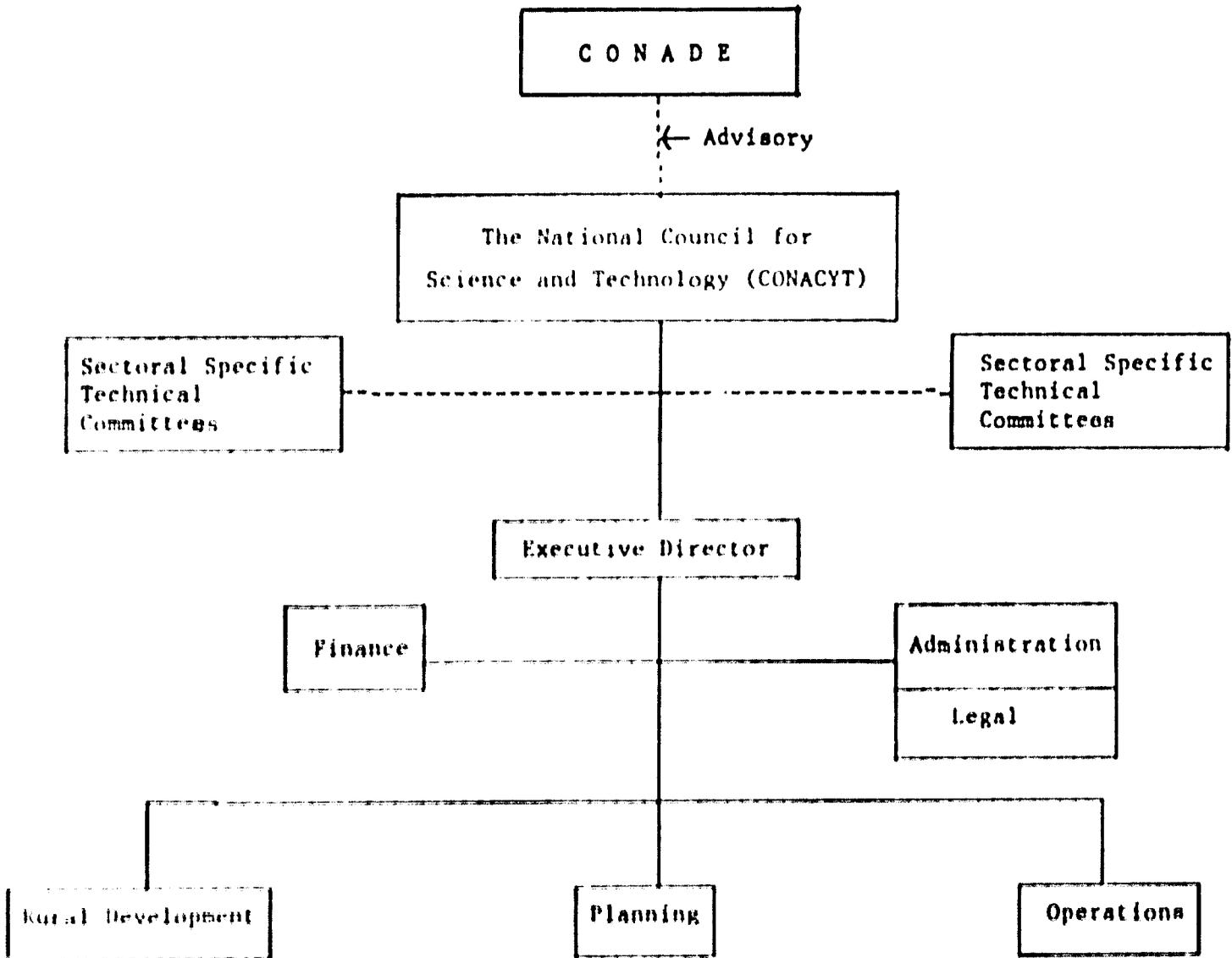
The Executive Director is the legal representative of CONACYT and exercises supervisory responsibilities over all line divisions and support offices. The Planning Division is directly responsible to the Executive Director. Its primary responsibility falls within the general areas of program planning methodologies for a more effective S&T program. This Division provides the broad guidelines along which the other two line divisions operate. The Operations Division assists the Executive Director to define S&T functions and coordinates and supervises those plans for S&T development approved by the Council for Science and Technology. The Rural Development Division (RDD) assists the Executive Director on those S&T activities which have a rural focus. Additionally, the RDD acts as the Technical Secretariat to the Technical Committee for Rural Development/Agriculture. The RDD is responsible for implementing the ICPS Project.

In CY 1982, CONACYT's total budget is \$/. 75 million (US\$ 3.0 million) of which 79 percent (\$/. 59 million) is allocated to S&T program activities (including the ICPS) and 21 percent (\$/. 16 million) is spent on operating expenses. The current professional staff totals 22 and is projected to increase to 27 with the hiring of the five RDD project specialists. Additionally, CONACYT has a pool of ten support personnel (secretaries, drivers, etc.).

4. The ICPS Project and CONACYT

The ICPS Project will affect all aspects of CONACYT's S&T mandate. Particular emphasis, however, is placed on developing a rural focus within

Figure 3: CONACYT's Administrative Structure



CONACYT's S&T program. As such the RTIS relies on and supports other line divisions within CONACYT. Planning goals and targets, for example, are established only after considerable discussions between the Rural Development Division and the Planning Division and always within the overall conceptual framework outlined by CONACYT's Executive Director and the policies of the Council for Science and Technology.

The RTIS Project has been successful in establishing the groundwork for an effective S&T infrastructure for rural Ecuador. With the assistance of the University of Florida, selection criteria and operational procedures have been defined, a substantial subproject demand has been generated from Ecuador's REE institutions, and the system for rural technological change is being implemented.

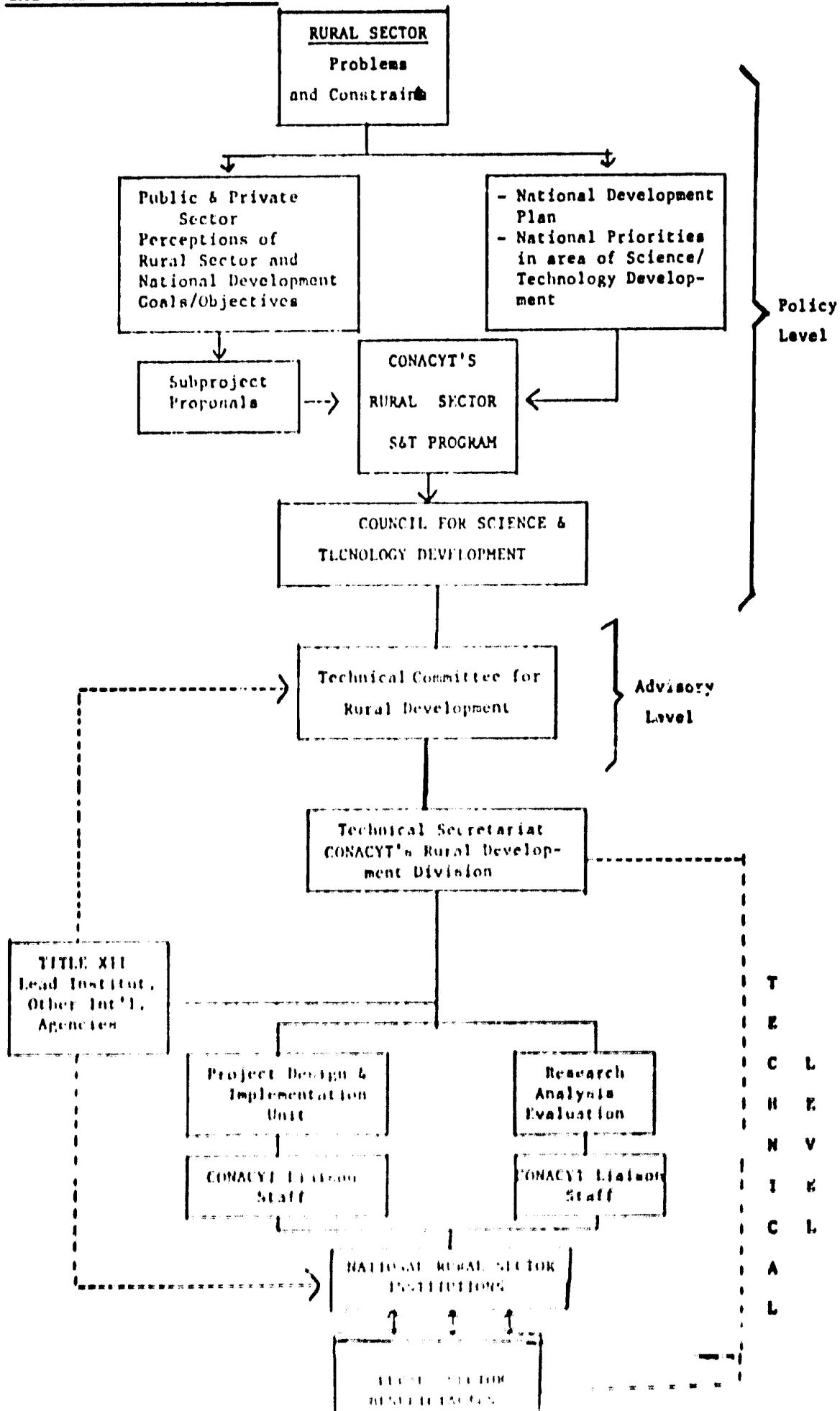
As can be seen in Figure 4, the system involves three levels of operations: policy, advisory, and technical. The Council for Science and Technology is the policy and decision-making level of CONACYT. Its basic function is to develop science and technology policies which ensure that (1) S&T applications are in conformity with the National Development Plan, and (2) there is an adequate base of trained human resource for S&T development. Additionally, it is the responsibility of this Council to adopt methodologies for selection, evaluation, and adaption of foreign technology in Ecuador.

The Technical Committee for Rural Development/Agriculture represents the advisory level of CONACYT. It is composed of representatives of such agricultural/rural development institutions as INIAP, BNF, ITCAC, the Agricultural Faculties, etc. It is the responsibility of this committee to:

- participate in the development of S&T for agriculture/rural development;
- evaluate project proposals in the area of agricultural/rural development;
- inform CONACYT on the institutional capacity of agricultural/rural development research agencies;
- recommend those institutions which should implement S&T projects in agricultural/rural development;
- evaluate CONACYT's portfolio of agricultural/rural development projects;
- recommend methods for training and technical assistance in the area of S&T related to agriculture/rural development; and
- inform CONACYT on the acceptability of introducing foreign technology in Ecuador.

The Rural Development Division serves as the technical secretariat to the rural technology transfer system and CONACYT's science and technology program for agriculture/rural development. Its staffing pattern calls for a Director, two subdivision chiefs who are responsible for subproject design, development, coordination, research, and evaluation, and five project

Figure 4: The RTIS within CONACYT



specialists. The RDD is the heart of the rural technology transfer system; as such, it is responsible for monitoring subproject success and assisting the Technical Committee for Rural Development/Agriculture in carrying out its overall duties and responsibilities.

The key implementation component of the rural technology transfer system is the participating agencies (e.g., MAG, BNF, INIAP, INERHI, IERAC). These entities, working under the guidance of the RDD, are responsible for the actual implementation of the S&T strategy inherent in each subproject.

An integral part of the rural technology transfer system within CONACYT is the lead Title XII institution and the advisory role that it plays for the RDD and the Committee for Rural Development/Agriculture. The University of Florida was selected from among 14 universities on the short list provided by the Title XII BIFAD Staff. In-country presence of the University of Florida started in June 1981 with the arrival of the Chief of Party. It is the responsibility of the University of Florida to assist the RPTIS Project in achieving its institutional objectives at all levels. The University of Florida advisors provide advice on the most cost-effective use of project funds and assure the professional integrity of the S&T program in agriculture/rural development within CONACYT.

It should be pointed out that USAID's activities with CONACYT are not limited to the RPTIS Project. To assist CONACYT to better define its institutional role and the broader S&T needs of Ecuador, the National Academy of Sciences, with AID/W funding, will provide a long-term advisor to the Planning Division. This cooperation is being coordinated with AID/W's Science and Technology Bureau.

5. Conclusion

As can be appreciated from the above discussion, the RPTIS Project is playing a catalytic role in the institutional development of CONACYT. At the same time, the project is setting the foundation for technology change to take place within Ecuador's rural sector. This is being accomplished by supporting a balanced and integrated program designed to strengthen Ecuador's rural sector institutions and human resource base, and by coordinating activities which generate and diffuse technologies appropriate for the changing conditions of a growing rural sector. The RPTIS Project is also designed as an open system that allows CONACYT to tap both internal and external S&T sources of technical and financial assistance such as Title XII institutions, development banks, international foundations, etc. By the end of the project, CONACYT's rural S&T program should be a model worthy of replication within the developing world.

IV. IMPLEMENTATION AND EVALUATION

A. Revised Implementation Schedule

The schedule of key events under the revised RTTS Project is as follows:

General

- Project Loan Agreement signed June 30, 1982
- First regular evaluation completed October 30, 1982
- Regular evaluation completed October 30, 1983
- Regular evaluation completed October 30, 1984
- Intensive evaluation completed June 30, 1985
- Regular evaluation completed October 30, 1986
- PACD September 30, 1987
- Final evaluation Completed December 30, 1987

CONACYT's Institutional Development

1. Short-term orientation visit to University of Florida June 1982
2. CONACYT initiates contracting for six R&D positions July 1982
3. Arrival of two vehicles for CONACYT July 1982
4. Procurement for two additional vehicles and office equipment initiated August 1982
5. Audio Visual Program Development for Project and CONACYT September 1982
6. Procedures approved for Small Projects and Private Sector R&D accounts October 1982
7. R&D Project Specialist hired with AID funding October 1982
8. R&D fully staffed (8 positions) January 1983
9. Short-term in-country training April 1983
10. Arrival of vehicles and equipment August 1983
11. CONACYT assumes salary of R&D specialist hired with AID funds September 1983
12. Long-term training initiated for one CONACYT employee January 1984

13. Short-term training outside Ecuador on Agricultural Project Management April 1984
14. Final procurement of CONACYT material and equipment completed June 1984
15. Termination of Title XII long-term technical assistance contract September 1985
16. AID funds fully committed for subprojects, small subprojects, and private sector R&D activities June 1986

Subproject Portfolio

1. Continuation of activities under the IERAC, COMSA, IDAPA, Bean Research Subprojects
2. Approval of two additional subprojects December 1982
3. Approval of three additional subprojects September 1983

CONACYT provides USAID with an annual implementation plan showing all anticipated activities during the year and estimated costs. The selection and implementation of subprojects by CONACYT is described below. Each approved subproject has its own implementation schedule. With regard to the special accounts, three or four small projects and one or two private sector R&D loans are expected to be approved annually from FY 1983 through FY 1985.

The revised P&D of September 30, 1987 represents a two-year extension of the project.

B. Subproject Formulation, Evaluation, and Selection

A OIE or a private institution interested in carrying out a subproject under the IPID first consults with CONACYT to determine whether the idea is consistent with CONACYT's priorities for rural science and technology. The institution then proceeds with the formulation of the subproject which in many cases will involve the participation of CONACYT as well as University of Florida personnel in Ecuador. In some cases outside technical assistance may be required for subproject formulation. This assistance will be provided by the University of Florida under a task order from its own personnel, from other Title XII institutions, or from local sources when available and adequate. This assistance will be financed under the project development support line item included in the CONACYT institutional development budget. Consultations are also held at this time with USAID to assure that the subproject objectives are consistent with USAID strategy.

Subproject formulation involves two levels of documentation: a preliminary subproject profile and a subproject paper. This is to avoid the investment of substantial resources by a participating institution in the

detailed formulation of a subproject that might eventually not qualify for selection. Thus, the profile step involves the presentation of a preliminary document that contains basic information while the subproject paper contains complete details and analysis. This process of subproject formulation contributes to strengthening the technical capacity of the personnel both within CONACYT and the participating institutions, thus furthering the overall goal of institution building.

The initial screening is performed by CONACYT's Technical Committee for Rural Development/Agriculture which meets periodically to review the portfolio of subproject profiles. It is at this point that a formal decision is made as to whether the proposed subproject conforms to a set of priorities based on national development goals. As discussed in Section II.E.2., this process has not functioned well to date because of a lack of well-defined priorities, staff, and organization. An important objective of this project is to institutionalize the process which ensures that, given subproject proposals well in excess of funding, only those subprojects are approved which contribute most to the achievement of priority development goals.

The detailed proposals are evaluated by the Rural Development Division with the assistance of the University of Florida field staff. In some cases when specialized expertise is required that is not available from these two sources, the University of Florida with CONACYT's approval will procure it from outside sources such as those previously mentioned. Here again, consultations take place with USAID before any recommendations are made as to their approval.

The set of evaluation criteria detailed in the original Project Paper has been refined by CONACYT with the assistance of the University of Florida. These criteria help assure that subprojects meet the objectives of the RTIS Project, namely, institution building, technology development and dissemination, and human resources improvement. They are applied to both the subject matter of the subproject and to its potential results. The criteria applied to the subject matter of the subproject consider the following elements:

- Relevance of the subproject to the national policies and priorities with respect to socio-economic as well as scientific and technological development.
- Possible policy or legal consequences of its implementation.
- Technical and scientific feasibility reflected by:
 - a. Importance of the subproject within its field.
 - b. Degree of knowledge reflected in the project formulation.
 - c. Available information.
 - d. Institutional capabilities.
 - e. The state of the art.
 - f. The methodology proposed.
 - g. Beneficiaries.

- h. Ecological and physical consideration.
- i. Possible interinstitutional linkages.
- j. Appropriateness of mechanisms for dissemination of results.

The criteria applied to the results of the subproject consider the impact of those results on the following fields:

- Scientific
- Technological
- Social
- Economic
- Political
- Cultural
- Administrative
- Environmental

In order to systematize the application of these criteria to the different subprojects, a form has been designed for use by the institutions in the submission of subprojects (see Annex F). A set of points and weights is applied to the criteria in order to calculate a final score for each subproject; this provides a way to rank subprojects.

Due to the difficulty of obtaining relevant data, particularly in those subprojects dealing with generation or dissemination of new technology, rigorous economic analysis will not be undertaken as was implied in the Project Paper (p. 59).^{*} Instead, the subproject papers will describe in detail how and to what extent the subproject activities are expected to affect key economic variables such as incomes, generation or saving of foreign exchange, and employment. The evaluation will be more concerned with the logic of the economic argument than with the precise magnitudes of the expected benefits. The papers will also contain technical, financial, and social analyses. In certain subprojects such as fruits and vegetable development, integrated pest management, etc., the preparation of a pre-subproject environmental statement will be required.

* Adaptive research, technology-related education, extension, and institution building activities are difficult and extremely expensive to subject to ex-ante cost/benefit analysis. It is therefore felt unwise to require C/B techniques as a part of the evaluation plan. A review of studies conducted in other countries reveals that the annual internal rate of return (IRR) can be as high as 96 percent on the type of R&E activities sponsored by the rural technology transfer system. Improved wheat technologies in Mexico, for example, resulted in an IRR of 90 percent during the period 1943-63 (Ardito Barletta N., "Costs and Social Benefits of Agricultural Research in Mexico", Ph.D. Dissertation, University of Chicago, 1970). A similar study conducted in Peru by Hinen on maize technologies indicated an IRR of 35-40 percent (Hinen, J., "The Utilization of Research for Development: Two Case Studies in Rural Modernization and Agriculture in Peru", Ph.D. Dissertation, Princeton University, 1972).

Recommendations are made by the CONACYT's Rural Development Division, the University of Florida, and USAID with the final approval by the Executive Director of CONACYT. A subproject agreement is then signed between CONACYT and the participating institution.

Figure 5 illustrates this process of subproject formulation, evaluation, and selection.

C. Subproject Implementation and Monitoring

Once a subproject agreement is signed between CONACYT and the participating institution, implementation begins with acquisition of equipment and arrangements for local and international training and technical assistance. For those activities which only require local resources the participating institution requests an advance equivalent to the estimated expenses for a period of three months. CONACYT considers the request and issues the advance which is then managed as a revolving fund that is replenished periodically; details are worked out between the financial directors of CONACYT and the participating institution. For those activities that will require external technical assistance or training, a task order is issued to the University of Florida which then becomes responsible for providing those services either by using its own resources or by subcontracting with other Title XII universities or other eligible U.S. or international institutes.

Participating institutions are required to submit quarterly progress reports to CONACYT regarding both technical progress and management of financial resources. These reports are made available to USAID which discusses them with CONACYT and the University of Florida advisors.

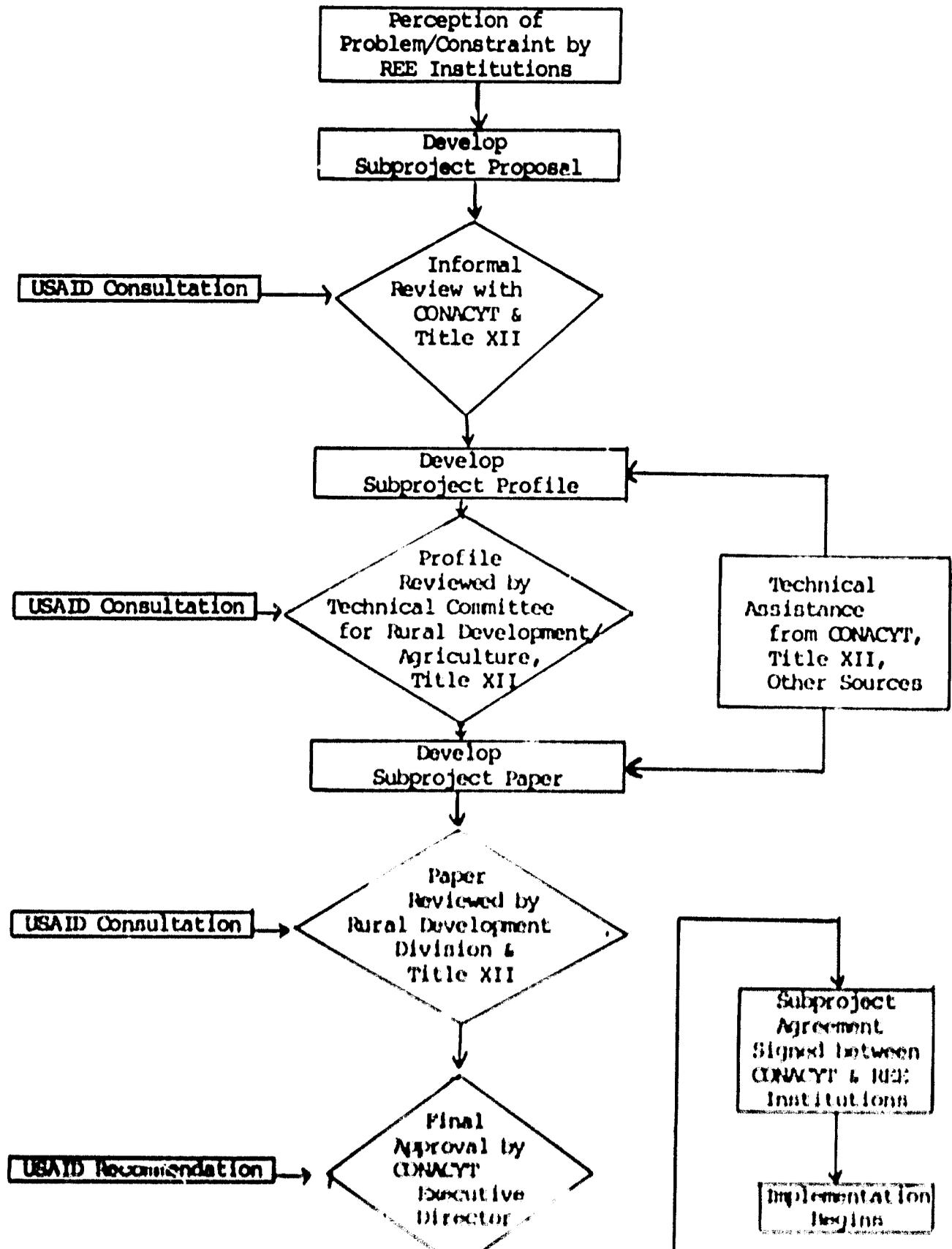
Both CONACYT and the University of Florida staff follow up the progress of the subproject through periodic meetings and field visits. Any major activities such as short courses, training programs, short-term technical assistance, and major purchases are discussed among the participating institution, CONACYT, the long-term advisors, and USAID before funding is approved by CONACYT.

The close interaction between the institutions helps assure successful implementation of the subprojects. Also, by having CONACYT and participating institution technicians work side by side with the Title XII personnel, the institution building objectives are promoted and long-term linkages are developed between Title XII institutions and Ecuadorian rural development agencies.

D. Contracting

As described in the Project Paper, the Title XII lead university is responsible for obtaining external technical assistance and training, although in certain cases, USAID may also contract directly for these services. Services will be obtained directly from the University of Florida through task orders for all CONACYT institutional development activities and for some

Figure 5: Schematic of Subproject Formulation, Evaluation, and Selection Process



subprojects. These task orders are issued by USAID if they do not exceed \$100,000, and by the AID Regional Contracting Officer if the total amount of the task order exceeds \$100,000. If the University of Florida cannot itself provide the services required for a subproject, it will subcontract to other institutions, principally other Title XII universities. Other expertise may be obtained from the USDA or international research centers. The University of Florida is also responsible for identifying and coordinating other appropriate forms of AID assistance, including centrally-funded and regional projects, and the Title XII CRSP and strengthening grants.

Procurement of imported commodities may be carried out by USAID with participation as appropriate from the AID Regional Contracting Officer, by the University of Florida under a task order, or by the participating institution. The appropriate method is determined for each case.

As indicated above, the participating institutions will procure all local goods and services needed for subproject implementation through a revolving fund administered by CONACYT. CONACYT will advise the institutions of AID regulations applicable to these procurements.

The Project Paper (p. 77) noted that it would be impractical for the GOE to enter into the core contract with the Title XII lead university because of cumbersome GOE contracting regulations and procedures. Nevertheless, CONACYT played an extremely active and valuable role in all phases leading up to the signing of the core contract with the University of Florida, including development of the scope of work, evaluation of technical proposals, selection, and negotiation. The capacity of CONACYT to carry out the most sensitive and difficult aspects of contracting foreign technical assistance was amply demonstrated.

The Project Paper also called for improvements in the GOE's contracting procedures so that CONACYT could eventually execute its own technical assistance and training contracts. A study will be conducted in FY 1983 using funds from the project development and support line item of the CONACYT institutional development budget. The purpose of this study will be to examine and clarify bonding requirements, payment mechanisms, and other legal issues that have arisen with respect to GOE contracts with Title XII universities. It is believed that on the basis of analysis and interpretation, a simpler model similar to that used for other types of contracts between the GOE and foreign technical assistance institutions could be devised within the framework of existing law.

Until these legal issues are clarified, USAID, satisfied that the main objectives of host country contracting have been met by CONACYT, proposes that all external contracting for project services continue to be performed by USAID and the University of Florida.

E. Evaluation

The Project Paper called for annual project evaluations, beginning in October 1981. Although a formal evaluation was not carried out at that time,

a management review of the project was conducted as a basis for preparing the Project Identification Document for the loan add-on. This review, a joint effort of CONACYT, USAID, University of Florida, and BIFAD personnel, focused on one of the three main project evaluation questions outlined in the Project Paper and the only one relevant to the project at that early stage. This question concerns the functioning of the RTIS and possible improvements. As a result of this review, specific actions are being proposed under the loan add-on to strengthen further the rural technology transfer system in CONACYT. Thus, although a Project Evaluation Summary was not completed, it is believed that the management review fulfilled the purpose of an evaluation at that time. Copies of the review's findings and recommendations are on file at USAID and LAC/DR.*

A formal evaluation of the project is scheduled for September and October 1982. It will come approximately two years after project start-up and 14 months after arrival of the first long-term advisor. By that time, three AID-funded subprojects will have been in operation for a year or more. The evaluation will therefore be able to address the other two questions discussed in the Project Paper. One question refers to the adequacy of the subproject selection, evaluation, and approval process. The second question concerns the effectiveness of the technical assistance and training provided under the project, particularly by the University of Florida.

The annual project evaluations will include evaluations of individual subprojects. In 1982, the evaluation will focus on the three ongoing subprojects receiving AID project funding (COMSA, IDAPA, and IEUAC). This initial subproject evaluation will be vital for identifying any weaknesses in CONACYT's ability to select sound subprojects, to support them through delivery of technical assistance and services, to manage their financing, and to monitor their progress. The exercise will also strengthen the evaluation skills of CONACYT personnel and provide them with practical insights into the problems of subproject design and implementation. The specific purposes and the methodology for subproject evaluation remain as stated in the Project Paper.

Evaluations will be carried out by a team consisting of USAID and University of Florida personnel and an outside consultant, with the active participation of the CONACYT project specialists assigned to the particular subprojects. The consultant will be hired with the project development and support funds under the CONACYT institutional development budget.

F. Conditions and Covenants

Given the follow-on nature of this project, no conditions are necessary for proper project initiation. Other conditions are necessary, however, for

* See the TNY report submitted by Dr. Morris Whitaker, Deputy Director of the Title XII BIFAD staff, dated December 1981.

the initiation of new activities planned under the loan add-on and for proper project implementation. The various conditions pertaining to loan funds are:

Condition Precedent to Disbursement for Subprojects Under the Small Subprojects Account and the Private Sector Research & Development Account

Prior to any disbursement under the Loan, or the issuance by AID of documentation pursuant to which disbursement will be made, to finance any subproject under the Small Subprojects Account and the Private Sector Research & Development Account, CONACYT will, except as AID may otherwise agree in writing, furnish, in form and substance satisfactory to AID, the approved selection procedures and criteria and operating procedures for the Small Subprojects Account and for the Private Sector Research & Development Account.

Condition Precedent to Disbursement for New Subprojects in Calendar Year 1983 Other Than Small Subprojects Account and Private Sector Research & Development Account Subprojects

Prior to any disbursement, or the issuance of any commitment documents under the Loan to finance any new subprojects approved by CONACYT in Calendar Year 1983, other than Small Subprojects Account and Private Sector Research & Development Account subprojects, CONACYT will, except as AID may otherwise agree in writing, furnish, in form and substance satisfactory to AID, evidence that CONACYT has issued a set of priorities consistent with national development goals, for use in ranking subprojects to be funded under the Project, to ensure that all approved subprojects are consistent with national development objectives.

Recurring Conditions Precedent to Disbursement for Subprojects

(a) Prior to any disbursement under the Loan, or the issuance by AID of documentation pursuant to which disbursement will be made, to finance any subproject other than subprojects funded under the Small Subprojects Account and the Private Sector Research & Development Account, CONACYT will, except as AID may otherwise agree in writing, furnish, in form and substance satisfactory to AID, evidence that CONACYT has for each subproject: a detailed description of the subproject, a technical, economic, social and, where appropriate environmental analysis, an implementation plan and a financial plan.

(b) Prior to any disbursement under the Loan, or the issuance by AID of documentation pursuant to which disbursement will be made, to finance any subproject under the Small Subprojects Account and the Private Sector Research & Development Account, CONACYT will, except as AID may otherwise agree in writing, furnish, in form and substance satisfactory to AID, evidence that CONACYT has a description of the subproject, including the specific objectives and their relevance to the principal objectives of the Project, an implementation plan and a budget.

Furthermore, the GOE shall covenant that, unless AID otherwise agrees in writing:

1. it will make available for RTIS Project activities and for rural science and technology activities, annual funds of amounts jointly agreed upon by AID through a science and technology budget item or through a fund for CONACYT.

2. it will provide the Rural Development Division of CONACYT with a staff of seven professionals by January 1, 1983, one additional professional staff member by September 30, 1983, and a minimum staffing level of eight professionals through the remaining life of the Project.

3. it will provide to AID, in form and substance satisfactory to AID, by February 15 of each calendar year of the Project, an implementation plan for that year which will include a list of anticipated subprojects and other activities to be funded, an estimated budget for all subprojects and activities and other anticipated local cost items.

CONSEJO NACIONAL DE CIENCIA Y TECNOLOGIA
CONACYT

Quito, 25 de febrero de 1982

Nº D.R. 000182

Señor
John Sambrailo
DIRECTOR
USAID/Ecuador
Presente

Estimado señor Sambrailo:

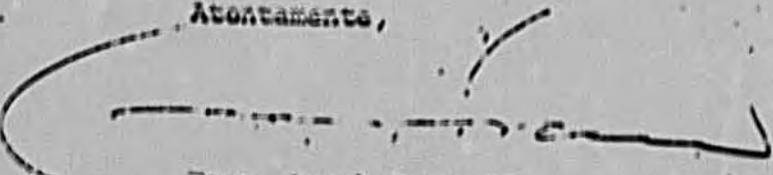
Sírvase tomar nota que la presente comunicación expresa nuestra conformidad con el contenido del documento preparado conjuntamente entre nuestro personal y el de su oficina de Desarrollo Rural, titulado "Documento para la identificación del Proyecto Sistema de Transferencia de Tecnología Rural, préstamo adicional".

Sin embargo, en la revisión del texto definitivo del proyecto, en caso de ser aprobado este perfil, nos permitiremos hacer algunas precisiones para definir el alcance que debe tener el documento.

En consecuencia, solicito a usted se sirva disponer el trámite correspondiente a fin de que la oficina de AID en Washington considere la posibilidad de financiar hasta cinco millones de dólares, para reforzar las actividades de investigación y transferencia de tecnología rural que el CONACYT está ejecutando a través del Convenio AID-518-0032.

Reciba nuestro especial agradecimiento por el interés y decidida colaboración que su institución está ofreciendo al CONACYT.

Atentamente,



Econ. Angel Xatovelle
DIRECTOR EJECUTIVO, a.i.

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TAGS:
SUBJECT: DAEC REVIEW OF RURAL TECHNOLOGY TRANSFER SYSTEM (RTTS) LOAN ADD-ON PID.

1. THE SUBJECT PID WAS REVIEWED AND APPROVED BY THE DAEC ON DECEMBER 22, 1981. THE FOLLOWING ISSUES SHOULD BE ADDRESSED DURING PREPARATION OF PP AMENDMENT:

--A. OTHER DONOR COORDINATION: DURING THE DAEC IT BECAME CLEAR THAT ALTHOUGH NO OTHER DONORS ARE NOW READY TO PROVIDE FUNDING FOR THE RTTS, THE MISSION IS COUNTING ON FUTURE FUNDING FROM OTHER DONORS, PARTICULARLY THE IDB, TO ENSURE THE CONTINUATION OF THE SYSTEM BEYOND THE LIFE OF THE PROPOSED PROJECT. AID/W EXPECTS THAT THESE ANTICIPATED CONTRIBUTIONS FROM OTHER DONORS WILL SUBSTITUTE FOR A.I.D. FUNDS DIRECTED AT INSTITUTIONALIZING THE ENTITY, CONACYT, AND THE MECHANISM, RTTS. BASED ON THIS EXPECTATION, APPROVAL OF FUTURE A.I.D. FUNDING, BEYOND THE LIFE OF THE PROPOSED LOAN ADD-ON, WILL BE CONSIDERED FOR SPECIFIC SUB-PROJECTS ONLY. IT IS RECOMMENDED THAT SUB-PROJECTS WHICH COULD SERVE AS RESEARCH, EXTENSION AND/OR EDUCATION (REE) MODELS, REPLICABLE ON A NATIONWIDE BASIS, BE CONSIDERED PRIORITY CANDIDATES IF FUTURE A.I.D. FUNDS WERE TO BECOME AVAILABLE.

--B. INSTITUTIONALIZATION OF THE RTTS: AN OBJECTIVE OF THE PROJECT IS FOR CONACYT TO BECOME THE OFFICIAL GOVERNMENT ENTITY RESPONSIBLE FOR COORDINATING ALL EXTERNAL ASSISTANCE FINANCING RESEARCH, EXTENSION AND EDUCATION (REE) AND THE RTTS TO BECOME THE OFFICIAL MECHANISM THROUGH WHICH THIS ASSISTANCE IS CHANNLED. HOWEVER, TO DATE, CONACYT HAS NOT BEEN NAMED BY THE GOE AS THE OFFICIAL SPOKESMAN IN THE REE FIELD. LIKEWISE, OTHER DONOR ASSISTANCE IN REE IS NOT SYSTEMATICALLY CHANNLED THROUGH THE RTTS MECHANISM. THE PP AMENDMENT SHOULD ADDRESS HOW THE RTTS IS TO BE EFFECTIVELY INSTITUTIONALIZED IN THE ABSENCE OF OFFICIAL RECOGNITION THAT IT REPRESENTS THE NATIONAL CHANNEL FOR ALL REE EXTERNAL ASSISTANCE.

--C. COUNTERPART CONTRIBUTIONS: IN LIGHT OF THE CONCERNS EXPRESSED IN THE PID ABOUT THE LIMITED CAPACITY OF CONACYT AND THE REE IMPLEMENTING AGENCIES, IT IS RECOMMENDED THAT SOME GOE COUNTERPART BE REALLOCATED TO FINANCE CORE SUPPORT TO THE RTTS, PARTICULARLY LOCAL PERSONNEL NEEDED TO IMPLEMENT AND PROVIDE ADMINISTRATIVE SUPPORT TO THE SUBPROJECTS. INSTEAD OF USING A.I.D. LOAN FUNDS AS PRESENTLY PROPOSED. HOWEVER, IN ORDER TO LEND FLEXIBILITY TO MISSION NEGOTIATIONS WITH THE GOE, THE DAEC APPROVED THE USE OF A SMALL AMOUNT OF A.I.D. FUNDS, NOT TO EXCEED DOLS 100,000, FOR THIS PURPOSE. NEVERTHELESS, IF A.I.D. FUNDS ARE USED FOR PERSONNEL COSTS, THE GOE SHOULD AGREE TO ASSUME THESE COSTS AS QUICKLY AS POSSIBLE OVER THE LIFE OF THE PROJECT.

--D. FINANCING OF SUBPROJECT DEFICITS: SOME OF THE PROPOSED PROJECT FUNDS WILL BE USED TO FINANCE SUBPROJECT DEFICITS CREATED UNDER THE ON-GOING GRANT PROJECT. WHEREAS THE DAEC AGREED WITH THIS FINANCING FOR THE PURPOSE OF

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STRENGTHENING THE INSTITUTIONAL CREDIBILITY OF THE RTTS, IN THE FUTURE, THE RTTS SHOULD ASSUME THAT ANY SUBPROJECT DEFICIT CAN AND WILL BE FINANCED BY OTHER SOURCES SUCH AS ADDITIONAL GOE CONTRIBUTIONS, CONTINGENCY FUNDS, OR A SPECIAL RESERVE THAT WOULD NEED TO BE CREATED. IN ORDER TO PROJECT FINANCIAL REQUIREMENTS, BUDGETS OF ALL SUBPROJECT COSTS SHOULD BE PRESENTED IN THE PP AMENDMENT, AS WERE INCLUDED IN THE ORIGINAL PP.

-E. PRIVATE SECTOR PARTICIPATION: BASED ON THE INTEGRAL ROLE OF THE PRIVATE SECTOR IN REE ACTIVITIES AND A.I.D.'S NEW POLICY FOCUS ON PRIVATE SECTOR INVOLVEMENT AND DEVELOPMENT, THE MISSION SHOULD ENCOURAGE PRIVATE SECTOR PARTICIPATION IN THIS PROJECT.

2. IN ORDER TO PERMIT NEGOCIATION AND SIGNATURE OF THE LOAN ADD-ON BY JUNE 30, 1992, THE MISSION HAS REQUESTED

THAT THE PROCESS BE STREAMLINED BY MISSION APPROVAL OF THE PP AMENDMENT. FOR THIS PURPOSE AND BASED ON THE FACT THAT THE FUNDAMENTAL RATIONALE, PROJECT COMPONENTS AND OPERATING AND PROCUREMENT FEATURES OF THE LOAN ADD-ON ARE THE SAME AS UNDER THE ORIGINAL ON-GOING PROJECT, AAA/LAC HEREBY REDELEGATES TO THE MISSION DIRECTOR THE AUTHORITY TO APPROVE THE PP AMENDMENT AND TO AUTHORIZE THE DOLS. 5.0 MILLION LOAN ADD-ON FOR THIS PROJECT. HAIG

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ANNEX C

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 1982 to FY 1986
Total U.S. Funding \$ 10,300,000
Date Prepared: April 30, 1987

Project Title & Number: Rural Technology Transfer System Project Paper Amendment.-518-0032

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: (A-1)</p> <p>Increase food production, employment, and incomes, and otherwise improve the well-being of the rural poor.</p>	<p>Measures of Goal Achievement: (A-2)</p> <p>Increased productivity, employment, incomes, and improvement in the quality of life for the beneficiaries of the various subprojects, according to the objectives and analyses of the individual subprojects.</p>	<p>(A-3)</p> <p>Baseline and follow-on data on economic and social benefits will be gathered from individual subprojects. The Project evaluations will draw conclusions about the economic and social effects of the projects and from them draw macro conclusions about the economic and social effects of the Project as a whole.</p>	<p>Assumptions for achieving goal targets: (A-4)</p> <ol style="list-style-type: none"> 1. Continuation of the GOE commitment to eliminate rural poverty and to increase agricultural production. 2. A political environment conducive to conducting rural development projects of this nature. 3. No adverse weather or macro-economic conditions.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

L. No. of Project: _____
From FY 1982 to FY 1986
Total U.S. Funding: \$ 1,300,000
Date Prepared: April 30, 1982

Project Title & Number: Rural Technology Transfer System Project Paper Amendment. 518-0032

PAGE 2

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Project Purpose (B-1)</p> <ol style="list-style-type: none"> Promote and support the establishment of a Rural Technology Transfer System (RTTS) - a management, administrative, and financial system which can address major sectoral constraints. Strengthen rural institutions so they are able to effectively serve the sector. This includes forming linkages among research, extension and educational institutions, developing a trained human resource base, and improving management and delivery systems and analytic and statistical capacities. Develop and disseminate technologies appropriate to the needs of small farmers and the agricultural sector in general. This includes basic and applied research, dissemination of results, improved policy analysis, and improved program planning. 	<p>Conditions that will indicate purpose has been achieved: End-of-Project status. (B-2)</p> <ol style="list-style-type: none"> CONACYT has a functioning mechanism for selecting subprojects in accordance with national science and technology priorities for the rural sector, providing them with technical and financial resources, and monitoring their implementation. Public and private REE institutions which participated in RTTS - sponsored subprojects have integrated the subproject activities into their programs and are providing them with continuing budget and staff support. The information of strong linkages between U.S. Land Grant universities and Ecuadorean institutions for provision of the external TA and training services required for the RTTS and its subprojects. 	<p>(B-3)</p> <p>Project quarterly reports and evaluation studies. Also, field trip reports and observations.</p> <p>Conferences of USAID, CONACYT and GOE entities carrying out subprojects.</p>	<p>Assumptions for achieving purpose: (B-4)</p> <ol style="list-style-type: none"> Continuation of the GOE commitment to strengthening the various rural development institutions. The making available by the GOE of sufficient resources to support the Project and to continue the RTTS after the end of the Project.

**PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK**

Life of Project: From FY 1982 to FY 1986
 Total U.S. Funding: \$ 10,300,000
 Date Prepared: APR 11 30, 1982

Project Title & Number: Rural Technology Transfer System Project Paper Amendment 518-0032

PAGE 3

NARRATIVE SUMMARY

OBJECTIVELY VERIFIABLE INDICATORS

MEANS OF VERIFICATION

IMPORTANT ASSUMPTIONS

Project Outputs: (C-1)

Magnitude of Outputs: (C-2)

(C-3)

Assumptions for achieving outputs: (C-4)

1. RTTS:
 - a. Staff on board and trained
 - b. Subprojects developed and approved.
 - c. Small subprojects approved and funded.
 - d. Private sector R&D activities approved and funded.
 - e. Funds disbursed for subprojects and other activities.

2. Subprojects:
 - a. Implemented and completed.
 - b. Professional trained.
 - c. Technicians trained.
 - d. Paraprofessionals trained.
 - e. Farmers trained.
 - f. Research activities undertaken.
 - g. Technologies tested.
 - h. Technologies demonstrated.
 - i. Technologies adopted.
 - j. Workshops, seminars, conferences, symposia held.
 - k. Data generating capacity established.
 - l. Studies undertaken on constraint areas.

- 1.a. Eight professionals and supporting clerical staff.
- 1.b. Five in addition to three previously approved.
- 1.c. Ten.
- 1.d. Six.
- 1.e. At least \$8.3 million including grant funds from original authorization.

- 2.a. Eight.
- 2.b. through 2.l.:
 These figures must be aggregated from the objectives of the individual subprojects.

The annual evaluation will look at the progress of the RTTS and at a sample of ongoing subprojects. Each individual subproject will be expected to have firm objectives, baseline data, and a budget for collecting comparative data.

Achievement of coordination among the various rural sector institutions.

A willingness by the various rural sector institutions to participate in the Project and to make the necessary personnel and resources available to carry out the subproject.

64

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title & Number: Rural Technology Transfer System Project Paper Amendment, 518-0032

Life of Project:
From FY 1982 to FY 1986
Total U.S. Funding \$10,300,000
Date Prepared: April 30, 1987

PAGE 4

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS		MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Inputs: (D-3)	Implementation Target (Type and Quantity) (D-3)		(D-3)	Assumptions for providing inputs: (D-4)
	Project	518-0032 (5000's)		
	Loan Funds	Grant Funds		
1. <u>AID Funds:</u>			AID and Project financial records, and RTTS quarterly reports.	No undue bureaucratic or technical delays in the provision of the Project inputs.
a. For CONACYT Development				
Technical Assistance	---	1,115.0		
Project Develop. & Supp.	---	450.0		
Training	80.0	---		
Equipment/Materials	118.0	2.0		
Hiring of Project Spec.	20.0	---		
Small Subprojects	200.0	---		
Private Sector R&D	300.0	---		
Inflation	70.0	145.0		
	788.0	1,712.0		
b. For subprojects:				
Technical Assistance	---	2,498.1		
Training	863.6	454.2		
Equipment/Materials	925.7	301.0		
General Support	659.4	28.0		
Inflation/Contingencies	763.3	306.7		
	2,212.0	3,588.0		
c. AID Totals:	5,000.0	5,300.0		
2. <u>Host Country Funds</u>				
a. For CONACYT Development		1,365.0		
b. For Subprojects:				
1) From participating institutions		1,958.5		
2) From CONACYT program funds		800.0		
c. Host Country Totals:		14,123.5		

AID HANDBOOK 3, App 5C(1)	FRANK NUMBER 3:41	EFFECTIVE DATE December 16, 1980	PAGE NO. 5C(1)-1
---------------------------	----------------------	-------------------------------------	---------------------

5C(1) - COUNTRY CHECKLIST

Listed below are statutory criteria applicable generally to FAA funds, and criteria applicable to individual fund sources: Development Assistance and Economic Support Fund.

A. GENERAL CRITERIA FOR COUNTRY ELIGIBILITY

1. FAA Sec. 116. Has the Department of State determined that this government has engaged in a consistent pattern of gross violations of internationally recognized human rights? If so, can it be demonstrated that contemplated assistance will directly benefit the needy?
 - A.1. The Department of State has not determined that Ecuador is a violator of human rights.
2. FAA Sec. 113. Has particular attention been given those programs, projects, and activities which tend to integrate women into the national economies of developing countries, thus improving their status and assisting the total development effort?
 2. All project designs include an analysis of the expected impact on women in the target group. An Appropriate Technology for Women Project is now close to completion. An AID/W-funded study will soon be carried out to provide a basis for future USAID programming to enhance further the benefits for Ecuadorean women.
3. FAA Sec. 481. Has it been determined that the government of the recipient country has failed to take adequate steps to prevent narcotic 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?
 3. It has not been so determined. The GOE has an active narcotics program with USG support.
4. FAA Sec. 620(b). If assistance is to a government, has the Secretary of State determined that it is not dominated or controlled by the international Communist movement?
 - (Repealed)

PAGE NO. 5C(1)-2	EFFECTIVE DATE December 16, 1980	TRANS. MEMO NO. 3:41	AID HANDBOOK 3, App 5C(1)
---------------------	-------------------------------------	-------------------------	---------------------------

- A. 5. FAA Sec. 620(c). If assistance is to a 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) the debt is not denied or contested by such government? 5. No such case is known.
6. 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? 6. No
7. FAA Sec. 620(a), 620(f), 620D; FY'82 App. Act Sec. 512, 513; ISDCA of 1981 Sec. 730. Is recipient country a Communist country? Will assistance be provided to Libya, Iraq, South Yemen, Angola, Cambodia, Cuba, Laos or Vietnam? (Food and humanitarian assistance distributed directly to the people of Cambodia are excepted). Will assistance be provided to Afghanistan or Mozambique without a waiver? Are funds for El Salvador to be used for planning for compensation, or for the purpose of compensation, for the confiscation, nationalization, acquisition or expropriation of any agricultural or banking enterprise, or property or stock thereof? 7. No
8. 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? (Repealed)

AID HANDBOOK 3, App 5C(1)	TRANS. MEMO NO. 3:41	EFFECTIVE DATE December 16, 1980	PAGE NO. 5C(1)-3
---------------------------	-------------------------	-------------------------------------	---------------------

4. 9. FAA Sec. 620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction, by mob action, of U.S. property? 9. No.
10. FAA Sec. 620(k). Does the program furnish assistance in excess of \$100,000,000 for the construction of a productive enterprise, except for productive enterprises in Egypt that were described in the Congressional Presentation materials for FY 1977, FY 1980 or FY 1981? 10. No.
11. 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? 11. No, the Administrator has not so considered.
12. FAA Sec. 620(m). Is the country an economically developed nation capable of sustaining its own defense burden and economic growth and, if so, does it meet any of the exceptions to FAA Section 620(m)? (Repealed)
13. FAA Sec. 620(o); Fishermen's Protective Act of 1967, as amended, sec. 5. If country has seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters,
 a. has any deduction required by the Fishermen's Protective Act been made?
 b. has complete denial of assistance been considered by AID Administrator?
 13. a. No.
 b. Yes.

PAGE NO. 5C(1)-4	EFFECTIVE DATE December 16, 1980	TRANS. MEMO NO. 3:41	AID HANDBOOK 3, App 5C(1)
---------------------	-------------------------------------	-------------------------	---------------------------

A. 14. FAA Sec. 620(g), FY'82 Appro.
Act Sec. 517.

14. a. No.

b. No.

(a) Is the government of the recipient country in default for more than six months on interest or principal of any AID loan to the country? (b) Is the country in default exceeding one year on interest or principal on any U.S. loan under a program for which the Continuing Resolution appropriates funds?

15. FAA Sec. 620(s). If contemplated assistance is development loan or from Economic Support Fund, 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 annual "Taking into Consideration" memo: "Yes, taken into account by the Administrator at time of approval of Agency OYB." This approval by the Administrator of the Operational Year Budget can be the basis for an affirmative answer during the fiscal year unless significant changes in circumstances occur.)

15. Yes.

16. 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?

16. No.

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

17. Payment status is current.

AID HANDBOOK 3, App 5C(1)	TRANS. MEMO NO. 3:41	EFFECTIVE DATE December 16, 1980	PAGE NO. 5C(1)-5
---------------------------	-------------------------	-------------------------------------	---------------------

A. 18. FAA Sec. 620A, FY'82 Appr. Act. Sec. 520. 18. No.
Has the country aided or abetted, by granting sanctuary from prosecution to, any individual or group which has committed an act of international terrorism? Has the country aided or abetted, by granting sanctuary from prosecution to, any individual or group which has committed a war crime?

19. FAA Sec. 666. 19. No.
Does the country object, on the basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. who is present in such country to carry out economic development programs under the FAA?

20. FAA Sec. 669, 670. 20. No
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?

B. FUNDING SOURCE CRITERIA FOR COUNTRY ELIGIBILITY

1. Development Assistance Country Criteria.

a. FAA Sec. 102(b)(4). Have criteria been established and taken into account to assess commitment progress of the country in effectively involving the poor in development, on such indexes as: (1) increase in agricultural productivity through small-farm labor intensive agriculture, (2) reduced infant mortality, (3) control of population growth, (4) equality of income distribution, (5) reduction of unemployment and (6) increased literacy.

B.1.a. AID/W has established such criteria and they have been taken into account in reinitiating the AID program in Ecuador.

PAGE NO. 5C(1)-6	EFFECTIVE DATE December 16, 1980	TRANS. MEMO NO. 3:41	AID HANDBOOK 3, App 5C(1)
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B.1. b. FAA Sec. 104(d)(1) If appropriate, is this development (including Sahel) activity designed to build motivation for smaller families through modification of economic and social conditions supportive of the desire for large families in programs such as education in and out of school, nutrition, disease control, maternal and child health services, agricultural production, rural development, assistance to urban poor and through community-based development programs which give recognition to people motivated to limit the size of their families?

B.1.b. Motivation for smaller families will result from projects designed to increase agricultural productivity and incomes, reduce infant and child mortality, and expand family planning information and services.

2. Economic Support Fund Country Criteria.

a. FAA Sec. 502B. Has the country (a) engaged in a consistent pattern of gross violations of internationally recognized human rights or (b) made such significant improvements in its human rights record that furnishing such assistance is in the national interest?

2.a. Not applicable.

b. FAA Sec. 512(f). Will ESP assistance be provided to Syria?

b. Not applicable.

c. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made?

c. Not applicable.

d. FAA Sec. 620B. Will ESP be furnished to Argentina?

d. Not applicable.

71

AID HANDBOOK 3, App 5C(2)	TRANS. MEMO NO. 3:41	EFFECTIVE DATE December 16, 1980	PAGE NO. 5C(2)-1
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5C(2) PROJECT CHECKLIST

Listed below are statutory criteria applicable generally to projects with FAA funds and project criteria applicable to individual funding sources: Development Assistance (with a subcategory for criteria applicable only to loans); and Economic Support Fund.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE?
HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT?

A. GENERAL CRITERIA FOR PROJECT

1. FY'82 Appro. Act Sec. 523
FAA Sec. 634A;
Sec. 653(b).

(a) Describe how authorizing and appropriations Committees of Senate and House have been or will be notified concerning the project; (b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that amount)?

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

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?

A.1. The Project was described on a Planned Project Summary Sheet in the FY 1983 Congressional Presentation. Formal notification will be made through an Activity Data Sheet for inclusion in the Data Base that will be submitted as part of the PP Amendment.

2.a. Yes. Also financial plans are described in the original Project Paper and in this Amendment.

2.b. Reasonably firm estimates of costs are presented in this PP Amendment. Furthermore, USAID approval of subprojects will be contingent upon submission of detailed budgets.

3. No such action is required.

PAGE NO. 5C(2)-2	EFFECTIVE DATE December 16, 1980	TRANS. MEMO NO. 3:41	AID HANDBOOK 3, App 5C(2)
---------------------	-------------------------------------	-------------------------	---------------------------

- A. 4. FAA Sec. 611(b), FY'82 Appr. Act Sec. 1501. If for water or water-related land resource construction, has project met the standards and criteria as set forth in the Principles and Standards for Planning Water and Related Land Resources, dated October 25, 1973?
4. Not applicable. Approved water-related activities involve the development of water management technologies appropriate to small farmers, rather than major construction. These technologies will be disseminated through demonstrations and extensionists.
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 and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project?
5. Not applicable.
6. FAA Sec. 209. Is project susceptible of execution as part of regional or multilateral project? If so why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.
6. No. The Project is tailored to the Ecuadorean agricultural sector strategy. Subproject activities have been developed by Ecuadorean institutions to address specific institutional and technological constraints.
7. FAA Sec. 601(a). 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; and (c) encourage development and use of cooperatives, and 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.
7. The Project will improve technical efficiency in agriculture through research, education, and extension. Private initiative will be fostered through a special fund to encourage research and development of agribusiness technologies which will facilitate the commercialization of small farm produce.
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.
8. Most goods and services provided under the Project will be supplied by the U.S. Land Grant Universities and the U.S. private sector. Project funds

AID HANDBOOK 3, App 5C(?)	TRANS. MEMO NO. 3:41	EFFECTIVE DATE December 16, 1980	PAGE NO. 5C(2)-3
---------------------------	-------------------------	-------------------------------------	---------------------

A.d. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).

provided for private sector research and development will encourage U.S. investment in Ecuadorean agriculture.

9. FAA Rec. 612(b), 636(h); FY'82 Appr. Act Section 507.
~~Describe the 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 in lieu of dollars.

9. Host country contributions are approximately 50 percent of Project costs.

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

10. No.

11. FAA Sec. 601(c). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?

11. Yes.

12. FY'82 Appr. Act Sec. 521.
If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and in such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity?

12. No assistance is contemplated for export crops. Should a subproject under the Project assist export crops, USAID/E will determine before approving the subproject that the assistance does not cause injury to U.S. producers.

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

a. FAA Rec. 102(b), 111, 113, 281(a). Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-

B.1.a.(a). The basic objective of the Project is to assist small farmers through the development and dissemination of appropriate technologies. Small farmer participation will be secured through applied research of small farm production problems and through field demonstrations, field days, and training activities. The continuation of these activities will be ensured by strengthening Ecuadorean research

PAGE NO. 5C(2)-4	EFFECTIVE DATE December 16, 1980	TRANS. MEMO NO. 3:41	AID HANDBOOK 3, App 5C(2)
---------------------	-------------------------------------	-------------------------	---------------------------

B.1.a. intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions; (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; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries?

b. FAA Sec. 103, 103A, 104, 105, 106, 107. is assistance being made available; (include only applicable paragraph 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 (a) extent to which activity is specifically designed to increase productivity and income of rural poor; 103A if for agricultural research, full account shall be taken of the needs of small farmers, and extensive use of field testing to adapt basic research to local conditions shall be made; (b) extent to which assistance is used in coordination with programs carried out under Sec. 104 to help improve nutrition of the people of developing countries

education, and extension institutions. and by establishing a mechanism for the transfer of technologies from U.S. Land Grant Universities.

B.1.a.(b) Cooperatives will be encouraged whenever appropriate. In many cases, assistance to small farmers will be channeled through farmer organizations.

B.1.a.(c) The Project will contribute to the strengthening of Ecuadorean institutions which will be able to continue addressing rural development problems after the termination of AID assistance.

B.1.a.(d) Rural women will benefit from improved agricultural technologies and training by virtue of their primary responsibility for most small farm activities in Ecuador. Efforts will be made through the subprojects to sensitize male researchers and technicians to the role of women in agriculture.

B.1.a.(e) Regional cooperation will be encouraged through visits to research and educational facilities, and by making research results available to other countries in the region.

B.1.b.(1)(a) The Project stresses the development of institutions which serve small farmers through the generation and dissemination of technologies which improve small farm productivity, and through policies which provide increased incentives to small farmers. Most subprojects will focus on applied research using field testing and demonstrations to develop technologies appropriate to small farmers. Many subprojects will address the technological needs of specific areas of Ecuador.

b.(1)(b) Several proposed subprojects would promote production of foodstuffs (vegetables, fruits, fish) that would improve the diet of the rural poor and be available in urban markets.

75

AID HANDBOOK 3, App 5C(2)	FRANK MEMO NO. 3:41	EFFECTIVE DATE December 16, 1980	PAGE NO. 5C(2)-5
---------------------------	------------------------	-------------------------------------	---------------------

B.1.b.(1) through encouragement of increased production of crops with greater nutritional value, improvement of planning, research, and education with respect to nutrition, particularly with reference to improvement and expanded use of indigenously produced foodstuffs; and the undertaking of pilot or demonstration of programs explicitly addressing the problem of malnutrition of poor and vulnerable people; and (c) extent to which activity increases national food security by improving food policies and management and by strengthening national food reserves, with particular concern for the needs of the poor, through measures encouraging domestic production, building national food reserves, expanding available storage facilities, reducing post harvest food losses, and improving food distribution.

(2) [104] for population planning under sec. 104(b) or health under sec. 104(c); if so, (i) extent to which activity emphasizes low-cost, integrated delivery systems for health, nutrition and family planning for the poorest people, with particular attention to the needs of mothers and young children, using paramedical and auxiliary medical personnel, clinics and health posts, commercial distribution systems and other modes of community research.

(4) [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;

B.1.b.(1)(c) Proposed subprojects would promote production of basic grains; develop technologies to manage pests and reduce post-harvest losses through improved handling, storage, and processing; and strengthen agricultural policy analysis and statistics which in turn will improve the management of national food stocks.

PAGE NO. 5C(2)-6	EFFECTIVE DATE December 16, 1980	VERSION NO. 3:41	AID HANDBOOK 3, App 5C(2)
---------------------	-------------------------------------	---------------------	------------------------------

8.1.b.(4) and (ii) extent to which assistance provides advanced education and training of people in developing countries in such disciplines as are required for planning and implementation of public and private development activities.

(5) [106; ISDCA of 1980, Sec. 304] for energy, private voluntary organizations, and selected development activities; if so, extent to which activity is: (i) (a) concerned with data collection and analysis, the training of skilled personnel, research on and development of suitable energy sources, and pilot projects to test new methods of energy production; (b) facilitative of geological and geophysical survey work to locate potential oil, natural gas, and coal reserves and to encourage exploration for potential oil, natural gas, and coal reserves; and (c) a cooperative program in energy production and conservation through research and development and use of small scale, decentralized, renewable energy sources for rural areas;

(ii) technical cooperation and development, especially with U.S. private and voluntary or regional and international development organizations;

(iii) research into, and evaluation of, economic development process and techniques;

(iv) reconstruction after natural or man-made disaster;

(v) for special development problems, and to enable proper utilization of earlier U.S. infrastructure, etc., assistance;

(vi) 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.

AID HANDBOOK 3, App 5C(2)	FRANK MEMO NO. 3:41	EFFECTIVE DATE December 16, 1980	PAGE NO. 5C(2)-7
---------------------------	------------------------	-------------------------------------	---------------------

- B.1. c. [107] is appropriate effort placed on use of appropriate technology? (relatively smaller, cost-saving, labor using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor.)
- d. FAA Sec. 110(a). Will the recipient country 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)?
- e. 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"?
- f. FAA Sec. 281(h). 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 civil education and training in skills required for effective participation in governmental processes essential to self-government.
- g. FAA Sec. 122(h). 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?
2. Development Assistance Project Criteria (Loans Only)
- a. FAA Sec. 122(b). Information and conclusion on capacity of the country to
- c. The Project is specifically designed to develop, demonstrate, and disseminate technologies appropriate to the needs of small farmers.
- d. Yes. The GOE and private Ecuadorean institutions will contribute over 50 percent of total project costs.
- e. The Project does not provide grant capital assistance.
- f. The Project fulfills an expressed GOE need. It provides training and assistance to strengthen institutions and human resources. Some training will involve management of GOE programs for the achievement of national development goals.
- g. The technologies disseminated under the Project will increase the productive capacity of small farmers. The technology transfer system established by the Project will facilitate the continual flow of technology and thus support self-sustained growth.
- 2.a. USAID has reviewed the GOE's capacity to pay this and other development assistance loans and has concluded that the GOE is able to repay the loan.

PAGE NO. 5C(2)-8	EFFECTIVE DATE December 16, 1980	FRANCHISE NO. 3:41	AIR HANDBOOK 3, App 5C(2)
---------------------	-------------------------------------	-----------------------	---------------------------

8.2.a repay the loan, at a reasonable rate of interest.

b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan?

b. Not applicable.

3. Project Criteria Solely for Economic Support Fund

a. FAA Sec. 531(a). Will this assistance promote economic or political stability? To the extent possible, does it reflect the policy directions of FAA Section 102?

3.a. Not applicable.

b. FAA Sec. 531(c). Will assistance under this chapter be used for military, or paramilitary activities?

b. Not applicable.

AID HANDBOOK 3, App 5C(3)	TRANS. MEMO NO. 3:41	EFFECTIVE DATE December 16, 1980	PAGE NO. 5C(3)-1
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5C(3) - STANDARD ITEM CHECKLIST

Listed below are the statutory items which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by imposing limits on certain uses of funds.

These items are arranged under the general headings of (A) Procurement, (B) Construction, and (C) Other Restrictions.

A. Procurement

- | | |
|---|---|
| <p>1. <u>FAA Sec. 602.</u> Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed?</p> <p>2. <u>FAA Sec. 604(a).</u> Will all procurement be from the U.S. except as otherwise determined by the President or under delegation from him?</p> <p>3. <u>FAA Sec. 604(d).</u> If the cooperating country discriminates against U.S. marine insurance companies, will commodities be insured in the United States against marine risk with a company or companies authorized to do a marine insurance business in the U.S.?</p> <p>4. <u>FAA Sec. 604(e).</u>
If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.)</p> <p>5. <u>FAA Sec. 603.</u> Is the shipping excluded from compliance with requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 per centum of the gross tonnage of commodities</p> | <p>A.1. Most services will be carried out by U.S. Land Grant Universities under Title XII of the F.A.A. USAID will procure commodities following AID procedures which encourage small business participation.</p> <p>2. Yes.</p> <p>3. Ecuador does not discriminate against U.S. marine insurance companies.</p> <p>4. Not applicable.</p> <p>5. No.</p> |
|---|---|

PAGE NO. 5C(3)-2	EFFECTIVE DATE December 16, 1980	TRANS. MEMO NO. 3:41	AID HANDBOOK 3, App 5C(3)
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A.5. (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S.-flag commercial vessels to the extent that such vessels are available at fair and reasonable rates?

6. FAA Sec. 621. If technical assistance is financed, to the fullest extent practicable will such assistance, goods and professional and other services be furnished from private enterprise on a contract basis? If the facilities of other Federal agencies will be utilized, are they particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?

7. International Air Transport. Fair Competitive Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will provision be made that U.S. carriers will be utilized to the extent such service is available?

8. FY'82 Appro. Act Sec. 504. If the U.S. Government is a party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States?

6. Virtually all technical assistance will be provided by or through U.S. Land Grant Universities under Title XII of the F.A.A. The lead Title XII university may subcontract to Federal agencies for services which cannot be obtained from the universities or private consultants.

7. Yes, the Project Agreement will so state.

8. Yes.

B. Construction

FAA Sec. 601(d). If capital (e.g., construction) project, are engineering and professional services of U.S. firms and their affiliates to be used to the maximum extent consistent with the national interests?

B.1. Not applicable.

AID HANDBOOK 3, App 5C(3)	TRANS. MEMO NO. 3:4	EFFECTIVE DATE December 16, 1980	PAGE NO. 5C(3)-3
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8. 2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable? 2. Yes.

3. FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed \$100 million? 3. Not applicable.

C. Other Restrictions

1. FAA Sec. 122(b). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter? C.1. Yes.

2. FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights? 2. Not applicable.

3. FAA Sec. 620(h). Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-bloc countries? 3. Yes. Arrangements preclude activities as stated.

4. Continuing Resolution Sec. 514 If participants will be trained in the United States with funds obligated in FY 1981, has it been determined either (a) that such participants will be selected otherwise than by their home governments, or (b) that at least 20% of the FY 1981 fiscal year's funds appropriated for participant training will be for participants selected otherwise than by their home governments? 4. Not applicable.

46

PAGE NO. 5C(3)-4	EFFECTIVE DATE December 16, 1980	TRANS. MEMO NO. 3;41	AID HANDBOOK 3, App 5C(3)
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C. 5. Will arrangements preclude use of financing? 5. Yes.

a. FAA Sec. 104(f). To pay for performance of abortions as a method of family planning or to, motivate or coerce persons to practice abortions; to pay for performance of involuntary sterilization as a method of family planning, or to coerce or provide financial incentive to any person to undergo sterilization?

b. FAA Sec. 620(g). To compensate owners for expropriated nationalized property?

c. FAA Sec. 660. To provide training or advice or provide any financial support for police, prisons, or other law enforcement forces, except for narcotics programs?

d. FAA Sec. 662. For CIA activities?

e. FAA Sec. 636(i). For purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained.

f. FY'82 Appro. Act Sec. 503.
To pay pensions, annuities retirement pay, or adjusted service compensation for military personnel?

g. FY'82 Appro. Act Sec. 505.
To pay U.N. assessments, arrearages or dues.

h. FY'82 Appro. Act Sec. 506.
To carry out provisions of FAA section 209(d) (Transfer of FAA funds to multilateral organizations for lending.)

i. FY'82 Appro. Act Sec. 510.
To finance the export of nuclear equipment fuel, or technology or to train foreign nationals in nuclear fields?

83

AID HANDBOOK 3, App 5C(3)	TRANS. MEMO NO. 3:41	EFFECTIVE DATE December 16, 1980	PAGE NO. 5C(3)- 5
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c.5. j. FY'82 Appro. Act Sec. 511.

Will assistance be provided for the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights?

k. FY'82 Appro. Act Sec. 515.

To be used for publicity or propaganda purposes within U.S. not authorized by Congress?

SUBPROJECT SUMMARIES

This annex contains summaries and detailed budgets for all subprojects currently before CONACYT. They are arranged by their status in the subproject review and implementation process:

- ongoing subprojects;
 - subprojects approved at the profile level;
 - subprojects that appeared in the Project Paper but have not yet been approved at the profile level; and
- newly proposed subprojects.

Full documentation of the subprojects is on file at USAID.

I. ONGOING SUBPROJECTS

Four subprojects have been approved by CONACYT and are being implemented. Three of these (COMSA, IDAPA, and the Bean Research CRSP) were described in the Project Paper. No major changes have been made in their plans or budgets. However, based on its success to date, an expansion of the COMSA subproject has been proposed to CONACYT.

1) Soil and Water Conservation and Management (COMSA)

Objectives: To improve the production and income of small farmers and to stem the losses in soil and water so that future generations of Ecuadorians will be able to produce effectively on their lands. To these ends the subproject is (1) developing appropriate soil and water management and conservation (COMSA) systems for small farmers through applied research; (2) training small farmer change agents in limited geographic areas in the basic principles of COMSA; (3) training Ecuadorean technicians so that a human resource base will be available for mounting a national COMSA program; and (4) developing a national conscience concerning the importance of the rational use and conservation of soil and water.

Justification: Soil and water are two essential natural resources for agriculture. However, these resources are badly misused in Ecuador. In many areas erosion is visibly destroying the soil base. Much of Ecuador is semi-arid and irrigation is a necessary component of much of the country's agriculture. However, little of the country's water resources is properly used. Much that could be put to use is wasted, and some that is used for agriculture is used improperly, contributing to the erosion problem. A combined research, education, and extension program of soil and water conservation and management will do much to improve the country's agriculture today and assure a natural resource base for the future.

165

Description: The subproject provides financial and technical assistance to INIAP's Soils Department, which is developing COMSA personnel, technologies, and extension techniques. These technologies and techniques are being passed on to other organizations, which will disseminate the technologies to small farmers. Technical assistance is being provided primarily by the Soil Conservation Service of the USDA.

During the first year of the subproject, it became apparent that the demand for training in soil conservation by private and public organizations and individual farmers far exceeded original expectations. INIAP also recognized the need for continuing assistance in overall administration of the expanding program as well as special expertise in the area of minimum cultivation. As a result, INIAP has requested a near doubling of RITS Project support for the subproject, including five person-years of technical assistance, an increased training program for technicians and farmers alike, and additional field equipment.

Budget: Initial RITS funding of \$633,600 over four years was approved. The expansion proposed by INIAP would require an additional \$565,000 for a total of \$1,198,600. It is estimated that INIAP's contribution would increase to \$1,600,500 to cover the salaries of its personnel as the subproject is extended by another year.

PROPOSED AMENDED BUDGET FOR
SOIL AND WATER CONSERVATION AND MANAGEMENT
 (\$ 000's)

	<u>GOE Contribution</u>					<u>Total</u>
	<u>1861</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	
<u>Equipment/materials</u>						
Lab materials	0.4	0.4	0.4	0.4	0.4	2.0
<u>General Support</u>						
<u>Salaries and per diem:</u>						
Director	13.5	18.0	18.0	18.0	18.0	85.5
Field technicians	73.5	140.0	140.0	140.0	140.0	633.5
Agronomists	16.8	121.6	121.6	121.6	121.6	503.2
Field workers	1.4	2.7	2.7	2.7	2.7	12.2
Resident technicians	3.1	6.2	6.2	6.2	6.2	27.9
Secretaries	3.8	5.0	5.0	5.0	5.0	23.8
Vehicle operation & maintenance	19.7	43.1	49.2	49.2	49.2	210.4
<u>Subtotals</u>	132.2	337.0	343.1	343.1	343.1	1,498.5
<u>Inflation</u>	-	-	-	34.0	68.0	102.0
<u>Totals</u>	132.2	337.0	343.1	377.1	411.1	1,600.0

Soil and Water Conservation Summary

	Original	Expansion	Total
AID(RPTS): Loan	235.4	\$ 212.0	\$ 447.4
Grant	398.2	353.0	751.2
Total	633.6	565.0	1,198.6
GOE	\$1,189.4	\$ 411.1	\$1,600.5

PROPOSED AMENDED BUDGET FOR
SOIL AND WATER CONSERVATION AND MANAGEMENT
(\$ 000's)

AID (RRTS) Contributions^{1/}

	<u>1981</u>		<u>1982</u>		<u>1983</u>		<u>1984</u>		<u>1985</u>		<u>Total</u>	
	L	G	L	G	L	G	L	G	L	G	L	G
<u>Technical Assistance</u>												
Long-term	-	-	-	44.0	-	134.0	-	111.0	-	44.0	-	333.0
<u>Training</u>												
U.S.												
M.S., Ph.D.	-	-	-	30.0	30.0	-	-	-	-	-	30.0	30.0
Short-term	-	24.0	-	24.0	16.0	-	-	-	-	-	16.0	48.0
In-country												
Technicians	-	29.4	30.0	93.8	64.4	-	10.0	-	-	-	104.4	123.2
Farmers	-	10.0	5.0	10.0	30.0	-	25.0	-	-	-	60.0	20.0
Field days	-	9.5	-	9.5	15.0	-	20.0	-	-	-	35.0	19.0
<u>Equipment/Materials</u>												
Field equipment and materials	-	60.0	20.0	30.0	65.0	-	50.0	-	-	-	135.0	90.0
Office materials	-	1.0	-	1.0	1.0	-	1.0	-	-	-	2.0	2.0
Vehicles	-	30.0	10.0	20.0	-	-	-	-	-	-	10.0	50.0
Publications/materials	-	1.0	3.0	2.0	5.0	-	6.0	-	-	-	14.0	3.0
<u>General Support</u>												
Travel, per diem	-	2.0	4.0	2.0	6.0	-	6.0	-	6.0	-	22.0	4.0
Other	-	5.0	-	4.0	3.0	-	3.0	-	-	-	6.0	9.0
<u>Subtotals</u>	-	171.9	72.0	270.3	235.4	134.0	121.0	111.0	6.0	44.0	434.4	731.2
<u>Inflation</u>	-	-	-	-	-	-	12.0	11.0	1.0	9.0	13.0	20.0
<u>Totals</u>	-	171.9	72.0	270.3	235.4	134.0	133.0	122.0	7.0	53.0	447.4	751.2

^{1/} All inputs from the approved subproject were grant-funded in 1981-82. It is assumed that in subsequent years, technical assistance would be financed with grant funds and all other inputs with loan. All additional inputs proposed under the COMSA expansion, beginning in 1982, would presumably be financed with a similar loan grant mix.

2/2

2) Small Farmer Adaptive Research and Development (IDAPA)

Objectives: (1) Generate and transfer technologies appropriate to the agro-socio-economic conditions of small farmers in different ecological zones, in order to improve small farm income and well-being; (2) Develop the most appropriate techniques for training small farmers through their organizations; (3) Train Ecuadorean technicians from various rural sector institutions in the techniques of research, extension, and education for a small farm adaptive research and development (IDAPA) system; and (4) Establish and fortify linkages among Ecuadorean research, extension, and education institutions so a IDAPA system can be built.

Justification: Agricultural technology is specific as to local crops, soils, climatic conditions, and the capabilities of farmers. Production technologies, therefore, have to be developed on the small farms themselves, using local tools and methods (often with modifications) as much as possible. Any system of developing and disseminating technologies must be flexible enough to allow for modifications at all stages when appropriate.

Description: The subproject builds upon INIAP's Adaptive Research Program which was initiated several years ago with the assistance of the University of Florida and other institutions. The subproject will conduct adaptive research and development in specific subsectors which are identified as important to small farmer development. Examples of the subsectors which IDAPA activities are expected to encompass in a coordinated way are: (1) the food basket of the rural poor, involving adaptive research on traditional noncommercial crops and small animals (e.g., quinoa, oca, mel loco, cocho, guinea pigs, rabbits); (2) marginal farmer alternative employment/production packages, integrating nonfarming activities (e.g., handicrafts, agroindustries) with farm production; (3) wool production (sheep, llamas, alpacas) as part of small farmer packages; and (4) alternative production system for arid regions, for tropical regions, and for other zones with different environmental conditions. In humid tropical areas where agroforestry is important, INIAP will closely collaborate with the activities carried out by the National Forestry Program under USAID's Forestry Development Project which will be authorized in FY 1982. The University of Florida is providing assistance and training.

Budget: AID funding for this subproject through the RITS is \$1,143,000. INIAP will contribute \$3,157,450 over the five-year life of the project, mostly for salaries.

BUDGET FOR
ADAPTIVE RESEARCH FOR SMALL FARMERS (IDAPA)
(\$ 000's)

	<u>AID (RTTS) Contribution^{1/}</u>									
	<u>1981</u>		<u>1982</u>		<u>1983</u>		<u>1984</u>		<u>Total</u>	
	L	G	L	G	L	G	L	G	L	G
<u>Technical Assistance</u>										
Long-Term-	-	-	-	90.0	-	90.0	-	-	-	180.0
Short-Term	-	18.0	-	24.0	-	18.0	-	18.0	-	78.0
<u>Training</u>										
U.S.										
Masters Degree	-	-	-	60.0	105.0	-	45.0	-	150.0	60.0
Short Courses	-	18.0	-	54.0	54.0	-	27.0	-	81.0	72.0
In-country										
Scholarships	-	18.0	-	18.0	18.0	-	18.0	-	36.0	36.0
Field days	-	3.0	-	3.0	3.0	-	3.0	-	6.0	6.0
Extensionists Course	-	20.0	-	20.0	20.0	-	20.0	-	40.0	40.0
<u>Equipment/materials</u>										
Vehicles	-	100.0	-	-	-	-	-	-	-	100.0
Field Equipment	-	7.0	-	3.0	2.5	-	2.5	-	5.0	10.0
Ag. Machinery	-	20.0	-	10.0	-	-	-	-	-	30.0
Field Materials	-	4.0	-	6.0	6.0	-	6.0	-	12.0	10.0
Office Materials	-	1.0	-	1.0	1.0	-	1.0	-	2.0	2.0
Publication Materials	-	2.0	-	2.0	2.0	-	2.0	-	4.0	4.0
<u>General Support</u>										
Per diem & Travel for Resident Technicians										
	-	7.5	-	7.5	7.5	-	7.5	-	15.0	15.0
<u>Subtotals</u>	-	218.5	-	298.5	219.0	108.0	132.0	18.0	351.0	643.0
<u>Inflation</u>	-	-	-	30.0	45.0	24.0	45.0	5.0	90.0	59.0
<u>Totals</u>	-	218.5	-	328.5	264.0	132.0	177.0	23.0	441.0	702.0

^{1/} All inputs for this approved subproject were grant-funded in 1981-82. In subsequent years, it is assumed that technical assistance will be grant-funded and all other inputs loan-funded.

90

BUDGET FOR
ADAPTIVE RESEARCH FOR SMALL FARMERS (IDAPA)
 (\$ 000's)

GOE Contribution

	<u>1980-1</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>Total</u>
<u>Technical Assistance</u>	13.0	13.0	13.0	13.0	52.0
<u>General Support</u>					
Head	15.6	15.6	15.6	15.6	62.4
Area Leaders	120.0	180.0	210.0	225.0	735.0
Program Technicians	224.0	336.0	392.0	420.0	1372.0
Secretaries	4.2	4.2	8.4	8.4	25.2
Local Travel & Per diem	30.9	30.9	30.9	30.9	123.6
Office facilities	4.8	4.8	4.8	4.8	19.2
Vehicle Maintenance	34.0	62.0	84.0	84.0	264.0
Machinery maintenance	2.2	2.2	2.2	2.2	8.8
Transport Costs	0.6	0.9	1.1	1.2	3.8
<u>Subtotals</u>	<u>449.3</u>	<u>649.6</u>	<u>762.0</u>	<u>805.1</u>	<u>2666.0</u>
<u>Inflation</u>		65.0	160.0	266.4	491.4
<u>Totals</u>	<u>449.3</u>	<u>714.6</u>	<u>922.0</u>	<u>1071.5</u>	<u>3157.4</u>

IDAPA Budget Summary

AID (RTTS):	Loan	\$ 441.0
	Grant	702.0
	<u>Total</u>	<u>1,143.0</u>

GOE 3,157.4

3) Study of Agrarian Structure in Ecuador

Objectives: To improve the Ecuadorean Institute for Agrarian Reform and Colonization (IERAC) capacity to conduct research in agrarian structure and land utilization.

Justification: IERAC's lack of an institutional capacity to address the complex issues of land use and tenure has resulted in an inability to develop a consistent and coherent strategy for dealing with Ecuador's agrarian structure problems. Consequently, paramount decision concerning policies and strategies of colonization, land reform, titling, etc. are made without considering the interrelationships between the technical, economic, social, political, and cultural aspects of land tenure and utilization.

Description: Specific research activities will examine land tenure and use patterns in two selected provinces, the problems of the minifundios, the significance of latifundios, the feasibility of group farming, and tenure problems in the integrated rural development areas. After the research is completed, workshops will be held to disseminate findings and policy recommendations, and to consider expanding the research models to other parts of Ecuador. Parallel to the applied research, an information system will be developed. This system will consist in part of computer-stored data on land tenure patterns and agricultural production. These data will serve as a baseline for analyzing the effects of reform programs. The second part of the information system is a library with materials relating to agrarian structure experience throughout the world. Technical assistance and training will be provided by the Land Tenure Center (LTC)

Budget: CONACYT approved a subproject proposal calling for RITS funding of \$795,000 (\$258,800 loan and \$536,200 loan) and counterpart of \$525,000. About 80 percent of the project funding will be directed toward applied research. The actual GOE contribution to date is estimated at \$1.2 million for the expanded personnel and administrative support that IERAC has dedicated to the subproject.

PROPOSED BUDGET FOR
STUDY OF AGRARIAN STRUCTURE
(\$ 000's)

	1982-83			1983-84			Total		
	AID/L	AID/G	GOE	AID/L	AID/G	GOE	AID/L	AID/G	GOE
<u>Technical Assistance</u>									
Long-term	-	94.1	-	-	94.1	-	-	188.2	-
Short-term:	-	-	-	-	-	-	-	-	-
Applied research	-	105.6	-	-	105.6	-	-	211.2	-
Workshops	-	19.2	-	-	19.2	-	-	38.4	-
Data Bank	-	19.2	-	-	19.2	-	-	38.4	-
<u>Training</u>									
U.S.:									
Applied research	100.0	-	-	-	-	-	100.0	-	-
Library	35.8	-	-	-	-	-	35.8	-	-
<u>Equipment/Materials</u>									
Vehicles & research									
materials	68.0	-	-	-	-	-	68.0	-	-
Computer time	5.0	-	-	5.0	-	-	10.0	-	-
Library materials	12.0	-	-	3.0	-	-	15.0	-	-
<u>General Support</u>									
Salaries for:									
Subproject co-									
ordinator	-	-	32.0	-	-	32.0	-	-	64.0
Research personnel	-	-	151.9	-	-	151.9	-	-	303.8
Workshop co-									
ordinator	-	-	9.0	-	-	9.0	-	-	18.0
Data specialists	-	-	12.7	-	-	12.7	-	-	25.4
Admin. support	-	-	27.0	-	-	27.0	-	-	54.0
<u>Contingencies</u>	30.0	30.0	29.9	-	30.0	29.9	30.0	60.0	59.8
<u>Totals</u>	250.8	268.1	262.5	8.0	268.1	262.5	258.8	536.2	525.0

Agrarian Structure Budget Summary

AID (RTTS): Loan	\$258.8
Grant	536.2
Total	<u>795.0</u>

GOE \$525.0

4) Bean Research CRSP

Objectives: To reverse the trend of production declines of beans through research that will lead to technological innovation and dissemination.

Justification: Ecuador's bean production has fallen dramatically. From 1970 to 1977, hectares planted dropped 28 percent and yields per hectare dropped 13 percent resulting in an overall drop in tons harvested of 37 percent. Domestic prices during this period rose 168 percent. Because of beans' importance as a traditional subsistence and cash crop, nitrogen fixation qualities, and nutritional value, the GOE and USAID believe it important to undertake a special subproject effort on this crop.

Description: The subproject is being carried out with the assistance of Cornell University as part of the AID centrally-funded Collaborative Research Support Program (CRSP). At least two small farm areas will be selected (tentatively, one in Imbabura Province and one in Chimborazo). An interinstitutional team will then be formed, composed of MAG extension agents from those areas, INIAP research personnel, and experts from Cornell. The team will carry out two baseline studies. One will include a complete look at varieties, soils, pests, diseases, climatic conditions, planting times and patterns, and needs for fertilizers and pesticides. The other will examine labor allocation patterns, destination of production, how beans affect family income, how beans fit into consumption patterns and nutritional status, availability of technical and financial assistance, other constraints to production, and how small farmer organization affects or could potentially affect bean production. From these studies, a plan for testing, demonstrating, and disseminating improved technologies will be formulated.

Budget: Over the first two years of the subproject, the CRSP will finance technical assistance from a social scientist and a crop production expert, and from other Cornell professors on an as-needed basis. All will be expected to provide formal and informal training to INIAP personnel as part of their work. The CRSP will also provide post-graduate study opportunities for Ecuadoreans at Cornell, as well as research equipment and materials. The estimated value of the subproject is \$238,550, including \$167,550 in CRSP grant funds, \$28,000 from Cornell University, and \$43,000 from INIAP. No RTTS funding will be required.

94

BUDGET FOR
BEAN RESEARCH (CRSP) SUBPROJECT
(\$ 000's)

Initial¹ CRSP and GOE Contribution

	1982		1983		Total	
	CRSP ²	GOE	CRSP ²	GOE	CRSP ²	GOE
<u>Technical Assistance</u>	51.8	12.4	51.8	12.4	103.6	24.8
<u>Training</u>						
U.S. - Graduate	9.3	1.1	9.3	1.1	18.6	2.2
In-country - undergraduate	-	3.0	-	3.0	-	6.0
<u>Equip./Materials</u>	43.8	1.2	9.3	1.2	53.1	2.4
<u>General Support</u>	10.1	3.8	10.1	3.8	20.2	7.6
<u>Totals</u>	115.0	21.5	80.5	21.5	195.5	43.0

- 1/ The Memorandum of Understanding from which this budget was obtained calls for a five-year subproject. However, only the first two years can be funded under the current CRSP subgrant to Cornell. Subsequent support will be subject to the availability of funds and the mutual agreement of all parties to proceed at that time.
- 2/ Includes both CRSP grant funds (total \$167,550) and Cornell University counterpart (total \$28,000).

BEAN RESEARCH BUDGET SUMMARY:

CRSP	\$ 195.5
AID (RITS)	-
GOE	43.0

9-

II. SUBPROJECTS APPROVED AT THE PROFILE LEVEL

1). University of Machala Research and Dissemination

Objectives: Support research and dissemination by the Technical University of Machala (UTM) to: (1) conserve genetic material as a means of improving native crops; (2) control insect pest damage to small farmer crops; and (3) help eradicate Brucelosis, a disease that affects both livestock and humans.

Justification: The germplasm of cultivars of several important small farm crops (beans, cassava, maize, tomatoes, peppers, peanuts) is being eroded in El Oro Province in Southwestern Ecuador. Many of these same crops plus fruit crops are also being damaged by insect pests. Finally, Brucelosis threatens the productivity of livestock through reduced weight and milk output and the loss of calves (by abortion). Brucelosis also can infect humans who come in contact with diseased cattle or who consume their beef and milk.

Description: Under the four-year germplasm activity, a technical team will be created. It will collect, classify, and preserve the native germplasm of the most promising cultivars. Genetic material and technical recommendations will then be extended to small farmers. Under the insect pest control activity, a research team will collect, identify, and create an inventory of harmful insects, as well as their parasites and predators. The team will develop chemical control techniques suitable to small farmers which will then be disseminated. The two-year Brucelosis activity will include research on the incidence of the disease in El Oro and dissemination of available methods of control to the affected areas. It is anticipated that the University of Florida will provide assistance and training.

Budget: AID would provide funding of \$135,100 for genetic conservation, \$111,300 for insect pest inventory and control, and \$44,300 for Brucelosis research and control. Allowing for inflation, the total AID (RITS) contribution would be \$334,800, primarily for training and equipment. UTM would provide salary support, facilities, and some equipment with a total value of \$446,300.

9/6

PROPOSED BUDGET FOR UNIVERSITY OF MACHALA (UTM)
(\$ 000's)

AID (RTTS) AND UTM Contributions

	1983			1984			1985			1986			1987			Total		
	L	G	UTM	L	G	UTM	L	G	UTM	L	G	UTM	L	G	UTM	L	G	UTM
Genetic Conservation																		
Technical Assistance	-	-	-	-	5.1	-	-	-	-	-	-	-	-	-	-	-	5.1	-
Training	6.2	-	-	20.9	-	-	20.2	-	-	21.8	-	-	14.1	-	-	83.2	-	-
Equip./Materials	34.3	-	0.2	0.9	-	0.5	0.9	-	0.6	0.9	-	0.6	0.9	-	0.6	37.9	-	2.6
General Support	-	-	5.1	-	-	47.7	-	-	47.7	-	-	47.7	2.2	-	46.4	2.2	-	194.6
Contingency	2.1	-	0.2	1.4	-	2.4	1.1	-	2.4	1.2	-	2.4	0.9	-	2.4	6.7	-	9.8
Activity Subtotals	42.6	-	5.5	23.2	5.1	50.7	22.2	-	50.7	23.9	-	50.7	18.1	-	49.4	130.0	5.1	207.0
Insect Inventory																		
Technical Assistance	-	-	-	-	6.3	-	-	-	-	-	-	-	-	-	-	-	6.3	-
Training	-	-	-	8.2	-	-	19.2	-	-	22.8	-	-	1.0	-	-	51.2	-	-
Equip./Materials	28.6	-	1.0	1.5	-	2.3	16.6	-	0.7	0.7	-	0.7	-	-	0.3	47.4	-	5.0
General Support	-	-	4.9	-	-	22.3	0.4	-	25.5	0.6	-	25.5	0.2	-	10.0	1.2	-	88.2
Contingency	1.4	-	0.3	0.8	-	1.2	1.7	-	1.3	1.2	-	1.3	0.1	-	0.5	5.2	-	4.6
Activity Subtotals	30.0	-	6.2	10.5	6.3	25.8	37.9	-	27.5	25.3	-	27.5	1.3	-	10.8	105.0	6.3	97.8
Brucellosis Control																		
Technical Assistance	-	-	-	-	5.1	-	-	5.1	-	-	-	-	-	-	-	-	10.2	-
Training	-	-	-	8.6	-	-	11.5	-	-	-	-	-	-	-	20.1	-	-	-
Equip./Materials	9.6	-	0.9	0.7	-	0.7	-	-	0.7	-	-	-	-	-	10.3	-	-	2.3
General Support	-	-	5.8	0.4	-	25.5	1.2	-	26.0	-	-	-	-	-	1.6	-	-	57.3
Contingency	0.5	-	0.3	0.7	-	1.3	0.9	-	1.3	-	-	-	-	-	2.1	-	-	2.9
Activity Subtotals	10.1	-	7.0	10.4	5.1	27.5	13.6	5.1	28.0						34.1	10.2	62.5	
Subproject Subtotals	82.7	-	18.7	44.1	16.5	104.0	73.7	5.1	106.2	49.2	-	78.2	19.4	-	60.2	269.1	21.6	367.3
Inflation	-	-	-	4.0	2.0	10.4	14.7	1.0	21.2	14.7	-	23.4	7.7	-	24.0	41.1	3.0	79.0
Totals	82.7	-	18.7	48.1	18.5	114.4	88.4	6.1	127.4	63.9	-	101.6	27.1	-	84.2	310.2	24.6	446.3

University of Machala Budget Summary
 AID (RTTS): LOAN \$310.2
 GRANT 24.6
 TOTAL 334.8
 UTM \$446.3

97

2) Post-Harvest Food Technologies (PITALPRO)

Objectives: (1) Reduce post-harvest food loss through the development of appropriate technology which the small farmer can use for preserving crops. (2) Generate processing and marketing technology packages which could be feasibly implemented by agroindustries.

Justification: Post-harvest losses of up to 30 percent among small farmers have been documented as a result of poor on-farm handling and storage, as well as packing and transport. Meanwhile, domestic processing capacity has not kept up with rising urban demand for processed foods, thus resulting in increased food imports. The promotion of local or on-farm processing would reduce losses while at the same time increasing the market value of small farm production.

Description: The Technical University of Ambato (UTA) will conduct research into the amount and sources of post-harvest losses, and will develop packing, storage, and processing technologies which will be disseminated to business and industry, farm groups, MAG, and other potential users. The universities of Florida and Idaho are possible U.S. counterpart institutions for this subproject.

Proposed Budget: AID would provide \$509,500 to strengthen UTA's human and physical capacity to carry out this research. UTA would contribute \$385,000 including training and investment in research equipment.

9

PROPOSED BUDGET FOR
POST-HARVEST FOOD TECHNOLOGY (PITALPRO)
(\$ 000's)

AID(RTTS) and UTA CONTRIBUTION

	1983			1985			1984			Total		
	AID/L	AID/G	UTA	AID/L	AID/G	UTA	AID/L	AID/G	UTA	AID/L	AID/G	UTA
<u>Technical Assistance</u>	-	21.5	-	-	43.1	-	-	14.4	-	-	79.0	-
<u>Training</u>												
U.S.	-	-	-	36.0	-	24.0	36.0	-	24.0	72.0	-	48.0
In-country	4.0	-	-	5.2	-	-	5.8	-	-	15.0	-	-
<u>Equipment/materials</u>												
<u>Equipment for:</u>												
Research	20.0	-	-	6.0	-	28.8	2.0	-	27.2	28.0	-	56.0
Workshop	-	-	-	24.0	-	-	-	-	-	24.0	-	-
Pilot plant	25.6	-	-	20.0	-	-	20.0	-	-	65.6	-	-
Audio-visuals	4.0	-	1.0	4.0	-	1.0	-	-	-	8.0	-	2.0
Vehicle	15.0	-	-	-	-	-	-	-	-	15.0	-	-
Publications	2.0	-	-	4.0	-	1.0	4.0	-	1.0	10.0	-	2.0
<u>General Support</u>												
Salaries	8.2	-	13.1	21.6	-	34.5	21.6	-	36.8	51.4	-	84.4
Office services	-	-	21.4	29.0	-	54.6	29.0	-	54.6	58.0	-	130.6
Other	10.0	-	5.0	12.0	-	6.0	12.0	-	6.0	34.0	-	17.0
<u>Subtotals</u>	88.8	21.5	40.5	161.8	43.1	149.9	130.4	14.4	149.6	381.0	79.0	340.0
<u>Inflation</u>	-	-	-	16.2	4.3	15.0	26.0	3.0	30.0	42.2	7.3	45.0
<u>Totals</u>	88.8	21.5	40.5	178.0	47.4	164.9	156.4	17.4	179.6	423.2	86.3	385.0

PITALPRO Budget Summary

AID (RTTS): Loan	\$423.2
Grant	86.3
Total	<u>509.5</u>
UTA	385.0

99

3) Agricultural Policy and Statistics

Objectives: To help build the capability within the GOE to determine what policies are supportive of agricultural sector goals, what statistical information is relevant to a particular policy, and how best to obtain and analyze that information for decision-making input.

Justification: The GOE suffers from a severe limitation in its ability to analyze critical agricultural policy issues and to design appropriate interventions. At the same time, Ecuador does not systematically collect and process agricultural data which is necessary for sound policy analysis.

Description: The subproject has two components: policy analysis and statistics. Under the policy analysis component, individuals in key agricultural policy-making units of the GOE will receive varying levels of training, from short courses to graduate-level studies. The statistical component will provide INEC with computer equipment for an expanded agricultural data base. Training in the use of this equipment will be linked to the processing of national area sample frames and other agricultural survey data. Through these applications, INEC personnel will be taught to collect, analyze, and present data in a manner that is useful to agricultural policy matters. The USDA will assist in the policy analysis component and a private firm will provide computer training and consultants.

Proposed Budget: Estimated AID funding for this subproject is \$1,067,900 (\$724,700 loan and \$343,200 grant). Of this total, about 60 percent is budgeted for the computer component (short-term technical assistance, training, and equipment) and the balance for the policy analysis component (primarily training). The GOE will contribute \$400,600, mostly through INEC for the salaries of new computer personnel.

PROPOSED BUDGET FOR
AGRICULTURAL POLICY AND STATISTICS
(\$ 000's)

	<u>AID (RITS) Contribution</u>											
	<u>1983</u>		<u>1984</u>		<u>1985</u>		<u>1986</u>		<u>1987</u>		<u>Total</u>	
	<u>L</u>	<u>G</u>	<u>L</u>	<u>G</u>	<u>L</u>	<u>G</u>	<u>L</u>	<u>G</u>	<u>L</u>	<u>G</u>	<u>L</u>	<u>G</u>
<u>Technical Assistance</u>												
<u>Short-term</u>												
Compute Specialist	-	83.5	-	114.0	-	111.9	-	-	-	-	-	309.4
<u>Training</u>												
<u>U.S.</u>												
L-T policy analysis	36.0	-	72.0	-	54.0	-	54.0	-	36.0	-	252.0	-
S-T policy analysis	27.0	-	18.0	-	18.0	-	-	-	-	-	63.0	-
S-T computer	17.9	-	17.9	-	19.3	-	-	-	-	-	55.1	-
<u>In-country</u>												
Policy seminars	6.0	-	6.0	-	6.0	-	6.0	-	-	-	24.0	-
Computer workshops	3.9	-	3.9	-	2.0	-	-	-	-	-	9.8	-
<u>Equipment</u>												
Computer	71.0	-	117.0	-	13.1	-	-	-	-	-	201.1	-
<u>General Support</u>												
Salary for policy specialist	15.0	-	11.3	-	7.5	-	3.8	-	-	-	37.6	-
<u>Subtotals</u>	176.8	83.5	246.1	114.0	119.9	111.9	63.8	-	36.0	-	642.6	309.4
<u>Inflation</u>	-	-	24.6	11.4	24.0	22.4	19.1	-	14.4	-	82.1	33.8
<u>Totals</u>	176.8	83.5	270.7	125.4	143.9	134.3	82.9	-	50.4	-	724.7	343.2

101

PROPOSED BUDGET FOR
AGRICULTURAL POLICY AND STATISTICS
 (\$ 000's)

GOE CONTRIBUTION

	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>TOTAL</u>
<u>General Support</u>						
Salary for policy specialist	-	3.8	7.5	11.3	15.0	37.6
Computer supervisors	48.0	48.0	48.0	48.0	48.0	240.0
Key punchers	5.8	11.6	11.6	11.6	11.6	52.2
<u>Subtotals</u>	53.8	63.4	67.1	70.9	74.6	329.8
<u>Inflation</u>	-	6.3	13.4	21.3	29.8	70.8
<u>Totals</u>	53.8	69.7	80.5	92.2	104.4	400.6

Agricultural Policy and Statistics Budget Summary

AID (RPTS): Loan	\$ 724.7
Grant	343.2
Total	\$ 1,067.9
 GOE	 400.6

4) Agricultural Training for Rural Youth (4F)

Objectives: To revitalize the 4-F Program so as to make it an effective and efficient vehicle for transferring technologies and for imparting leadership and other skills to rural youth. Specific objectives are to bring the number of clubs and members at least back up to 1973 levels, to form a cadre of trained MAG personnel dedicated to working with 4-F groups, and to assure that the training given and the activities undertaken under the 4-F Program are the most appropriate for future Ecuadorean farmers.

Justification: The 4-F program has stagnated throughout the 1970's. Whereas in 1973 there were approximately 200 clubs with some 5,000 members, today there are only 69 clubs with some 1,500 active members. There are two principal reasons for this. The first is weak support from MAG. The other reason for the stagnation has been a lack of dynamism within the 4-F Foundation. For many years the Foundation has been set in its ways, with little innovation and almost no contact with 4-F, 4-J, or 4-H Clubs or organizations in other countries. The time appears ripe for rebuilding the 4-F program into the effective and efficient vehicle for transferring technologies to rural youth that it used to be. The new Agriculture Law, passed in 1979, stresses the importance of programs for rural youth and provides for the establishment of a National Rural Youth Program Division as a separate entity within MAG, which could provide vital technical support to the 4-F.

Description: Subproject implementation will be shared by MAG and the 4-F Foundation. MAG will provide five part-time zonal coordinators and 15 part-time promoters to work in selected communities. These persons will work directly with community leaders to organize support for 4-F clubs. A credit fund will be established to finance productive projects by 4-F clubs in agriculture, livestock, agricultural enterprise, and skilled trades. The subproject will also provide workshops, vehicles, instructional equipment for the two 4-F training centers and the subproject will promote the international exchange of ideas by bringing 4-H leaders from the U.S. and other countries to Ecuador, and by sending Ecuadorean 4-F youth to live and work on family farms in the U.S. Assistance will be sought from the U.S. 4-H organization.

Proposed Budget: AID will provide \$370,000 through the RPTIS primarily for technical assistance and training. Separate AID funding under an ORG will also provide equipment, installations, and administrative support. The 4-F Foundation will contribute training facilities and establish a \$200,000 credit fund, while the MAG will provide \$290,000 for the salaries of the promoters and other administrative costs of its rural youth program.

102

PROPOSED BUDGET FOR
4-P RURAL YOUTH DEVELOPMENT
(5 000's)

AID (RTTS) Contribution

	<u>1983</u>		<u>1984</u>		<u>1985</u>		<u>1986</u>		<u>1987</u>		<u>Total</u>	
	L	G	L	G	L	G	L	G	I	G	L	G
<u>Technical Assistance</u>												
Short-term	-	30.0	-	-	-	-	-	-	-	-	-	30.0
<u>Training</u>												
In-country	40.0	-	40.0	-	40.0	-	40.0	-	40.0	-	200.0	-
<u>Equipment/materials</u>												
Mobile unit	40.0	-	-	-	-	-	-	-	-	-	40.0	-
Publications	10.0	-	10.0	-	10.0	-	10.0	-	10.0	-	50.0	-
<u>Subtotals</u>	90.0	30.0	50.0	-	50.0	-	50.0	-	50.0	-	290.0	30.0
<u>Inflation</u>	-	-	5.0	-	10.0	-	15.0	-	20.0	-	50.0	-
<u>Totals</u>	90.0	30.0	55.0	-	60.0	-	65.0	-	70.0	-	340.0	30.0

101

PROPOSED BUDGET FOR
4-F RURAL YOUTH DEVELOPMENT
(\$ 000's)

4-F and GOE Contributions

	<u>1983</u>		<u>1984</u>		<u>1985</u>		<u>1986</u>		<u>1987</u>		<u>Total</u>	
	<u>4-F</u>	<u>GOE</u>	<u>4-F</u>	<u>GOE</u>								
<u>Equipment/Materials</u>												
<u>Training facilities</u>	800.0	-	-	-	-	-	-	-	-	-	800.0	-
<u>General Support</u>												
Salaries	-	33.6	-	33.6	-	33.6	-	33.6	-	33.6	-	168.0
Admin. costs	-	14.4	-	14.4	-	14.4	-	14.4	-	14.4	-	72.0
Credit fund	40.0	-	40.0	-	40.0	-	40.0	-	40.0	-	200.0	-
<u>Subtotals</u>	840.0	48.0	40.0	48.0	40.0	48.0	40.0	48.0	40.0	48.0	1000.0	240.0
<u>Inflation</u>	-	-	4.0	5.0	8.0	10.0	12.0	15.0	16.0	20.0	40.0	50.0
<u>Totals</u>	840.0	48.0	44.0	53.0	48.0	58.0	52.0	63.0	56.0	68.0	1040.0	290.0

4-F Rural Youth Development Budget Summary

AID (RTTS): Loan	\$340.0
Grant	30.0
Total	370.0

4-F Foundation	\$1,040.0
GOE	290.0

105

III. SUBPROJECTS PROPOSED IN THE PROJECT PAPER BUT NOT YET APPROVED BY CONACYT.

1) Catholic University of Guayaquil Animal Science Program

Objectives: (1) Fortify the Animal Science Program at the Catholic University of Guayaquil (CUG) so as to better prepare technicians for gainful employment. (2) Lay the groundwork for CUG's eventual expansion into a more extensive agricultural education program.

Justification: Perhaps one of the most serious deficiencies in Ecuadorean agricultural education is the dearth of training at or below the professional (five-year university course) level. Such training is now limited to the various technical high schools and to a handful of two year courses in technical universities. CUG has a two-year training program in Animal Science. About 60 students are enrolled in the Animal Science Program. CUG would like to establish a full-scale agricultural education program based on the U.S. Land Grant model. As two first logical steps in that direction, it understands the necessity of (1) addressing the deficiencies in its current Animal Science Program, particularly by forging linkages with various research and extension institutions; and (2) beginning to expand into other areas of agricultural education.

Description: The subproject will consist of the following actions:

(1) CUG will improve the quality of its Animal Science Staff by putting more of it on a permanent basis and some of it on a full-time basis.

(2) CUG will improve its Animal Science curriculum by organizing a curriculum advisory committee.

(3) CUG will enter into agreements with INIAP, farmers, ranchers, and agri-businesses for providing training and practical work experience.

(4) CUG will conduct an extensive assessment of projected manpower needs, both in Guayaquil and in other urban and rural areas of the country, in order to determine the educational areas into which it might expand.

(5) The curriculum advisory committee will draw up suggested curricula in areas of study other than Animal Science.

(6) CUG will teach courses on contract to groups of people who are not agriculturally trained but who will be working in rural areas and would find a limited level of agricultural training useful.

It is anticipated that the University of Mississippi will be the U.S. counterpart institution for this subproject.

Proposed Budget: AID would provide \$522,800 through the RIPS Project, primarily for technical assistance and training from the Title XII

universities. CUG would contribute \$678,400 to finance in-country assistance and training, as well as facilities. Catholic Relief Services (CRS) would add \$74,800 for training and for equipment for CUG.

PROPOSED BUDGET FOR
CATHOLIC UNIVERSITY OF GUAYAQUIL (CUG)
(\$ 000's)

AID (RITS) Contribution

	<u>1983</u>		<u>1984</u>		<u>1985</u>		<u>1986</u>		<u>Total</u>	
	L	G	L	G	L	G	L	G	L	
G										
<u>Technical Assistance</u>										
Long-term	-	85.0	-	42.5	-	-	-	-	-	127.5
Short-term	-	19.0	-	28.0	-	28.0	-	28.0	-	103.0
<u>Training</u>										
U.S.	5.0	-	10.8	-	10.8	-	11.4	-	38.0	-
In-country										
CUG staff	3.5	-	3.5	-	3.5	-	3.5	-	14.0	-
Students	17.0	-	14.0	-	8.0	-	6.0	-	45.0	-
Priests	-	-	2.0	-	2.0	-	1.0	-	5.0	-
<u>Equipment materials</u>	5.0	-	5.0	-	3.0	-	1.0	-	14.0	-
<u>General Support</u>										
Studies, evaluations	21.0	-	4.0	-	4.0	-	4.0	-	33.0	-
Travel	2.0	-	1.5	-	1.0	-	0.5	-	5.0	-
Administration	4.0	-	4.0	-	4.0	-	4.0	-	16.0	-
<u>Subtotals</u>	57.5	104.0	44.8	70.5	36.3	28.0	31.4	28.0	170.0	230.5
<u>Inflation^{1/}</u>	11.5	20.8	13.4	21.2	14.5	11.2	15.7	14.0	55.1	67.2
<u>Totals</u>	69.0	124.8	58.2	91.7	50.8	39.2	47.1	42.0	225.1	297.7

^{1/} The originally submitted budget began in 1980-81. Therefore, the inflation factor adjusts for the delay in subproject approval and funding.

166

PROPOSED BUDGET FOR
CATHOLIC UNIVERSITY OF GUAYAQUIL (CUG)
(\$ 000's)

CUG and CRS CONTRIBUTIONS

	1983		1984		1985		1986		TOTAL	
	CUG	CRS ¹	CUG	CRS	CUG	CRS	CUG	CRS	CUG	CRS
<u>Technical Assistance</u>										
Long-term	-	-	7.6	-	15.9	-	16.6	-	40.1	-
<u>Training</u>										
In-country										
Students	1.1	-	1.1	-	9.1	-	13.1	-	24.4	-
Priests	-	20.0	-	-	-	20.0	-	-	-	40.0
<u>Equipment/materials</u>	7.2	7.8	0.8	2.8	0.7	2.8	0.7	2.8	9.4	16.2
<u>General Support</u>										
Salaries	40.8	-	42.2	-	43.5	-	44.8	-	171.3	-
Travel	1.3	-	1.3	-	1.3	-	1.3	-	5.2	-
Offices, classrooms	62.2	-	62.2	-	62.1	-	62.1	-	248.6	-
Maintenance	-	-	-	0.4	-	0.4	-	0.4	-	1.2
<u>Subtotals</u>	112.6	27.8	115.2	3.2	132.6	23.2	138.6	3.2	499.0	57.4
<u>Inflation²</u>	22.5	5.6	34.6	1.0	53.0	9.2	69.3	1.6	179.4	17.4
<u>Totals</u>	135.1	33.4	149.8	4.2	185.6	32.4	207.9	4.8	678.4	74.8

¹ Catholic Relief Services

² The original budget began in 1960-81. Therefore, the inflation factor adjusts for the delay in subproject approval and funding.

CUG Budget Summary:

AID (RTS): Loan	\$225.1
Grant	297.7
<u>Total</u>	<u>522.8</u>

CUG	\$ 678.4
CRS	\$ 74.8

109

2) Soybean Production and Utilization

Objectives: To establish a well-balanced, integrated, and sustainable soybean program in Ecuador, which will reduce malnutrition, eliminate Ecuador's edible oils deficit, and increase small farm income.

Justification: Soybeans have great potential to improve the nutritional condition of Ecuador's protein-starved poor. Increased soybean production could move Ecuador closer to self-sufficiency in edible and cooking oils, and could provide a valuable source of protein for livestock, poultry, and other small animals. In fact, there is great potential in Ecuador for making soybeans a garden crop for home consumption and for making them a good cash crop for small producers. From 1970 to 1977, production increased from 600 metric tons to over 19,200. Area under production grew from 610 hectares to 14,830 (and since has grown to over 21,000 hectares), and yields increased from 984 kgs./ha. to 1,399. Initiation and expansion of soybean production in Ecuador has been due in large part to AID assistance. A significant part of the AID funded effort over the years has been assistance from the International Soybean Program (INTSOY) to INIAP. (INTSOY is a consortium of the University of Illinois, the University of Puerto Rico, and ten other major U.S. universities from states where soybeans are a major crop.)

Description: A joint INIAP-INTSOY team will thoroughly review Ecuador's total soybean production/marketing/use system. Then, under INIAP's leadership, the various institutions (GOE and private) will be brought together to revise and detail the plan of work and to establish specific responsibilities, timetables, and research, TA, and training needs. Subproject support is expected to include the following: (1) substantial short-term TA from INTSOY, both on general planning and institution-building aspects and on specific research-oriented problem areas; (2) degree training at the masters level for persons in INIAP and other institutions involved in specific areas of research and/or implementation; (3) short-term training both in Ecuador, the United States, and in third countries (e.g., the ICA/INTSOY course in Colombia); (4) observation visits, short-term practical work experiences, serving as research associates; and (5) a modest fund for equipment and for library and research materials.

Proposed Budget: AID (RIFTS) funding of \$669,000 is proposed. The GOE will contribute personnel, research space, most materials, and some of the training costs. The exact counterpart contribution cannot be determined at this time, but it is estimated that it will at least equal the AID contribution.

PROPOSED BUDGET FOR
EXPANDED SOYBEAN PRODUCTION AND UTILIZATION
(\$ 000's)

AID (RITS) CONTRIBUTION

	<u>1983</u>		<u>1984</u>		<u>1985</u>		<u>1986</u>		<u>TOTAL</u>	
	L	G	L	G	L	G	L	G	L	G
<u>Technical Assistance</u>										
Short-term	-	51.0	-	51.0	-	51.0	-	44.0	-	197.0
<u>Training</u>										
U.S.										
Long-term	-	-	45.0	-	75.0	-	30.0	-	150.0	-
Short-term	12.0	-	20.0	-	20.0	-	18.0	-	70.0	-
Other countries	9.0	-	21.0	-	10.0	-	10.0	-	50.0	-
<u>Equipment/ materials</u>	5.0	-	10.0	-	5.0	-	5.0	-	25.0	-
<u>Subtotals</u>	26.0	51.0	96.0	51.0	110.0	51.0	63.0	44.0	295.0	197.0
<u>Inflation¹</u>	5.0	10.0	29.0	15.0	44.0	20.0	32.0	22.0	110.0	67.0
<u>Totals</u>	31.0	61.0	125.0	66.0	154.0	71.0	95.0	66.0	405.0	264.0

Soybean Budget Summary:

AID (RITS): Loan \$405.0
Grant 264.0
Total 669.0

GOE \$650.0

¹ The original budget began in 1980-81. Therefore, the inflation factor adjusts for the delay in subproject approval and funding.

IV. PROPOSED NEW SUBPROJECTS

The twelve subprojects presented below are new subprojects proposed since approval of the original Project Paper.

1) Soil Conservation Service (PRONACOS)

Objectives: To develop a soil conservation and management program in Ecuador that focuses on: 1) protecting the natural resource base from excessive soil erosion; and 2) providing off-site benefits through reduced sedimentation in stream water, irrigation systems, municipal water supplies, hydroelectric projects, and fisheries.

Justification: Excessive soil erosion occurs in the Sierra and Coastal areas of the country and has been described as the major natural resource problem in Ecuador. Erosion degrades the productive capacity of the land base and causes considerable off-site sedimentation problems. As the capacity and need for agricultural production increase in the years ahead, the natural resource base will continue to deteriorate at a serious rate. However, soil conservation remains a lower priority within the GOE than increasing domestic agricultural production in the face of rapidly growing importation of foodstuffs. Recently, several GOE agencies have been assigned responsibilities relating to soils and their use. The National Soil Conservation Program (PRONACOS) was formed within the Ministry of Agriculture in 1981 and has the potential of providing a comprehensive program directed at land users.

Description: Subproject activities will focus upon the training of specialists at the central and field office levels. The training for central office personnel will cover (1) sound planning techniques that recognize the kinds and types of resource data necessary to define the problems; (2) methods for analyzing solutions and developing alternatives; (3) strategies for implementing conservation techniques; and (4) preparation of proposals to solve the problems. Technical advisors from the U.S. will work with PRONACOS planning and evaluating staff to analyze resource conditions in the Coastal and Sierra regions. On the basis of this analysis, at least one pilot project area will be selected for training of PRONACOS field staff in erosion and sedimentation control. Visits to soil conservation projects in the U.S. will also be financed. PRONACOS technicians have already received some training from INIAP and it is expected that a relationship will be formed by which the research findings on soil conservation techniques generated by INIAP as part of the COMSA activity will be disseminated by PRONACOS. Further training of PRONACOS technicians will result from collaboration with the National Forestry Program in pilot activities to be carried out in one or more critical watershed areas under the FY 1982 Forestry Development Project.

Proposed Budget: Total AID funding for PRONACOS is an estimated \$1,327,000 (\$775,000 loan and \$548,000 grant). The GOE will contribute \$5,231,700. The large counterpart is an investment in staff and facilities for the fledgling organization. While most of the central office staff is in

112

place, a large number of mid-level field technicians will be brought into PRONACOS over the four-year subproject. Many of these technicians will be shifted from other parts of MAG or other GOE institutions where they may already have acquired training and experience in soil conservation. The actual increase in the GOE payroll occasioned by this subproject is therefore somewhat less than the budget figures suggest. This consolidation of personnel will allow PRONACOS to exercise its intended role as Ecuador's unified soil conservation service.

PROPOSED BUDGET FOR
SOIL CONSERVATION SERVICE (PRONACOS)
(\$ 000's)

AID (RTTS) Contribution

	<u>1983</u>		<u>1984</u>		<u>1985</u>		<u>1986</u>		<u>TOTAL</u>	
	L	G	L	G	L	G	L	G	L	G
<u>Technical Assistance</u>										
Short-term	-	144.0	-	96.0	-	144.0	-	96.0	-	480.0
<u>Training</u>										
U.S.										
M.S. degree	18.0	-	36.0	-	18.0	-	-	-	72.0	-
Technicians	36.0	-	48.0	-	36.0	-	-	-	120.0	-
In-country										
Professional	27.0	-	27.0	-	27.0	-	-	-	81.0	-
PRONACOS short courses	17.0	-	17.0	-	-	-	-	-	34.0	-
Farmers	6.0	-	12.0	-	12.0	-	12.0	-	42.0	-
Public awareness	20.0	-	15.0	-	10.0	-	10.0	-	55.0	-
<u>Equipment/materials</u>										
Vehicles	132.0	-	-	-	-	-	-	-	132.0	-
Field equip.	40.0	-	-	-	-	-	-	-	40.0	-
<u>General Support</u>										
Incentive program	-	-	60.0	-	60.0	-	-	-	120.0	-
Aerial photos application	15.0	-	8.0	-	-	-	-	-	23.0	-
<u>Subtotals</u>	311.0	144.0	223.0	96.0	163.0	144.0	22.0	96.0	719.0	480.0
<u>Inflation</u>	-	-	22.0	10.0	32.0	29.0	6.0	29.0	60.0	68.0
<u>Totals</u>	311.0	144.0	245.0	106.0	195.0	173.0	28.0	125.0	779.0	548.0

11/11

PROPOSED BUDGET FOR
SOIL CONSERVATION SERVICE (PRONACOS)
(\$ 000's)

GOE Contribution

	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>TOTAL</u>
<u>Equipment/materials</u>	236.6	438.6	201.1	45.6	921.9
<u>General Support</u>					
Salaries for:					
Central office	216.9	225.6	225.6	225.6	893.7
Field offices	179.5	370.0	558.0	581.0	1,688.5
Per diem/travel	89.5	143.5	199.5	199.5	632.0
Office space	66.0	86.0	106.0	106.0	364.0
<u>Subtotals</u>	788.5	1,263.7	1,290.2	1,157.7	4,500.1
<u>Inflation</u>	-	126.3	258.0	347.3	731.6
<u>Totals</u>	788.5	1,390.0	1,548.2	1,505.0	5,231.7

PRONACOS Budget Summary

AID (RITS):	Loan	\$779.0
	Grant	548.0
	Total	<u>\$1,327.0</u>
GOE		\$5,231.7

115

2) Highland Vegetable Crops

Objectives: Assist INIAP to develop and disseminate technologies that will increase vegetable productivity and production in the Sierra.

Justification: Vegetable production in Ecuador has received very little attention and support from state agencies until recently. As a result, there has been relatively little technology developed or transferred to vegetable producers and the yield per hectare of many vegetable crops decreased continually during the period from 1962 to 1980. Vegetable production requires the proper application of science (knowledge and technology) as well as a certain degree of art (intangible know-how) in a highly skilled manner. Ecuador has the climate, soils, land availability, increasing demand, and labor supply required for improved vegetable production. INIAP initiated a Vegetable Program in 1978. Since INIAP is the only state agency presently involved in vegetable research and extension, however, it must increase its institutional capacity and capabilities to conduct vegetable research, to develop the necessary technology and transfer it to the growers.

Description: The subproject will strengthen INIAP's capacity to conduct vegetable research and technology development by providing a long-term vegetable specialist to help direct the Vegetable Program and short-term advisors in vegetable-related disciplines (e.g., genetic improvement, disease control, irrigation and water management). The Vegetable Program staff will be expanded and training will be provided for professionals and technicians. Finally, a vegetable research farm will be established in the Sierra. The results of the research will be disseminated through field days, short courses, demonstration plots, and meetings with farm organizations. The subproject will also stress collaboration between INIAP and other institutions involved in vegetable research, education, and extension.

Proposed Budget: AID would provide funding of \$1,532,900 (\$933,900 loan and \$599,000 grant), mostly for technical assistance, training, and equipment. Some AID loan funds would support new INIAP professional and technical staff on a declining basis over the life of the subproject. INIAP would provide staff support and equipment valued at \$464,800.

PROPOSED BUDGET FOR

VEGETABLE CROPS
(\$ 000's)

AID (RTTS) Contribution

	<u>1983</u>		<u>1984</u>		<u>1985</u>		<u>1986</u>		<u>1987</u>		<u>TOTAL</u>	
	L	G	L	G	L	G	L	G	L	G	L	G
<u>Technical assistance</u>												
Long-term	-	100.0	-	100.0	-	100.0	-	-	-	-	-	300.0
Short-term	-	30.0	-	40.0	-	60.0	-	30.0	-	60.0	-	220.0
<u>Training</u>												
U.S. - M.S. degrees	15.0	-	30.0	-	60.0	-	15.0	-	-	-	120.0	-
In-country:												
INIAP courses	2.5	-	3.0	-	4.0	-	5.0	-	5.0	-	19.5	-
Field days	0.5	-	1.0	-	1.0	-	1.2	-	1.5	-	5.2	-
Field courses	-	-	2.0	-	2.5	-	3.0	-	3.5	-	11.0	-
Training materials	2.5	-	2.0	-	1.0	-	1.0	-	0.5	-	7.0	-
<u>Equipment</u>	113.2	-	112.6	-	43.2	-	38.6	-	34.0	-	341.6	-
<u>General Support</u>												
Salaries for:												
Agric. engineers	31.7	-	51.9	-	38.1	-	20.9	-	-	-	142.6	-
Technical/clerical	28.4	-	35.7	-	25.5	-	14.1	-	-	-	103.7	-
Per diem	7.5	-	10.0	-	15.0	-	15.0	-	15.0	-	62.5	-
<u>Subtotals</u>	201.3	130.0	248.2	140.0	190.3	160.0	113.8	30.0	59.5	60.0	813.1	520.0
<u>Inflation</u>	-	-	24.8	14.0	38.0	32.0	34.0	9.0	24.0	24.0	120.8	79.0
<u>Totals</u>	201.3	130.0	273.0	154.0	228.3	192.0	147.8	39.0	83.5	84.0	933.9	599.0

PROPOSED BUDGET FOR

VEGETABLE CROPS
(\$ 000's)

GCE Contribution

	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>TOTAL</u>
<u>Equipment</u>	5.0	5.0	-	-	-	10.0
<u>General Support</u>						
<u>Salaries for:</u>						
Agric. engineers	-	17.2	38.1	62.7	92.0	210.0
Technical/clerical	-	10.6	25.5	42.2	58.8	137.1
<u>Subtotals</u>	5.0	32.8	63.6	104.9	150.8	357.1
<u>Inflation</u>	-	3.2	12.7	31.5	60.3	107.7
<u>Totals</u>	5.0	36.0	76.3	136.4	211.1	464.8

Vegetable Crops Budget Summary:

AID (PCTS): Loan	\$ 933.9
Grant	599.0
<u>Total</u>	<u>1,532.9</u>

GCE \$ 464.8

3) Deciduous and Subtropical Fruit Crops

Objective: To improve the income and standard of living of small farmers through cultivation of fruit crops, by means of improvement in the ability of INIAP to carry out research and technology transfer in those crops.

Justification: Ecuadorean highland farmers are growing low-income-producing annual crops on many soils on steep slopes highly subject to erosion. Fruit production offers potential for increasing farm income and standard of living. The low level of technology used by current fruit growers results in low productivity and income even though prices are high and importation of fruits is occurring. An applied research program and appropriate technology transfer requiring trained personnel is essential to improve productivity of existing orchards and stimulate greater use of fruit crops as cash crops on small farms.

Description: The subproject seeks to increase fruit production and productivity by: (1) training fruit crop research personnel; (2) carrying out research in subtropical and deciduous fruit crops; and (3) conducting an active technology transfer program through small farm demonstration plots and related activities.

Proposed Budget: Total AID funding for the subproject is estimated at \$1,401,000 (\$767,000 loan and \$634,000 grant) for technical assistance, U.S. training to the M.S. level for INIAP professionals, and field equipment. AID loan funds would also support research professionals and assistants on a declining basis. INIAP will provide salary support and chemical supplies valued at \$615,300.

117

PROPOSED BUDGET FOR

FRUIT CROPS
(\$ 000's)

AID (RTS) Contribution

	<u>1982</u>		<u>1983</u>		<u>1984</u>		<u>1985</u>		<u>1986</u>		<u>TOTAL</u>	
	L	G	L	G	L	G	L	G	L	G	L	G
<u>Technical Assistance</u>												
Long-term	-	25.0	-	100.0	-	100.0	-	100.0	-	75.0	-	400.0
Short-term	-	32.5	-	34.5	-	31.5	-	32.5	-	31.5	-	162.5
<u>Training</u>												
U.S. - N.S. degree	4.5	-	54.0	-	126.0	-	90.0	-	-	-	274.5	-
<u>Equipment</u>												
Vehicles	55.0	-	-	-	-	-	-	-	-	-	55.0	-
Sprayers, tools	20.0	-	-	-	-	-	-	-	-	-	20.0	-
Other materials	10.0	-	10.0	-	10.0	-	10.0	-	10.0	-	50.0	-
<u>General Support</u>												
Salaries for new professionals	6.0	-	24.0	-	37.8	-	32.4	-	20.4	-	120.6	-
Thesis support	6.3	-	40.8	-	52.9	-	46.7	-	25.1	-	171.8	-
<u>Subtotals</u>	101.8	57.5	128.8	134.5	228.7	131.5	179.1	132.5	55.5	106.5	691.9	562.5
<u>Inflation</u>	-	-	-	-	22.7	13.0	35.8	26.5	16.6	32.0	75.1	71.5
<u>Totals</u>	101.8	57.5	128.8	134.5	249.4	144.5	214.9	159.0	72.1	138.5	767.0	634.0

120

PROPOSED BUDGET FOR

FRUIT CROPS
(\$ 000's)

GOE Contribution

	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>TOTAL</u>
<u>Equipment</u>						
Chemical supplies 1/	60.0	60.0	60.0	60.0	60.0	300.0
<u>General Support</u>						
Salaries for:						
Professionals	-	-	12.6	32.4	61.2	106.2
Technicians	1.1	4.6	4.6	4.6	4.6	19.5
Field workers	4.8	18.2	18.2	18.2	18.2	77.6
Secretaries, others	1.7	7.5	7.5	7.5	7.5	31.7
<u>Subtotals</u>	67.6	90.3	102.9	122.7	151.5	535.0
<u>Inflation</u>	-	-	10.3	24.5	45.5	80.3
<u>Totals</u>	67.6	90.3	113.2	147.2	197.0	615.3

Fruit Crops Budget Summary:

AID (RTTS): Loan	\$ 767.0
Grant	634.0
Total	<u>1,401.0</u>

GCE \$ 615.3

1/ Includes insecticides, fungicides, fertilizers, soil sterilents, hormones, and other chemicals. All will be used under controlled laboratory or field demonstration conditions. An assessment of the environmental impact of the research and demonstration activities will be required from CONACYT prior to subproject approval.

121

4) Integrated Insect Pest Management

Objectives: To improve the well-being of Ecuadoreans through improvement in the quantity and quality of available food crops. This will be accomplished by developing and implementing Integrated Insect Pest Management Programs which will increase and stabilize yields and at the same time reduce the serious dangers associated with the present widespread abuse of pesticides.

Justification: Two principal problems confront Ecuador in the area of plant protection: (1) Insects along with other harmful organisms destroy approximately one-third of the potential pre-harvest crop field. (2) Almost all insect control depends solely on the unregulated use of insecticides. These problems have not been dealt with for various reasons: lack of GOE planning and support for a crop protection program including research; lack of trained entomologists and plant protectionists; limited extension services to farmers; and minimal coordination among research, education, and extension agencies involved in pest management.

Description: Under the direction of one U.S. and one Ecuadorean advisor, the subproject will address the research, education, and extension aspects of integrated insect pest management. To strengthen research, twelve agricultural engineers will be trained to the M.S. level in the U.S. in various specialized areas of plant protection, will do their thesis research in Ecuador, and will be given permanent positions in MAG. Also, INIAP will conduct research on particular crops. In the area of education, technical assistance will be provided to universities to develop materials for entomology courses. The technical advisors will also work with an Ecuadorean entomologist to develop extension techniques and conduct short courses to train extension agents and farmers. The extension program will disseminate the findings of the crop-specific research. The participation of the MAG will be sought to help promote farmer acceptance of the new programs and procedures.

Proposed Budget: AID will provide a total of \$1,672,000 through the RITS (\$865,000 loan and \$807,000 grant) for technical assistance, training, and field and lab equipment. The GOE contribution, from INIAP, the MAG's Sanidad Vegetal unit, and the universities, is estimated as \$716,000 primarily for salaries for part-time counterparts and new staff.

111

PROPOSED BUDGET FOR
INTEGRATED INSECT PEST MANAGEMENT
(\$ 000's)

AID (RTTS) Contribution

	<u>1983</u>		<u>1984</u>		<u>1985</u>		<u>1986</u>		<u>TOTAL</u>	
	L	G	L	G	L	G	L	G	L	G
<u>Technical Assistance</u>										
Long-term	-	125.0	-	125.0	-	130.0	-	130.0	-	510.0
Short-term	-	56.0	-	44.0	-	44.0	-	48.0	-	192.0
<u>Training</u>										
U.S.										
M.S. degrees	108.0	-	216.0	-	216.0	-	-	-	540.0	-
Seminars	3.0	-	3.0	-	3.0	-	3.0	-	12.0	-
In-country										
Scholarships	1.0	-	2.0	-	2.0	-	3.0	-	8.0	-
Short courses	12.0	-	10.0	-	10.0	-	15.0	-	47.0	-
<u>Equipment/materials</u>										
Vehicles	40.0	-	-	-	-	-	-	-	40.0	-
Lab. equipment	15.0	-	10.0	-	2.0	-	2.0	-	29.0	-
Field equipment	12.0	-	7.0	-	2.0	-	2.0	-	23.0	-
Publications	7.0	-	5.0	-	4.0	-	13.0	-	29.0	-
<u>General Support</u>										
Per diem	10.0	-	11.0	-	12.0	-	13.0	-	46.0	-
<u>Subtotals</u>										
	208.0	181.0	264.0	169.0	251.0	174.0	51.0	178.0	774.0	702.0
<u>Inflation</u>	-	-	26.0	17.0	50.0	35.0	15.0	53.0	91.0	105.0
<u>Totals</u>										
	208.0	181.0	290.0	186.0	301.0	209.0	66.0	231.0	865.0	807.0

123

PROPOSED BUDGET FOR
INTEGRATED INSECT PEST MANAGEMENT
(\$ 000's)

GOE Contribution

	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>TOTAL</u>
<u>General Support</u>					
Salaries/INIAP:					
Entomologists	36.0	36.0	36.0	36.0	144.0
New M.S.					
specialists	-	-	-	120.0	120.0
Social scientist	2.0	2.0	2.0	2.0	8.0
Field workers	15.0	15.0	15.0	15.0	60.0
Admin/clerical	10.0	10.0	10.0	10.0	40.0
Salaries/Sanidad					
Vegetal	28.0	28.0	28.0	28.0	112.0
Salaries/universities	3.0	3.0	3.0	3.0	12.0
Facilities	12.0	12.0	12.0	12.0	48.0
Maintenance	16.0	16.0	16.0	16.0	64.0
<u>Subtotals</u>	122.0	122.0	122.0	242.0	608.0
<u>Inflation</u>	-	12.0	24.0	72.0	108.0
<u>Totals</u>	122.0	134.0	146.0	314.0	716.0

IIPM Budget Summary

AID (RTTS): Loan	\$865.0
Grant	807.0
Total	<u>1,672.0</u>
GOE	\$716.0

124

5) Extension Systems for Small Farm Families

Objectives: To carry out a study that will: (1) determine what specific improvement can be made in the present methods used for technical assistance and transferring technology to small agricultural producers; (2) develop viable alternatives for the current policies and programs which will improve the technical assistance systems and methods, for consideration by the GOE; (3) provide strategies and time tables for changing the policies and implementing the programs selected; (4) prepare criteria, methods and schedules for evaluating the actions taken.

Justification: Public sector institutions serving agriculture and rural people have not been effective for three basic reasons: (1) little coordination between organizations responsible for education, research and diffusion of technology; (2) lack of research and technical assistance to small farmers; and (3) a view held by many Ecuadorean officials that technical assistance or technology transfer programs are separate from and in conflict with the integrated rural development strategy.

Description: The subproject is in the nature of a feasibility study and proposal for action. Primary areas of emphasis in the study should be to delineate the functions of Ecuadorean institutions and identify elements in each that would contribute to an effective system of technology transfer; to develop clear and coherent policies to guide the technology transfer process and the technical assistance system; and to document the importance of generating appropriate technologies. A group made up of MAG administrators, experienced extensionists, and farmers will provide guidance to a three-person team of specialists who will prepare the study and proposal. A consultant would be needed for a survey of public sector personnel and farmers. Six months would be required for developing the final study and proposal.

Proposed Budget: AID would provide a total of \$130,000 to finance technical assistance and training. The GOE would provide \$29,400 for local salaries and services.

125

PROPOSED BUDGET FOR

TECHNOLOGY TRANSFER
 (\$ 000's)

AID (RTIS) AND GOE CONTRIBUTIONS

	1983		
	AID		GOE
	L	G	
<u>Technical Assistance</u>			
Short-term			
Survey specialist	--	24.0	--
Extension specialist	--	10.0	--
Specialist team	--	48.0	--
<u>Training</u>			
International field trips	48.0	--	--
<u>General Support</u>			
Salaries for survey team and secretaries	--	--	6.8
Survey data analysis	--	--	3.8
In-country travel	--	--	18.8
<u>Totals</u>	48.0	82.0	29.4

Technology Transfer Budget Summary

AID (RTIS): Loan	\$48.0
Grant	82.0
Total	<u>\$130.0</u>
GOE	\$ 29.4

126

6) Appropriate Technology Development

Objectives: To assist the Andean Center for Rural Technology (CATER) to generate and transfer technologies in the Province of Loja. The specific objectives are: (1) to carry out an assessment of traditional technologies used by small farmers in the province; (2) to test new technologies and improvements to existing technologies; and (3) to disseminate proven technologies.

Justification: A preliminary survey of the Province of Loja revealed an almost total dependence on manual equipment for cultivation. Available processing methods are manual and arduous, while poor storage facilities cause losses of up to 40 percent over six months. As a result, small farmers generally are obliged to sell their harvest immediately, in unprocessed form, at the offered price. The target areas reflect the diversity of cultures (indigenous and mestizo) and ecologies (wet and dry, subtropical and humid) that characterizes much of Ecuador. The technologies developed could therefore eventually benefit a much wider segment of the rural poor.

Description: An assessment of current technologies in the target areas will be carried out during the first year of the five-year subproject. Final selection of technologies to be disseminated will take into consideration the amount of training and assistance required for the users and the feasibility of local production of the implements and machinery. CATER will receive training, assistance, and logistical support from a variety of Ecuadorean rural development agencies, both public and private.

Proposed Budget: The appropriate technology development program of CATER would be funded from several sources. AID loan funds of \$112,700 would be provided through the RITS for equipment and training. CATER would contribute \$116,800 in the form of personnel, primarily engineers to carry out the experimentation and adaptation. The Government of France would finance all technical assistance as well as some training and equipment, with a total value of \$84,300. Small, unspecified contributions from the University of Loja agricultural engineering school, MAG, the Fund for Marginal Rural Development (FODERUMA), and other Ecuadorean institutions are also expected.

PROPOSED BUDGET FOR
APPROPRIATE TECHNOLOGY DEVELOPMENT (ATER)
(\$ 000's)

AID (PCTS) and UTM Contribution

	<u>1983</u>		<u>1984</u>		<u>1985</u>		<u>1986</u>		<u>1987</u>		<u>Total</u>	
	AID/L	UTM	AID/L	UTM								
<u>Training</u>	10.4	2.9	9.7	2.9	7.7	2.9	7.8	2.9	7.7	2.9	43.3	14.5
<u>Equipment/Materials</u>												
Manual Equipment	6.0	2.5	15.0	1.6	4.3	1.6	20.8	1.2	0.8	1.2	46.9	8.1
Publications	0.8	-	0.8	-	0.8	-	1.2	-	1.2	-	4.8	-
<u>General Support</u>												
Salaries	-	14.4	-	15.0	-	15.6	-	15.0	-	15.0	-	75.0
<u>Subtotals</u>	17.2	19.8	25.5	19.5	12.8	20.1	29.8	19.1	9.7	19.1	95.0	97.6
<u>Inflation</u>	-	-	2.5	1.9	2.5	4.0	8.9	5.7	3.8	7.6	17.7	19.2
<u>Totals</u>	17.2	19.8	28.0	21.4	15.3	24.1	38.7	24.8	13.5	26.7	112.7	116.8

Appropriate Technology Budget Summary

AID (PCTS): Loan \$112.7
ATER 116.8

125

7) Irrigation Support

Objectives: To assist in developing an institutional capability in the Ecuadorean Water Resource Institute (INERHI) that will maximize the benefits from irrigation development, thus improving conditions for the farmer of small parcels and improving benefits to the Ecuadorean economy.

Justification: The vast majority of Ecuadorean farmers are operating tracts of less than one hectare at the subsistence level. Many are dependent on improved irrigation and other farming practices as a primary means of significantly increasing their agricultural production. Agricultural production on small holdings could be markedly increased by a diffusion of improved on-farm water management practices reaching the small, irrigation farmers. To improve farm income there is an immediate and critical need for INERHI to develop the institutional capability of training extension personnel, researchers, and technicians from INERHI and other agencies in on-farm irrigation system design and water management.

Description: The subproject focuses on technical assistance to INERHI from the International Irrigation Center (IIC) at Utah State University to develop INERHI's capacity to provide training in on-farm water management. IIC will also provide U.S. training to INERHI irrigation specialists and an analysis of improved irrigation models applicable to Ecuador.

Proposed Budget: Proposed AID funding for this subproject is \$1,436,000 (\$749,000 loan and \$687,000 grant), although the amount could decrease if the subproject is subsumed under COMSA or PRONACOS. The estimated INERHI contribution is \$469,300, primarily to staff a new training division.

PROPOSED BUDGET FOR

IRIGATION (INERFI)

(\$ 000's)

AID (PCTS) Contribution

	<u>1983</u>		<u>1984</u>		<u>1985</u>		<u>1986</u>		<u>1987</u>		<u>Total</u>	
	L	G	L	G	L	G	L	G	L	G	L	G
<u>Technical Assistance</u>												
Long-term	-	100.0	-	100.0	-	100.0	-	100.0	-	100.0	-	500.0
Short-term	-	26.0	-	25.0	-	15.0	-	6.0	-	6.0	-	78.0
<u>Training</u>												
U.S. (USU/IIC)												
M.S. degrees	40.0	-	60.0	-	60.0	-	40.0	-	20.0	-	220.0	-
Short courses	18.0	-	18.0	-	18.0	-	-	-	-	-	54.0	-
<u>Equipment/materials</u>												
	30.0	-	6.0	-	6.0	-	6.0	-	6.0	-	54.0	-
<u>General Support</u>												
USU coordinator	50.0	-	50.0	-	50.0	-	50.0	-	50.0	-	250.0	-
Spanish instruction	1.0	-	-	-	-	-	-	-	-	-	1.0	-
Bilingual secretary (USU)	12.0	-	12.0	-	12.0	-	12.0	-	12.0	-	60.0	-
<u>Subtotals</u>												
	151.0	126.0	146.0	125.0	146.0	115.0	108.0	106.0	88.0	106.0	639.0	578.0
<u>Inflation</u>												
	-	-	14.0	12.0	29.0	23.0	32.0	32.0	35.0	42.0	110.0	109.0
<u>Totals</u>												
	151.0	126.0	160.0	137.0	175.0	138.0	140.0	138.0	123.0	148.0	749.0	687.0

120

PROPOSED BUDGET FOR
IRRIGATION (INERHI)
(\$ 000's)

GOE Contribution

	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>Total</u>
<u>General Support</u>						
Salaries:						
Training Div.	32.0	32.0	32.0	32.0	32.0	160.0
M.S. students	24.0	36.0	36.0	24.0	12.0	132.0
Professional in training at USU	12.0	12.0	12.0	-	-	36.0
Bilingual secretary	3.8	3.8	3.8	3.8	3.8	19.0
Office Space	4.0	4.0	4.0	4.0	4.0	20.0
In-country travel	6.0	6.0	6.0	6.0	6.0	30.0
<u>Subtotals</u>	81.8	93.8	93.8	69.8	57.8	397.0
<u>Inflation</u>	-	9.4	18.8	21.0	23.1	72.3
<u>Totals</u>	81.8	103.2	112.6	90.8	80.9	469.3

Irrigation Budget Summary

AID (RITS): Loan	\$749.0
Grant	<u>687.0</u>
Total	1,436.0
GOE	\$469.3

131

8) Fisheries and Aquaculture

Objectives: To increase aquaculture production, particularly among small farmers. This subproject will allow fuller use of Ecuador's abundant freshwater resources by coordinating the efforts of those working in the field; assisting the development of a trout rearing, disease investigation, and personnel training station; providing technology for trout feed processing; and improving a warm-water technology transfer center.

Justification: The abundance of freshwater resources - both warm and cold - indicate that the problem of lack of growth in aquaculture lies in non-availability of appropriate rearing stations and the feed for operating them, and lack of means to transfer known technology and seed stock.

Description: The subproject consists of four distinct activities. First, a conference would be held to bring together all groups and individuals interested in, or currently working in, some form of aquaculture in Ecuador. It is anticipated that this interchange will foster cooperation and the sharing of available technologies to make more efficient use of human and financial resources. Second, a water delivery system and training would be provided to help establish a trout hatchery at Papallacta. The function of the hatchery will be to teach farmers within the North Sierra region the proper methods of rearing trout, and to investigate research regarding disease control, feeding methods, etc. Third, investment capital would be provided to a private feed manufacturer to formulate and produce an acceptable nutritious diet in varying sizes to adequately feed trout from fry to adult. Fourth, training in warm-water fish culture would be provided to staff at the Babahoyo facility which serves as a technology transfer and training center for the production of warm-water species.

Proposed Budget: AID would provide \$239,000 for this subproject, primarily for training and equipment. The COE would add \$98,600 to cover installation of the water delivery system and various other costs.

PROPOSED BUDGET FOR

AQUACULTURE
 (\$ 000's)

AID (RTIS) AND COE CONTRIBUTIONS

	1983		COE
	AID L	G	
<u>Technical Assistance</u>			
Short-term	--	8.0	3.6
<u>Training</u>			
U.S.			
M.S. degree	40.0	--	--
Short courses, visits	45.0	--	--
In-country Conference	5.0	--	5.0
<u>Equipment</u>			
Water delivery system	131.0	--	80.0
Relleting dies	10.0	--	--
<u>General Support</u>			
Salaries for trainees	--	--	10.0
<u>Totals</u>	<u>231.0</u>	<u>8.0</u>	<u>98.6</u>

Aquaculture Budget Summary

AID (RTIS): Loan	\$231.0
Grant	8.0
Total	<u>\$239.0</u>
COE:	\$ 98.6

172

9) Cereals Program

Objectives: (1) Increase the National Cereals Program's ability to give technical assistance to small farm grain growers. (2) Provide the means and methods by which the National Cereals Program can improve the marketing of grains in the Sierra. (3) Link the cereal research program with the technical assistance program in such a way that production on the farm will increase. (4) Improve the training of the personnel of the Cereals Program for them to develop the appropriate technologies for cultivating, harvesting, and post-harvest storing and marketing of grains.

Justification: The provinces of Bolívar, Cañar, Carchi, Imbabura, and Pichincha have the best cereal production in the country. Nonetheless, the per acre yields of farmers in the best varieties are much lower than those obtained at the INIAP research stations under similar conditions. Other areas of the country also are well adapted to producing wheat, barley and corn when properly cultivated. Most of the grain producers have units of less than five hectares in production. At the present time, under the systems of production used, the level of production is hardly sufficient to serve as base for family food in terms of wheat, barley, and corn. With an increased output of research from INIAP and an improvement in extension methods by the Cereals Program, a large increase in production is possible.

Description: The subproject will provide technical assistance, training, and equipment to the National Cereals Program in MAG. Short-term consultants will advise on post-harvest losses, local systems of cereal production, and the marketing of grains. Longer-term consultants will be used in grain production and small farm grain production systems. Training will be provided for five persons to the M.S. level - four in grain production and extension and one in methods of applying technology for small farmers. Short-term training of 6 to 7 months is proposed through 10 courses at CIMMYT in production, pathology, technology, and economics of cereal production. Other in-country short courses will be developed to train extensionists in new technology and methods of promoting small farm adaptation. Also, short courses - 1 to 3 months - in the U.S. will be given on seed production, silo operation and management, grain storage systems, and marketing including grading and standards. In order to carry out the project, teams will be needed to work in the various areas of the country. Each team will need tractors, trucks, and specialized equipment for doing research and extension in production and marketing.

Proposed Budget: Total AID funding would be \$903,700 (\$779,700 loan and \$124,000 grant), primarily for training, vehicles and equipment. Counterpart funding of \$1,271,200 would cover local salaries and services, as well as equipment.

PROPOSED BUDGET FOR

CEREALS DEVELOPMENT

(\$ 000's)

AID (RITS) Contribution

	<u>1983</u>		<u>1984</u>		<u>1985</u>		<u>TOTAL</u>	
	L	G	L	G	L	G	L	G
<u>Technical Assistance</u>								
Short term	-	59.0	-	59.0	-	-	-	118.0
<u>Training</u>								
U.S.								
Long-term	105.0	-	70.0	-	-	-	175.0	-
Short-term	9.0	-	9.0	-	-	-	18.0	-
In-country	45.0	-	45.0	-	49.0	-	139.0	-
<u>Equipment</u>	418.5	-	4.5	-	2.0	-	425.0	-
<u>Subtotals</u>	577.5	59.0	128.8	59.0	51.0	-	757.0	118.0
<u>Inflation</u>	-	-	12.5	6.0	10.2	-	22.7	6.0
<u>Totals</u>	577.5	59.0	141.0	65.0	61.2	-	779.7	124.0

PROPOSED BUDGET FOR

CEREALS DEVELOPMENT

(\$ 000's)

GOE CONTRIBUTION

	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>Total</u>
<u>Equipment</u>	51.3	56.2	64.9	172.4
<u>General Support</u>				
Salaries	232.6	255.9	294.3	782.8
Services	57.1	62.8	72.3	192.2
<u>Subtotals</u>	341.0	374.9	431.5	1,147.4
<u>Inflation</u>	-	37.5	86.3	123.8
<u>Totals</u>	341.0	412.4	517.8	1,271.2

Cereals Development Budget Summary

AID (RTTS): Loan	\$779.7
Grant	124.0
Total	<u>\$903.7</u>

GOE \$ 1,271.2

156

10) Technology Transfer for Small Fishermen

Objectives: To increase incomes of small commercial fishermen through improved handling, processing, and marketing of traditional and non-traditional fish varieties.

Justification: Small fishermen do not derive full benefit from the abundant natural marine resources in Ecuador. Neither do they benefit from the potential market for fish products, particularly the non-traditional ones. The reasons for this include lack of knowledge on the part of small fishermen of technologies for handling and processing of traditional and non-traditional species, and deficiencies in the marketing system.

Description: The National Fisheries Institute (INP) will conduct a series of short courses over two years to teach small fishermen newly developed handling and processing techniques. Subsequently, instructional posters will be placed in fishing communities to encourage use of these techniques. The subproject will also finance a market study to determine potential demands for the new fish products.

Proposed Budget: AID would provide an estimated \$250,000 for equipment, training, and short-term technical assistance. The GOE contribution of \$210,000 would pay for salaries and building facilities.

PROPOSED BUDGET FOR
SMALL FISHERMEN TECHNOLOGY TRANSFER
(\$ 000's)

AID (RITS) AND GOE CONTRIBUTIONS

	<u>1983</u>			<u>1984</u>			<u>TOTAL</u>		
	AID		GOE	AID		GOE	AID		GOE
	L	G		L	G		L	G	
<u>Technical Assistance</u>									
S-T- Marketing study -	40.0	-	-	-	-	-	40.0	-	-
<u>Training</u>									
In-country	30.0	-	-	30.0	-	-	60.0	-	-
<u>Equipment/materials</u>	70.0	-	-	70.0	-	-	140.0	-	-
<u>General Support</u>									
Salaries	-	-	80.0	-	-	80.0	-	-	160.0
Classrooms, offices	-	-	20.0	-	-	20.0	-	-	40.0
<u>Subtotals</u>	100.0	40.0	100.0	100.0	-	100.0	200.0	40.0	200.0
<u>Inflation</u>	-	-	-	10.0	-	10.0	10.0	-	10.0
<u>Totals</u>	100.0	0.0	100.0	110.0	-	110.0	210.0	40.0	210.0

Small Fishermen Budget Summary:

AID (RITS): Loan	\$ 210.0
Grant	40.0
Total	<u>\$ 250.0</u>
GOE	\$ 210.0

138

11) Agricultural School Feasibility Study

Objectives: Determine the type of post-secondary agricultural education program most needed in Ecuador as well as in the Andean region, and develop an outline for the operation of the proposed institution.

Justification: A principal constraint on agricultural production in Ecuador has been identified as the lack of adequately trained personnel at every level from the producers themselves to extensionists, technicians, researchers, and planners. The reasons for the lack of properly trained people reflect in part the inability of the existing, university-centered system of post-secondary education to address the needs of agriculture. Furthermore, the universities have traditionally assigned a lower priority to agricultural education. Finally, there has been no coordination between the universities and the GOE to develop a national policy for agricultural education. Given these difficulties, an agricultural school outside of the university system might be the most effective means of providing the needed skills.

Description: An agricultural school feasibility study was proposed and will be administered by the private Fundación Eugenio Espejo. Various short-term consultants will be hired to perform the following tasks over a six-month period:

- a) Review existing studies on agricultural education and manpower needs and consult with GOE agencies, the universities, and farmer organizations;
- b) Analyze the capacities of existing educational institutions;
- c) Visit successful institutions such as the U.S. Land Grant Universities; the Panamerican Agricultural School of Zamorano, Honduras; and the College of Chapingo in Mexico;
- d) Draw up a plan for an agricultural education institution in Ecuador.

Proposed Budget: AID would provide a grant of \$91,000 to finance technical assistance for the study. The Foundation would contribute \$45,000 for travel and data processing.

PROPOSED BUDGET FOR

AGRICULTURAL SCHOOL

(\$ 000's)

AID (RITS) & PRIVATE CONTRIBUTIONS

	1983		
	<u>AID</u>		<u>Fundación</u>
	L	G	<u>E. Espejo</u>
<u>Technical Assistance</u>			
Short-term	-	91.0	-
<u>General Support</u>			
Data processing	-	-	12.0
International field trips	-	-	27.0
In-country travel	-	-	6.0
<u>Totals</u>	-	91.0	45.0

Agricultural School Budget Summary

AID (RITS): Grant \$91.0
Fundación E. Espejo 45.0

140

12) Natural Resources Planning and Management

Objectives: To create within CONADE a multidisciplinary capacity to coordinate activities in renewable natural resources management in order to rationalize resource use and increase agricultural productivity.

Justification: Population pressures, shifting cultivation, and improper farming techniques are increasing the rate of deforestation in all regions of Ecuador. This in turn leads to soil erosion, and in some areas desertification, which deplete the productive base of small farmers. The National Development Plan assigns a high priority to these problems. As a result, GOE institutions such as INIAP, INERHI, PRONACOS, and the National Forestry Program are now beginning to address various aspects of renewable natural resources management. A natural resources unit has been created in CONADE especially to coordinate and direct the efforts of these institutions toward achievement of the natural resource management priorities. However, this unit must strengthen its staff if it is to perform its function adequately.

Description: The development of the renewable natural resources planning and management unit will be achieved through extensive training. Two persons will receive M.S. training in fields such as natural resources economics and planning. Short-term training in technical specialties and project design, attendance at international workshops, and in-country seminars will also be funded. In addition, two years of technical assistance from a natural resources management professional and six months of short-term assistance will provide on-the-job training as well as provide interim expertise while Ecuadorean participants are in formal training.

Proposed Budget: The subproject requires AID (RFS) funding of \$435,300 (incl. \$273,000 in grant for technical assistance and \$162,300 in loan for training, a small amount of office and field equipment, and initial salary support for new staff. CONADE will contribute \$80,000 for salaries and will assume full support of the expanded unit in the second year of the subproject.

PROPOSED BUDGET FOR
NATURAL RESOURCES PLANNING AND MANAGEMENT
(\$ 000's)

AID (RTTS) and GOE Contributions

	<u>1983</u>			<u>1984</u>			<u>Total</u>		
	<u>AID/L</u>	<u>AID/G</u>	<u>GOE</u>	<u>AID/L</u>	<u>AID/G</u>	<u>GOE</u>	<u>AID/L</u>	<u>AID/G</u>	<u>GOE</u>
<u>Technical Assistance</u>									
Long-term	-	100.0	-	-	100.0	-	-	200.0	-
Short-term	-	30.0	-	-	30.0	-	-	60.0	-
<u>Training</u>									
U.S.									
N.S. level	40.0	-	-	40.0	-	-	80.0	-	-
Short-term	6.0	-	-	6.0	-	-	12.0	-	-
Int'l Workshops	5.0	-	-	5.0	-	-	10.0	-	-
In-country seminars	2.5	-	-	2.5	-	-	5.0	-	-
<u>Equipment/materials</u>	25.0	-	-	-	-	-	25.0	-	-
<u>General Support</u>	25.0	-	25.0	-	-	50.0	25.0	-	75.0
<u>Subtotals</u>	103.5	130.0	25.0	53.5	130.0	50.0	157.0	260.0	75.0
<u>Inflation</u>	-	-	-	5.3	13.0	5.0	5.3	13.0	5.0
<u>Totals</u>	103.5	130.0	25.0	58.8	143.0	55.0	162.3	273.0	80.0

Natural Resources Budget Summary

AID (RTTS): Loan	\$162.3
Grant	273.0
<u>Total</u>	<u>435.3</u>
GOE:	\$ 80.0

142

FORMULARIO DE PROYECTOS CONACYT
CONSEJO NACIONAL DE CIENCIA Y TECNOLOGIA
Instrucciones generales para completarlo.

- 1.- Lea cuidadosamente las instrucciones específicas que se contienen en cada casillero que usted deba responder, y atégase a ellas.
- 2.- Deje para el final la completación de las dos primeras páginas, por cuanto cualquier cambio de última hora que usted deba introducir se reflejará en estas páginas.
- 3.- Absténgase de escribir en los casilleros marcados "Uso Exclusivo del CONACYT"
- 4.- En caso de duda, recurra al personal de la Dirección Ejecutiva del CONACYT. Dicho personal lo asesorará para aclarar cualquier situación puntual.
- 5.- Si usted o su institución desean recibir una asesoría más amplia para la formulación de un Proyecto, diríjase al Director Ejecutivo del CONACYT, solicitando el envío de un técnico, indicando el tema para el cual lo solicita.
- 6.- Si usted no pertenece actualmente a una institución con personería jurídica, deberá obtener el aval de una institución que disponga de dicha personería, la misma que deberá comprometerse a supervisar su trabajo y a darle acceso a las facilidades de Investigación y Desarrollo (I+D) de que disponga.
- 7.- Tenga presente que este formulario es de carácter general, y que usted debe discriminar si algunos datos no son necesarios o no pueden aportarse, o si, por el contrario, deben ser mucho más completos.

A. Información General

1. Título del Proyecto: _____

El título del Proyecto debe reflejar, en el menor número de palabras, el tema específico sobre el cual versa o el propósito principal que se persigue.

2.- Cronología:

a) **Duración del Proyecto:** _____ años
 _____ meses
 Indique el tiempo que, a su juicio, durará el Proyecto desde que se inicie.

b) **Fecha de iniciación:**
 Día Mes Año

Consigne la fecha que, a su criterio, sería la más recomendable para empezar el Proyecto en caso de ser aprobado, teniendo en cuenta el tiempo que puede tardar su evaluación, los períodos de actividad académica, etc. Para su mejor información, tenga en cuenta que a menos que el CONACYT haya fijado fechas especiales para la iniciación del Proyecto, el proceso de evaluación de su solicitud tardará entre uno y dos meses y medio.

Uso Exclusivo del CONACYT

NUMERO _____

CODIGO _____

FECHA DE PRESENTACION

FECHA DE INFORME

FECHA DE RESOLUCION

NUMERO DE ORDEN

3. Antecedentes institucionales.

a) **Institución ejecutora principal:** (Nombre completo de la institución con personería jurídica que será la responsable de la ejecución del Proyecto y del empleo de los fondos)

 (Nombre de la Facultad, Gerencia, Subgerencia, Dirección o unidad administrativa dentro de la cual se realizará el Proyecto, si la hay)

 (Nombre de la unidad directamente responsable de ejecutar el Proyecto dentro de la institución, si la hay)

 (Dirección - calle, número del inmueble, bloque o subdivisión predial, departamento u oficina, ciudad)

(Días y horas de funcionamiento) _____ (Teléfonos) _____
 (Casilla) _____ (Cables) _____ (Télex) _____

b) **Naturaleza de la Institución:** Pública Privada (marque con una X lo que corresponda).

(Indique la Ley, los Reglamentos, las Escrituras Sociales u otros Instrumentos legales que rigen a la Institución Ejecutora Principal, proporcionando los datos necesarios para ubicar dichos documentos, como por ejemplo, fecha de expedición o de suscripción, número y fecha del Registro Oficial en que fueron publicados, nombre de la Notaría, etc).

144

4.- Dirección del Proyecto: (Consigne estos datos sin perjuicio de completar el Anexo I "Curriculum Vitae del Responsable del Proyecto).

a) Responsable del Proyecto: (Nombre completo del Jefe o Director del Proyecto o del Investigador Principal que tendrá a su cargo la responsabilidad de conducir los trabajos) _____

(Títulos) _____

(Cargo dentro de las institución ejecutora principal) _____

(Dirección particular) _____

(Teléfonos particulares) _____ (Dirección oficial, sólo si es diferente de la de la institución ejecutora principal indicada antes) _____

(Otros datos, en el mismo caso) _____

b) Recursos humanos asociados al Proyecto: (Descontando al Director del Proyecto, indique el número del personal que participará, y los meses/hombre que dicha participación representa).

PERSONAL	Número de personas	Meses/hombre
Ingenieros e Investigadores		
Otros profesionales y técnicos.		
Estudiantes		
Administrativos		
Servicios menores		
T O T A L		

5.- Resumen financiero: (en sucres)

- a) Valor del aporte de la institución ejecutora principal \$ _____
- b) Valor del aporte de otras instituciones participantes \$ _____
- c) Aportes a terceros (personal o instituciones que ayudan con recursos físicos o financieros, pero que no participan técnicamente en el Proyecto)\$ _____
- d) Aporte solicitado al CONACYT\$ _____
- e) COSTO TOTAL DEL PROYECTO\$ _____

6.- Distribución del aporte solicitado al CONACYT: (Anoté en el cuadro cuánto requerirá anualmente).

AÑO	1	2	3	TOTAL

7.- Componente en moneda extranjera: (Del total del aporte solicitado al CONACYT, indique cuánto precisará en moneda extranjera-si ello es necesario-. Utilice para la conversión la tasa oficial de cambio).

Moneda \ Año	19	19	19	19	19	TOTAL
Dólares EE.UU						

145

B. Información Sustantiva.-

1.- Antecedentes y justificación: (Cite brevemente la información documental de que dispone sobre el tema del Proyecto e indique la revisión bibliográfica que ha efectuado; explique cuál es la situación nacional e internacional en el área, disciplina, sector o subsector en que el tema del Proyecto se inscribe; y diga por qué, a su juicio, el tema propuesto es importante para el desarrollo de esa área, disciplina, sector o subsector).

2.- Capacidad institucional: (Señale brevemente la experiencia institucional y la competencia técnica actual de la unidad ejecutora en el tema propuesto para el Proyecto, e indique cuál es la importancia que la institución ejecutora principal ha asignado o asigna a dicho tema).

Uso Exclusivo del CONACYT
<input type="checkbox"/> 1
<input type="checkbox"/> 2
<input type="checkbox"/> 3

NOTA: En caso necesario utilice hojas adicionales del mismo tamaño, conéctelas de, de y así, sucesivamente.

112

J.- Objetivos del Proyecto: (Consigno, con la mayor precisión posible, los objetivos, yendo de lo más general a lo más particular, que se desearía alcanzar con el Proyecto. Recuerde que los objetivos son los fines o propósitos específicos que se persigue con la realización de las actividades del Proyecto. Si su Proyecto es de investigación, consigne en esta parte la hipótesis. Si su Proyecto tiene metas cuantificables, escribálas en esta parte; en caso contrario, identifique los elementos, factores o criterios que pueden ayudar, al término del Proyecto, a evaluar el grado de cumplimiento de los objetivos propuestos).

Uso Exclusivo del
CONACYT

4

5

6

NOTA: En caso necesario, utilice hojas adicionales del mismo tamaño, numeradas 4a, 4b, y así, sucesivamente.

141

b.- Cronograma: Utilice el formulario de esta página para mostrar, en un cronograma, la secuencia de las actividades previstas en la metodología propuesta, a lo largo del Proyecto. Si fuere necesario, reproduzca el formulario y agregue nuevas hojas del mismo tamaño, numerándolas Ea, Eb, y así, sucesivamente).

AÑOS Y MESES	
ACTIVIDADES	

1.04

2. Información Financiera: Usted puede presentar el presupuesto de su Proyecto sin tomar en cuenta la posible inflación. No es independiente que usted use todos los clasificadores, ni tampoco que se ciña solamente a ellos. Usted puede usar sólo algunos clasificadores y arreglar dígitos y clasificadores nuevos, según estime necesario).

PRESUPUESTO DEL PROYECTO

<u>DIGITOS</u>	<u>C L A S I F I C A D O R</u>	<u>A Financiarse con Recursos Propios (incluyendo aportes de otras instituciones participantes y aportes a terceros.</u>		<u>A Financiarse con aporte del CONACYT .</u>	
			<u>TOTALES DE COMPONENTES</u>		<u>TOTALES DE COMPONENTES</u>
11	<u>Personal del Proyecto:</u>				
11.	<u>Personal Nacional.-</u>				
11.01	Director, Coordinador, Jefe o Investigador Nacional Principal.				
11.02	Profesional, Técnicos o Investigadores Asociados al Proyecto.				
11.03	Apoyo Administrativo (Administradores, Auditores, Contadores, Analistas de Investigación, Técnicos Medios, Mandos Medios, Fono de Obra calificada, Secretarias, Choferes, Mensajeros).				
	<u>P A S A N:</u>				

	<u>C L A S I F I C A D O R</u>	<u>A Financiarse con Recursos Propios (incluyendo aportes de otras instituciones participantes y aportes a terceros)</u>		<u>A Financiarse con aportes del COMADIT</u>	
			<u>TOTALES DE COMPONENTES</u>		<u>TOTALES DE COMPONENTES</u>
	V I E N E N:				
12.	Personal de Cooperación Técnica.- (A financiarse con recursos de Organismos Internacionales, Gobiernos Amigos, Agencias Extranjeras, Fundaciones Extranjeras, etc).				
12.01	Asesores Técnicos o Investigadores Extranjeros, asociados al Proyecto.				
12.02	Instructores, profesores o personal profesional extranjero de corto tiempo.				
12.03	Personal de apoyo contratado con financiamiento de cooperación técnica.				
19.	Total del componente.				
	P A S A N:				

153

DIGITOS	C L A S I F I C A D O R	A Financiarse con Recursos Propios (incluyendo aportes de otras instituciones participantes y aportes a terceros.)		A Financiarse con aportes del <u>CONACYT</u>	
			TOTALES DE COMPONENTES		TOTALES DE COMPONENTES
	V I E N E N: <u>Servicios.-</u> 21. Servicios básicos (electricidad, agua, gas, teléfono, télex, correos). 22. Uso y mantenimiento de equipos. 23. Contratos de obra cierta. 24. Servicios de impresión. 29. Total del componente. P A S A N:				

154

Categorías	E L E C T O R A L	A Financiarse con Recursos Propios (incluyendo aportes de otras instituciones participantes y aportes a terceros.	A Financiarse con aportes del CCNACYT	
			TOTALES DE COMPONENTES	TOTALES DE COMPONENTES
	V I S I T A S:			
20.	<u>Capacitación y eventos colectivos.-</u>			
21.	Becas, pasantías y ayudas de viaje individuales.			
22.	Becas, pasantías y ayudas de viaje a grupos.			
23.	Seminarios, mesas redondas, simposios y otros (incluye gastos de capacitación, arrendamientos de locales, honorarios y otros gastos que arrojan instructores, expositores, conferenciantes y participantes).			
29.	Total del componente.			
	P A S A N T Í A S:			

DIGITOS	C L A S I F I C A D O R	A Financiarse con Recursos Propios (incluyendo aportes de otras instituciones participantes y aportes a terceros.		A Financiarse con aportes del CONACYT	
			TOTALES DE COMPONENTES		TOTALES DE COMPONENTES
	V I E N E N :				
40.	<u>Recursos físicos.-</u>				
41.	Compra de bienes inmuebles.				
42.	Arrendamiento de inmuebles (o valor de uso de inmuebles propios).				
43.	Bienes fungibles (incluye instrumental de vidrio y reactivos).				
44.	Compra de bienes muebles (o valor de arrendamiento o de uso de los mismos).				
44.01	Equipos e instrumental de investigación.				
44.02	Equipos e instrumental de índole general.				
44.03	Vehículos				
44.04	Semovientes.				
49.	Total del componente.				
	P A S A N :				

15/9

CÓDIGO	C L A S I F I C A D O R	A Financiarse con Recursos Propios (incluyendo aportes de otras instituciones participantes y aportes a terceros.)		A Financiarse con aportes del CONACYT	
			TOTALES DE COMPONENTES		TOTALES DE COMPONENTES
	V I E N E M:				
50.	<u>Gastos diversos.-</u>				
51	Varios.				
58	Imprevistos.				
59	Total del componente				
99	Grandes totales (suma de los totales de los componentes).		<input type="text"/>		2 <input type="text"/>
	COSTO TOTAL DEL PROYECTO:				3 <input type="text"/>
	* Traspase esta cifra al cuadro 3.				4 <input type="text"/>
	** Sume las cifras de los cuadros 2 y 3.				

D.- Evaluación: (Describa sucintamente el mecanismo o los mecanismos de evaluación y control interno de avance del Proyecto que se hayan previsto. Asimismo, señale si se ha previsto una evaluación interna para el término del Proyecto.

<u>Uso exclusivo del</u> <u>CONACYT</u>
<input type="checkbox"/> 21
<input type="checkbox"/> 22
<input type="checkbox"/> 23

NOTA: En caso necesario, utilice hojas adicionales del mismo tamaño, y enúmdrelas 10a, 10b, y así, sucesivamente.

E Beneficios del Proyecto.- (Enumere con la mayor precisión posible los beneficios o resultados positivos que pueden derivarse del Proyecto sea en el campo del conocimiento científico o tecnológico, sea en el terreno del desarrollo económico o social, sea, en fin, en el campo de la formación de personal. Tenga presente que, habiendo consignado anteriormente los objetivos o fines específicos que se alcanzarán con la realización del Proyecto, los beneficios que usted debe identificar en esta página, son aquellos que pueden obtenerse en la medida que los objetivos del Proyecto se cumplan. Por ejemplo, si uno de los objetivos del Proyecto fuera generar mejores variedades de maíz, correspondería en esta página enumerar como beneficios (a) disposición de variedades mejoradas de maíz y (b) mayor productividad en cultivos de maíz; en tanto que si uno de los objetivos fuese la comprobación de una hipótesis en Ciencia Básica, corresponderá en esta página identificar como beneficio un mayor conocimiento científico en el área o disciplina de que se trate).

NOTA: En caso necesario, utilice hojas adicionales del mismo tamaño, y enúmerelas 17a, 17b, y así, sucesivamente.

Uso exclusivo del CONACYT

x5=
 24 25

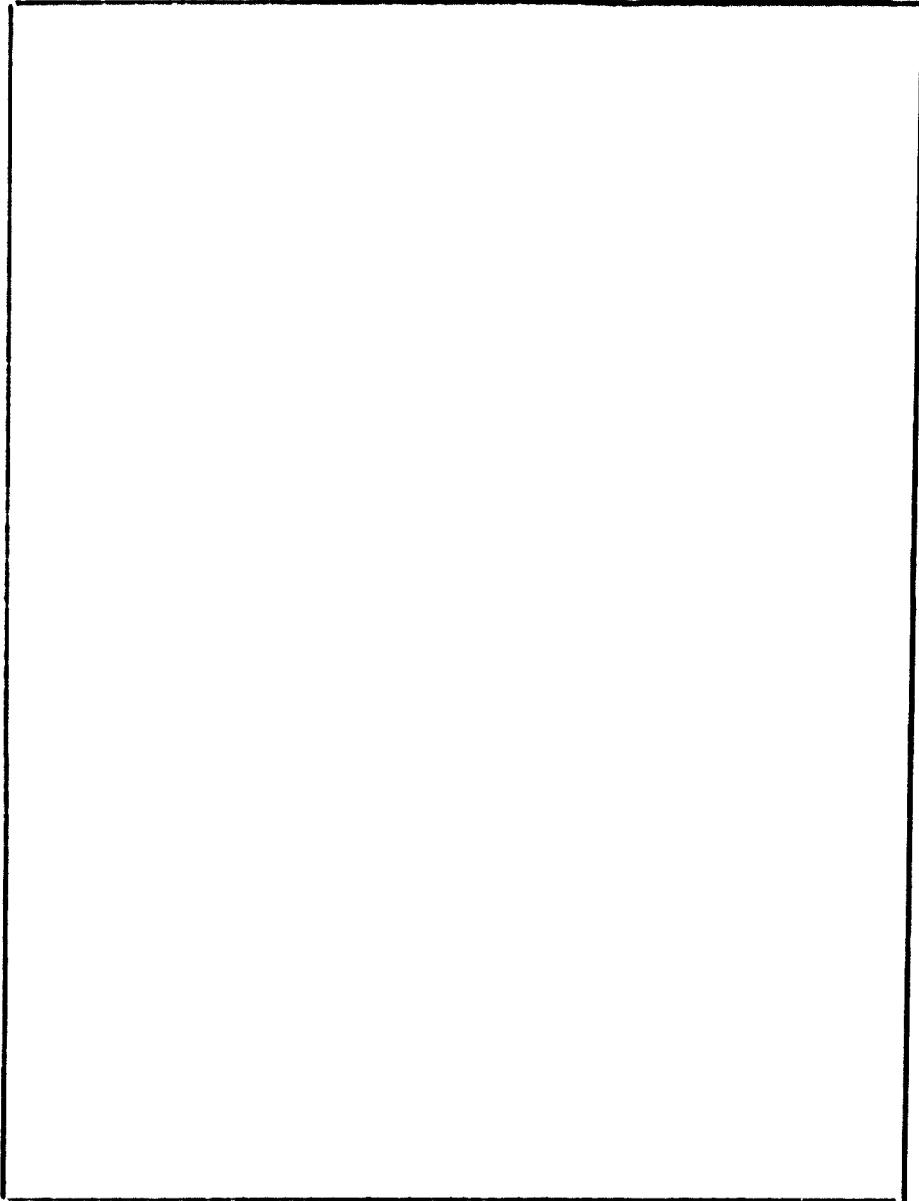
III.A.1) 26		x 6=		27
III.B.1) 28		x 1=		29
III.B.2) 30		x 1=		31
III.B.3) 32		x 1=		33
III.B.4) 34		x 1=		35
III.B.5) 36		x 1=		37
III.B.6) 38		x		39
III.C.1) 40		x 2=		41
III.C.2) 42		x 2=		43
III.C.3) 44		x 2=		45
III.D.1) 46		x 2=		47
III.D.2) 48		x 2=		49
III.D.3) 50		x 2=		51
III.D.4) 52		x 2=		53
III.D.5) 54		x 2=		55
III.D.6) 56		x 2=		57
III.D.7) 58		x 2=		59
III.E.1) 60		x 8=		61
III.F.1) 62		x 4=		63
III.G.1) 64		x 2=		65
III.G.2) 66		x 2=		67
III.G.3) 68		x 2=		69

71

70

73

F.- Comentarios:



NOTA: En caso necesario, utilice hojas adicionales del mismo tamaño, y enúndrelas 10a, 10b, y así, sucesivamente.

C O N A C Y T

LEY Y REGLAMENTOS

EDITORIAL "VOLUNTAD"
QUITO - ECUADOR

INTRODUCCION

La Dirección Ejecutiva del Consejo Nacional de Ciencia y Tecnología, CONACYT, quiere poner a disposición de las Instituciones Nacionales y Extranjeras, Públicas y Privadas, reunidos en un solo folleto, la Ley y los Reglamentos que constituyen la base legal del Sistema Nacional de Ciencia y Tecnología y, particularmente, de sus órganos superiores.

Tres son los instrumentos que conforman esta base legal: La Ley del Sistema Nacional de Ciencia y Tecnología, expedida mediante Decreto Supremo No. 3811, de 7 de agosto de 1979, promulgada en el Registro Oficial No. 9, de 23 de agosto de 1979, durante el Gobierno Constitucional del Abg. Jaime Roldós Aguilera; el Reglamento Orgánico Funcional de la Estructura del Sistema Nacional de Ciencia y Tecnología, expedido mediante Decreto Ejecutivo No. 1029, de 10 de abril de 1981, promulgado en el Registro Oficial No. 419, de 14 de abril de 1981, y el Reglamento de Designación de Miembros del Consejo Nacional de Ciencia y Tecnología, expedido mediante Decreto Ejecutivo No. 1034, de 3 de abril de 1981, promulgado en el Registro Oficial No. 418, de 13 de abril de 1981.

Con la aplicación del último Reglamento mencionado, que permitirá la designación de miembros del Consejo, su convocatoria y la efectiva reunión de este órgano asesor del CONADE y superior del Sistema en materia de política de Ciencia y Tecnología para el Desarrollo, actividades previstas para el segundo semestre de 1981, concluirá la organización

LEY DEL SISTEMA NACIONAL DE CIENCIA Y TECNOLOGIA

TITULO I

Del Sistema Nacional de Ciencia y Tecnología

Artículo 1o.- La presente Ley tiene por objeto establecer las normas básicas para la formulación de políticas, organización y funcionamiento del Sistema Nacional de Ciencia y Tecnología para el Desarrollo.

Artículo 2o. El Estado garantiza la libertad de las actividades científicas y tecnológicas de acuerdo a la legislación nacional y las promoverá en función de los requerimientos del desarrollo integral del país.

Artículo 3o. Las actividades científicas y tecnológicas se realizarán de conformidad a la política de desarrollo científico y tecnológico establecida por los órganos competentes del Sistema Nacional de Ciencia y Tecnología.

Artículo 4o. El Sistema tiene como objetivo fundamental, propiciar el desarrollo científico y tecnológico interno y la aplicación racional del conocimiento científico y tecnológico extranjero al desarrollo nacional.

Artículo 5o. El Sistema está constituido por el conjunto de políticas, recursos y actividades científicas y tecnológicas que tienen como función la creación, producción, incorporación, distribución, aplicación y promoción del conocimiento científico y tecnológico al proceso de desarrollo del país.

Artículo 6o. Las áreas de actividad del Sistema son:

- a. Desarrollo Científico;**
- b. Desarrollo Tecnológico;**
- c. Planificación científica y tecnológica;**
- d. Desarrollo de la infraestructura científica y tecnológica;**
- e. Comercialización y transferencia de tecnología.**

TITULO II

De la Administración del Sistema

Artículo 7o. El Sistema se compone de organismos rectores, asesores y organismos operativos.

Artículo 8o. Los organismos rectores del Sistema son:

- a. El Consejo Nacional de Ciencia y Tecnología.**
- b. La Dirección Ejecutiva.**
- c. Las Comisiones Sectoriales de Ciencia y Tecnología.**

Artículo 9o. Los organismos asesores del Sistema constituyen las Comisiones de Desarrollo Científico y de Desarrollo Tecnológico.

Artículo 10. Los organismos operativos son las instituciones del Sector Público y Privado que desarrollan actividades científicas y tecnológicas.

TITULO III

De los Organismos del Sistema

CAPITULO I

Del Consejo Nacional de Ciencia y Tecnología

Artículo 11. El Consejo Nacional de Ciencia y Tecnología es uno de los órganos asesores del Consejo Nacional de Desarrollo (Junta Nacional de Planificación) y es el organismo superior del Sistema en materia de política de Ciencia y Tecnología para el Desarrollo.

Artículo 12o.- El Consejo está conformado por el Presidente del Consejo Nacional de Desarrollo (Junta Nacional de Planificación) quien lo presidirá.

El Ministro de Educación y Cultura, el Ministro de Industrias, Comercio e Integración, en representación del Gabinete.

Un representante del Consejo Nacional de Educación Superior.

Un representante de los Institutos Nacionales que realizan investigación científica y tecnológica.

Un representante de la Comunidad Científica.

Un representante de las Cámaras y Asociaciones de la Producción.

Actuará como Secretario el Director Ejecutivo.

El Consejo podrá considerar la participación, en sus sesiones y actividades, de personas o representantes de Instituciones relacionadas con actividades Científicas y Tecnológicas de conformidad al Reglamento.

Los Ministros de Estado que no puedan asistir a las sesiones del Consejo, designarán al funcionario de más alto nivel del respectivo Ministerio para que lo representen.

Artículo 13o.- Las funciones del Consejo son:

1. Definir, dictar, orientar y coordinar las políticas de:

a. Desarrollo y aplicación de la Ciencia y Tecnología de conformidad a los objetivos del Desarrollo Nacional.

- b. **Formación y adiestramiento de los recursos humanos para el desarrollo y aplicación de la Ciencia y Tecnología.**
 - c. **Promoción de la investigación científica y tecnológica.**
 - d. **Desarrollo de la infraestructura científica y tecnológica.**
2. **Adoptar la política en materia de selección, evaluación e incorporación de tecnología extranjera en coordinación con el Organismo Nacional Competente encargado de la aprobación de los respectivos contratos de Comercialización, Transferencia de Tecnología o de índole similar.**
 3. **Aprobar planes y programas generales y asegurar su financiamiento continuo y permanente, de acuerdo a la naturaleza de las actividades científicas y tecnológicas.**
 4. **Delegar a la Dirección Ejecutiva, la conformación de los Comités Técnicos en las áreas que se considere conveniente.**
 5. **Aprobar el presupuesto de la Dirección Ejecutiva, de acuerdo a la Ley Orgánica de Administración Financiera y Control.**

Artículo 14o.- El Consejo funcionará de conformidad a las normas reglamentarias que se dicten para este efecto.

Artículo 15o. El Consejo podrá dictar Acuerdos y Resoluciones que sean necesarios para organizar el funcionamiento del sistema y asegurar la ejecución de las políticas científicas y tecnológicas.

CAPITULO 2

De la Dirección Ejecutiva

Artículo 16o. La Dirección Ejecutiva es el organismo técnico y administrativo superior del Sistema; y, tiene capacidad para ejercer derechos y contraer obligaciones.

Artículo 17o.- Las funciones de la Dirección Ejecutiva son:

- a. Realizar los estudios y presentar los informes correspondientes para la adopción de políticas por parte del Consejo Nacional de Ciencia y Tecnología.
- b. Sugerir prioridades y presentar para la aprobación del Consejo los planes y programas generales de Ciencia y Tecnología.
- c. Ejecutar las decisiones del Consejo.
- d. Transmitir a los organismos competentes las políticas en materia de Ciencia y Tecnología adoptadas por el Consejo, para la debida aplicación.
- e. Integrar y participar directamente, o por medio de su representante, en los Organos encargados de la aplicación de las políticas científicas y tecnológicas señaladas por el Consejo.
- f. Coordinar las actividades técnicas y administrativas de los organismos que integran el sistema.
- g. Asesorar a las entidades públicas y privadas en la formulación de actividades científicas y tecnológicas de interés nacional.
- h. Evaluar las actividades científicas y tecnológicas en relación con el desarrollo nacional.
- i. Colaborar con los institutos de educación superior y con los de investigación, en los planes de desarrollo de las carreras científicas y técnicas y en la formación de investigadores.
- j. Coordinar con el Instituto Ecuatoriano de Crédito Educativo y Becas, la utilización eficiente de las becas que requiere el desarrollo científico y tecnológico nacional.

- k. Establecer criterios, normas o lineamientos generales de evaluación para la incorporación de tecnología, fundamentalmente por parte del sector público, conjuntamente con los organismos que tienen esta función en sus respectivos sectores de actividad.
- l. Compatibilizar la ejecución de las políticas de desarrollo global, sectorial, regional y de fomento a la producción, con las de desarrollo científico y tecnológico.
- m. Asignar los recursos para la realización de proyectos financiados por el Consejo Nacional de Ciencia y Tecnología aprobados de conformidad a las políticas que a este respecto dictare el Consejo.
- n. Aprobar la integración de Comités Técnicos y regular su funcionamiento.
- o. Coordinar con el Comité Nacional de Cooperación Técnica la suscripción de convenios internacionales de cooperación técnica para el desarrollo de la ciencia y la tecnología.
- p. Organizar un registro permanente de la asistencia técnica internacional en materia científica y tecnológica.
- q. Organizar un registro de las empresas nacionales públicas o privadas y demás entidades usuarias de ciencia y tecnología.
- r. Mantener registros actualizados de los recursos humanos, institucionales, financieros y físicos destinados a las actividades científicas y tecnológicas.
- s. Las demás funciones administrativas que se establecerán en el correspondiente reglamento orgánico y funcional y otras que le asignare el Consejo.

CAPITULO 9

Del Director Ejecutivo

Artículo 18o. El Director Ejecutivo será nombrado por el Presidente del Consejo Nacional de Desarrollo, de la terna que presente el Consejo Nacional de Ciencia y Tecnología, por un período de cinco años, pudiendo ser reelegido.

Artículo 19o.- Para ser Director Ejecutivo se requiere, tener experiencia de por lo menos cinco años en funciones directivas vinculadas con actividades científicas y tecnológicas.

Artículo 20o.- Las funciones del Director Ejecutivo son:

- a. Ejercer la representación legal de la Dirección Ejecutiva del Consejo Nacional de Ciencia y Tecnología.
- b. Ejecutar las decisiones del Consejo.
- c. Planificar, dirigir y coordinar las actividades de la Dirección Ejecutiva.
- d. Solicitar asesoría e informes necesarios a las Comisiones de Desarrollo Científico, Desarrollo Tecnológico y Sectoriales de Ciencia y Tecnología.
- e. Presentar al Consejo, para su aprobación, los planes y programas generales del Sistema Nacional de Ciencia y Tecnología; el presupuesto de las actividades científicas y tecnológicas, de conformidad con las recomendaciones de los Comités Técnicos; y, el presupuesto ordinario de la Dirección Ejecutiva.
- f. Contratar, nombrar y remover al personal técnico y administrativo de su dependencia e informar al Consejo Nacional de Ciencia y Tecnología de acuerdo con la Ley.

- g. Autorizar los compromisos y los gastos para el funcionamiento del Consejo, la Dirección Ejecutiva y Comités Técnicos.
- h. Elaborar y someter a la aprobación del Consejo Nacional de Ciencia y Tecnología los reglamentos respectivos.
- i. Las demás que le confiere la presente Ley y Reglamentos.

CAPITULO 4

De la Organización Técnica y Administrativa

Artículo 21o.- La organización y funciones del departamento técnico y administrativo de la Dirección Ejecutiva serán las que se determinen en el Reglamento orgánico y funcional.

CAPITULO 5

De las Comisiones Sectoriales de Ciencia y Tecnología

Artículo 22o.- Las Comisiones Sectoriales se constituyen con la finalidad de incorporar plenamente el aspecto científico y tecnológico en las actividades del sector público.

Artículo 23o.- Se constituirán Comisiones sectoriales de Ciencia y Tecnología en Educación, Salud, Agricultura, Industria, Pesca, Energía y las demás que creare el Consejo, atendiendo a la importancia nacional y de acuerdo al espíritu de la presente Ley.

Artículo 24o.- Los Institutos Nacionales, cuya actividad se relacione con los sectores o áreas a que se refiere el artículo anterior, formarán parte del Sistema Nacional de Ciencia y Tecnología y coordinarán sus actividades a través del Consejo Nacional de Ciencia y Tecnología.

CAPITULO 6

De las Comisiones de Desarrollo Científico y Desarrollo Tecnológico

Artículo 25o.- Las Comisiones de Desarrollo Científico y Desarrollo Tecnológico se constituirán para asesorar al Consejo Nacional de Ciencia y Tecnología y a la Dirección Ejecutiva.

Artículo 26o.- La Comisión de Desarrollo Científico estará integrada por representantes de las Ciencias básicas, en Química, Geología, Física, Matemáticas, Biología, Meteorología y Ciencias Sociales, quienes designarán a su Presidente.

Artículo 27o.- La Comisión de Desarrollo Tecnológico estará integrada por representantes de las Ciencias aplicadas en Ingeniería Civil, Mecánica, Química, Eléctrica, Agrícola, Electrónica y Naval, quienes designarán a su Presidente.

Artículo 28o.- Los miembros de las Comisiones de Desarrollo Científico y Desarrollo Tecnológico, serán nombrados por el Consejo Nacional de Ciencia y Tecnología, según las designaciones efectuadas por instituciones, asociaciones científicas o colegios de profesionales, debidamente organizados en cada disciplina científica o tecnológica.

Artículo 29o.- Los miembros de las Comisiones serán a su vez Directores de los Comités Técnicos, quienes se encargarán de su organización y coordinación.

CAPITULO 7

De los Organismos Operativos

Artículo 30o.- Las instituciones que desarrollan actividades científicas y tecnológicas integrarán el sistema y, por lo tanto, tendrán los siguientes deberes y atribuciones:

- a. Presentar sus planes, programas o proyectos de actividades científicas y tecnológicas al Consejo Nacional de Ciencia y Tecnología para su consideración en la planificación general de ciencia y tecnología.
- b. Presentar al Consejo o a la Dirección Ejecutiva sus recomendaciones para el mejor funcionamiento del sistema.
- c. Integrar a través de sus delegados, los Comités Técnicos.
- d. Presentar a la Dirección Ejecutiva, los proyectos específicos que no consten en los planes o programas de las Instituciones, y que vayan a ser financiados con fondos del Consejo y Dirección Ejecutiva del Sistema para su aprobación y financiamiento.
- e. Facilitar la información que requieran los organismos rectores del Sistema para fines de planificación, coordinación y evaluación de las actividades científicas y tecnológicas.
- f. Utilizar los servicios que disponen los organismos rectores del Sistema.

TITULO IV

DE LOS COMITÉS TÉCNICOS

Artículo 31o. Los Comités Técnicos constituirán un mecanismo de vinculación entre los organismos rectores y los operativos del Sistema.

Artículo 32o. Los Comités se constituirán por áreas, sectores, temas, o proyectos.

Artículo 33o. Los Comités Técnicos estarán integrados por representantes designados por los institutos de investigación, por las universidades y politecnicas, del sector productivo de acuerdo al área, sector, tema o proyecto, con el que se halle vinculado, por los organismos del Estado que se relacionen con las actividades del Comité y por personas de reconocida capacidad científica y técnica.

Artículo 94o.- Los Comités tendrán el carácter de asesores permanentes o eventuales y funcionarán exclusivamente para el objetivo concreto que fijare el Consejo y la Dirección Ejecutiva.

Artículo 95o.- Los Comités Técnicos tendrán las siguientes funciones:

- a. Participar en la elaboración de la política científica y tecnológica en el área de su competencia y diseñar programas o proyectos específicos en ciencia y tecnología que contribuyan al logro de sus objetivos.
- b. Evaluar las solicitudes de financiamiento y asistencia técnica de proyectos específicos que sean presentados a consideración de la Dirección Ejecutiva.
- c. Informar a la Dirección sobre la capacidad técnica y financiera de los institutos de investigación.
- d. Sugerir los institutos a los que se debe asignar la ejecución de determinados proyectos.
- e. Evaluar en forma continua los proyectos específicos de investigación.
- f. Sugerir programas de formación y adiestramiento de investigadores de alto nivel y asistencia de investigación en las diferentes ramas.
- g. Informar sobre la conveniencia de incorporar tecnologías extranjeras de conformidad a los requerimientos del país, a la oferta interna y a las normas y políticas nacionales.
- h. Informar sobre otros asuntos que se sometan a su consideración.

TITULO V

DEL FINANCIAMIENTO Y PATRIMONIO

Artículo 36o Los Organismos Rectores que conforman el Sistema Nacional de Ciencia y Tecnología se financiarán de la siguiente manera:

- a. Las asignaciones ordinarias que se hagan constar en el Presupuesto del Gobierno Nacional.
- b. Los fondos provenientes de Instituciones y Organismos Nacionales e Internacionales, para el fomento y desarrollo de la ciencia y la tecnología.
- c. Los fondos provenientes de la explotación de patentes de invención que resulten de investigaciones financiadas por fondos públicos, o producto de convenios internacionales en las cuales participe el Estado Ecuatoriano.
- d. Otros ingresos.

Artículo 37o. El Consejo y la Dirección Ejecutiva dispondrán de un presupuesto general para su funcionamiento, y en el cual el monto para financiar inversiones en actividades científicas y tecnológicas a ser ejecutadas por los organismos operativos, no podrá ser inferior al 65 o/o del valor total de dicho Presupuesto.

La asignación de fondos públicos para las actividades científicas y tecnológicas, requerirá del dictamen de los organismos rectores del sistema, para cuyo efecto los organismos operativos presentarán sus programas y proyectos de conformidad a las normas reglamentarias que dictará el Consejo.

Artículo 38o.- La distribución de las partidas globales para investigación y desarrollo científico y tecnológico que consten en el Presupuesto del Estado y de los diferentes organismos, se tramitarán de acuerdo a las normas de la Ley Orgánica de Administración Financiera y Control.

Disposiciones Generales

PRIMERA.- De conformidad con el literal b, numeral 1. del Artículo 13 de esta Ley, facúltase al Consejo Nacional de Ciencia y Tecnología la creación de un Instituto Nacional con los siguientes propósitos básicos:

- a) Formar y capacitar recursos humanos en los campos de la ciencia y la tecnología; y,
- b) Colaborar con los Institutos de Educación Superior y con los de investigación existentes en los planes de desarrollo de carreras científicas y técnicas.

SEGUNDA.- Las Comisiones Sectoriales serán los Institutos, Consejos o Comisiones existentes reguladas por su propia legislación o la integrarán instituciones afines del área respectiva.

El Consejo Nacional de Ciencia y Tecnología designará la Institución que dirija las Comisiones Sectoriales y sus integrantes.

TERCERA En el Presupuesto del Gobierno Nacional se contemplará dentro de la apertura sectorial y programática, una actividad que haga referencia a la Ciencia y Tecnología.

CUARTA. Las representaciones de las Ciencias Básicas y Aplicadas que no hayan sido mencionadas en los artículos 26 y 27, se integrarán a aquellas de mayor afinidad para fines de elección y representación, según lo determine el reglamento respectivo.

QUINTA. Los integrantes de las respectivas Comisiones, serán elegidos por un período máximo de 3 años y declarados en Comisión de Servicio, con sueldo, por sus respectivas instituciones, por igual tiempo. Dichos miembros no podrán ser reelegidos.

Disposiciones Transitorias

PRIMERA. Hasta que se constituya el Consejo Nacional de Desarrollo, las actividades, responsabilidades y atribuciones determinantes a la presente Ley, las asumirá la Junta Nacional de Planificación y Coordinación Económica.

SEGUNDA. La designación y alternabilidad de los miembros a que se refieren los artículos 26 y 27 se determinarán en el Reglamento respectivo.

TERCERA. Los organismos rectores del sistema, conjuntamente con la Dirección Nacional de Personal elaborarán el escalafón para científicos y técnicos que trabajarán dentro del sistema.

CUARTA. La División de Ciencia y Tecnología de la Junta Nacional de Planificación, con sus recursos humanos y materiales pasará a formar parte de la Dirección Ejecutiva de Ciencia y Tecnología y funcionará de conformidad al Reglamento Orgánico y Funcional que se dictará para el efecto.

QUINTA. La Dirección Ejecutiva, coordinando su actividad con organismos públicos y privados apropiados, elaborará en el plazo de 6 meses una evaluación de los recursos humanos, institucionales, financieros y físicos en Ciencia y Tecnología en el país.

SEXTA. La aplicación del Artículo 37 se efectuará a partir del tercer año de vigencia de la presente Ley.

SEPTIMA. Las disposiciones del presente Decreto, como Ley Especial, prevalecerán sobre aquellas que se opongan y entrará en vigencia a partir de la fecha de su promulgación en el Registro Oficial.

encargándose de su ejecución a los Ministros de Estado representados en el Consejo de Ciencia y Tecnología y el Ministerio de Finanzas.

TELEGRAM

INDICATE
 COLLECT
 CHARGE TO USAID

12065: 11832: E.O. 11652: TAGS: SUBJECT ACTION: AID AMB DCM CHRON RF	FROM	CLASSIFICATION	
	Ambassy QUITO	UNCLASSIFIED	RTI
	N/A Authorization Change for Rural Technology Transfer (Title XII) Grant Secstate WASHDC IMMEDIATE UNCLASSIFIED QUITO <u>5,550</u> AIDAC FOR NORMA PARKER LAC/DR/SA 1. <u>Problem:</u> In negotiating the Project Agreement for the Rural Technology Transfer (Title XII) Grant Project, the GOE has requested that the Rural Technology Trans- fer System (RTTS), which is to be made operational through the Title XII Project, be established in the National Development Council (COMADE) rather than in the Rural Development Secretariat (RDS). This change will require two minor modifications in the Project Authorization as indicated in Paragraph 8 below. <u>End</u> <u>Problem.</u> 2. <u>Discussion:</u> The new GOE on assuming office in August 1979 attached high priority to rural develop- ment, particularly to projects that meet the basic		

DRAFTED BY: AR:JASanbraillo:mecn	DRAFTING DATE: 8/15/80	TEL. EXT.:	CONTENTS AND CLASSIFICATION APPROVED BY: John A. Sanbraillo, AID Representative
CLEARANCES: D/AR:ANDiaz (draft) RDO:VCusumano (draft)	O/DP:FMaldeado (draft)		

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needs of the rural poor. To plan, coordinate and supervise the implementation of its new rural development programs, the GOE proposed the establishment of a Rural Development Secretariat (RDS) at a supra-cabinet level. The RDS was to be attached to either COMADE or directly to the Presidency. It was to be the GOE's principal instrument for bringing about improved institutional coordination for implementing rural poverty programs, particularly IRD projects, and for addressing institutional, technological, and human resource constraints in carrying out such programs.

3. The RDS concept, organizational structure and operating procedures were developed early in the first year of the Roldós Administration with the assistance of IICA, FAO and other international advisors. The central focus of the RDS was to be directed to planning, coordinating, funding and supervising area-specific integrated rural development projects. However, it was also to have a broader mandate in rural development planning and policy formulation, institutional strengthening and technology development. Some COE and international advisors saw the RDS evolving possibly into a Ministry of Rural Development or Rural Development Corporation that could better deal with the broader problems of rural poverty.

4. At the request of the COE, the Mission developed two projects in support of the COZ's new rural development initiatives. The first was to support area-specified IKD projects included in the COE's National Development Plan. The second was a Title XII Project to finance a series of technical assistance/training sub-projects that would address key institutional, technological and human resource constraints. The COE initially requested that both projects be coordinated by the new RDS. Because of the RDS commitment to dealing with rural poverty and COE institutional coordination problems, the USAID strongly supported the RDS concept. (The RDS is to be one of the COE's most important new development initiatives and it is a symbol of the priority the COE attaches to dealing with the country's rural poverty problems.)

5. Due to a very sensitive political conflict between the Ecuadorian legislative and executive branches, a number of key COE development decisions, including the formal establishment of the RDS, were delayed during the period February-July 1980. However, the Embassy/USAID were assured by the highest COE officials that the RDS would be created and that it would coordinate the two AID projects. The only issue appeared to be the location of the RDS—in CONADE or in the Presidency.

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Annex H
Pag. 4 of 7

As indicated in the IRD and Title XII Project Papers, USAID believes that both of these projects could function effectively under either CONADE or within the Presidency. The PPs analyzed both options and indicated that either was feasible and acceptable to USAID. In both cases, the IRD and RITS mechanisms would be placed in a super-cabinet position that would facilitate high level GOE support and coordination. We saw the final decision on location as basically a GOE political decision that would not affect the overall feasibility of either project. The Mission therefore submitted to AID/W the two Project Papers in late June and they were approved by the DAEC in July.

5. On August 10, in his address to the GOE Congress, President Roldós formally announced the establishment of the RDS under the Presidency. The President indicated that the RDS would be mandated to plan, coordinate, fund and supervise integrated rural development projects starting with the 17 IRD projects included in the National Development Plan. However, for several weeks preceding the President's speech there ensued an internal debate on the scope of the RDS program (i.e. should the RDS supervise only IRD projects or broader rural sector functions). Based on recommendations from several GOE agencies, the President

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OPTIONAL FORM 162a(4)
(Formerly F-413(44))
January 1971
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decided to narrow somewhat the functions of the RDS to include only planning, funding, coordinating and supervising IRD field projects. (The RDS is now to have only those functions described in USAID's Integrated Rural Development PP.) Broader areas of concern outside of IRD project areas were eliminated from the RDS mandate.

6. The Mission's Title XII Project includes some subprojects for assisting the implementation of IRD projects, particularly in areas of adaptive research. However, the Project was designed to have a broader sectorial focus. A majority of Title XII subprojects will impact in areas of concern outside of field level IRD projects. For example, subprojects for agricultural planning and statistics cooperation, soybean research and extension and with middle level agricultural training at the Catholic University of Guayaquil will not have a direct relationship with the IRD program.

~~The COE~~ The COE argues that this change has the following advantages:

1. Given the high priority that the COE attaches to implementing IRD field projects, the RDS should concentrate its efforts on getting these projects off the ground. The broader Title XII effort may distract

182

or slow down the IRD program.

ii. The RTTS can be made operational more quickly in CONADE, an ongoing institution with an already existing organizational and administrative structure.

iii. CONADE's broader national planning mandate will better facilitate implementation of the RTTS and its subprojects. Indeed, CONADE established initial priorities for the Title XII project. CONADE will continue to provide overall policy direction to both RDS and MAG thereby ensuring adequate coordination of the Title XII Project with GOE rural development and agricultural priorities.

7. Disadvantages: USAID sees no particular disadvantages with the proposed changes and concurs with the GOE's recommendation. As we discussed in the Title XII PP, the RTTS is a self-contained system that could function equally well in either the Presidency or CONADE. In judging this decision the overriding consideration must be GOE policy and locational preferences. Given past difficulties in utilizing U.S. universities in Ecuador, we believe that it is extremely important that the Title XII Project be undertaken within an organizational framework that is acceptable to the GOE. Forcing the Title XII Project into the RDS could be counterproductive and would ensure its

failure.

8. Recommendations: That AID/W amend the Rural Technology Transfer (Title XII) Project Authorization to provide for the following two modifications:

a. Change item b (i) of the Authorization to read as follows: quote (i) establish the RTTS as part of CONADE, with a chief operating officer of the RTTS named and on board; unquote.

b. Change reference to RDS in section (d) of authorization to CONADE.

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OPTIONAL FORM 4
(Formerly FB-41)
January
Dept. of State

185

Equipment List for
CONACYT
(Estimated Costs)

1. Computer Hardware	
- CPU and Disk Drive	\$ 25,000
- (4) (CRT) Terminals	15,000
- (3) Printers	7,358
- Multilingual Package	125
- Paper Feeder	1,660
- Misc. Software	1,500
- Misc. Supplies	<u>2,000</u>
	52,643
- Transportation	<u>8,000</u>
Subtotal	60,643
2. Portable Partitions (10)	
\$140 each	1,400
3. Filing Cabinets (8) with Locks	
\$180 each	1,440
4. Bookcase (8)	
\$100 each	800
5. Desks and Chairs (4)	1,217
6. Credenzas (4)	
\$340 each	1,360
7. Wearing Apparel Racks (2)	
\$70 each	140
8. One complete Executive Style Office Set (desk, chair, credenza, bookcase, office table, occasional table, wearing apparel rack, telephone cabinet, etc.)	<u>3,000</u>
Subtotal	9,357
TOTAL	\$70,000