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

ECUADOR

PROJECT PAPER

RURAL TECHNOLOGY TRANSFER SYSTEM
(TITLE XII)

AID/LAC/P-55

Project Number: 518-0032

UNCLASSIFIED

AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT PAPER FACESHEET	1. TRANSACTION CODE <input type="checkbox"/> A A = ADD <input type="checkbox"/> C C = CHANGE <input type="checkbox"/> D D = DELETE	PP 2. DOCUMENT CODE 3
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3. COUNTRY/ENTITY Ecuador	4. DOCUMENT REVISION NUMBER <input type="checkbox"/>
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5. PROJECT NUMBER (7 digits) [518-0032]	6. BUREAU OFFICE A. SYMBOL [IA] B. CODE [05]	7. PROJECT TITLE (Maximum 40 characters) [Rural Technology Transfer System]
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8. ESTIMATED FY OF PROJECT COMPLETION FY [8] [5]	9. ESTIMATED DATE OF OBLIGATION (Title XII) A. INITIAL FY [8] [0] B. QUARTER [4] C. FINAL FY [8] [5] (Enter 1, 2, 3, or 4)
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10. ESTIMATED COSTS (\$000 OR EQUIVALENT \$) -

A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. LC	D. TOTAL	E. FX	F. LC	G. TOTAL
AID APPROPRIATED TOTAL						
(GRANT)	333	67	400	14,400	900	5,300
(LOAN)						
OTHER U.S. 1.						
U.S. 2.						
HOST COUNTRY		685	685		9,000	9,000
OTHER DONOR(S)						
TOTALS	333	752	1,085	4,400	9,900	14,300

11. PROPOSED BUDGET APPROPRIATED FUNDS \$000-

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH CODE		E. 1ST FY 80		H. 2ND FY 81		K. 3RD FY 82	
		C. GRANT	D. LOAN	F. GRANT	G. LOAN	I. GRANT	J. LOAN	L. GRANT	M. LOAN
(1) FN	284	968		400		600		1,000	
(2)									
(3)									
(4)									
TOTALS				400		600		1,000	

A. APPROPRIATION	N. 4TH FY 83		O. 5TH FY 84		LIFE OF PROJECT		12. IN-DEPTH EVALUATION SCHEDULED MM YY 10 81
	P. GRANT	Q. LOAN	R. GRANT	S. LOAN	T. GRANT	U. LOAN	
(1) FN	1,200		1,100		5,300		
(2)							
(3)							
(4)							
TOTALS	1,200		1,100		5,300		

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

1 YES

14. ORIGINAL OFFICE CLEARANCE		15. DATE DOCUMENT RECEIVED IN AID # OR FOR AID # DOCU. MENTS. DATE OF DISTRIBUTION	
SIGNATURE <i>John A. Sanbrailo</i>			
TITLE John A. Sanbrailo AID Representative, USAID/E		DATE SIGNED 06 09 80	

UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON D C 20523

ASSISTANT
ADMINISTRATOR

PROJECT AUTHORIZATION

Name of Country: Ecuador
Name of Project: Rural Technology Transfer System
Number of Project: 518-0032

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 \$5,300,000 in grant funds over a five-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 foreign exchange and local currency costs for the project.

2. The project consists of (a) financing a series of subprojects designed to address the constraints to institutional improvement and technology generation and dissemination, and (b) assisting the Government of Ecuador (the "GOE") in establishing a Rural Technology Transfer System (RTTS) which will deal further with these as well as other constraints (the "Project").

3. The Project Agreement, 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. Source and Origin of Goods and Services

Goods and services, except for ocean shipping, financed by A.I.D. under the Project 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 Project shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States.

b. Conditions Precedent to Initial Disbursement

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

(i) formally establish the Rural Development Secretariat (RDS) and establish the RTTS as part of the RDS, with a chief operating officer of the RTTS named and on board; and

(ii) cause the RTTS 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.

c. Condition Precedent to Disbursements for the RTTS Fund

Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, for the RTTS Fund, the RTTS 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.

d. Conditions Precedent to Disbursements for each Calendar Year

Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, for each calendar year, the RDS shall, except as A.I.D. may otherwise agree in writing, furnish in form and substance satisfactory to A.I.D. an implementation plan for each such year, listing subprojects anticipated to be initiated during such calendar year and a statement of anticipated financial needs for the Project during such year, both on-going and new.

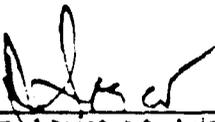
e. Conditions Precedent to Disbursements for each Subproject

Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, to finance each subproject, the RTTS shall, except as A.I.D. may otherwise agree in writing, furnish in form and substance satisfactory to A.I.D., for each such subproject, technical, economic, social and environmental analyses, a detailed administrative plan, and written evidence of a financial commitment from each participating institution.

f. Covenants

Except as A.I.D. may otherwise agree in writing, the GOE shall covenant and agree that:

- (i) it will contribute to the RTTS Fund, beginning no later than the third Project year, annual funds of amounts jointly agreed to by A.I.D.;
- (ii) it will continue the RTTS Fund, with adequate funding, after the termination of the Project; and
- (iii) 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.



 Acting Assistant Administrator
 Bureau for Latin America
 and the Caribbean

7/31/80

 Date

Clearances:

GC/LAC:JLKessler JLK date 7/16
 LAC/SA:RWeber _____ date _____
 LAC/DR:NParker _____ date _____
 LAC/DR:ILevy IL date _____
 LAC/DR:MBrown MB date 7/25
 GC/LAC:GMWinter GM date 7/7/80

Project Paper (PP)

RURAL TECHNOLOGY TRANSFER SYSTEM PROJECT

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Abbreviations Used for Ecuadorean

Entities and Programs

ASA	Agencia de Servicios Agropecuarios (Agency for Agriculture and Cattle Services)
BCE	Banco de Cooperativas del Ecuador (Ecuadorean Bank of Cooperatives)
BNF	Banco Nacional de Fomento (National Development Bank)
CEDEGE	Comisión de Estudios para el Desarrollo de la Cuenca del Río Guayas (Studies Commission for the Development of the Guayas Basin)
CONADE	Consejo Nacional de Desarrollo (National Development Council)
CREA	Centro de Reconversión Económica del Azuay, Cañar y Morona Santiago (Center for the Economic Rehabilitation of Azuay, Cañar and Morona Santiago)
CRM	Centro de Rehabilitación de Manabí (Center for the Rehabilitation of Manabí)
CUG	Universidad Católica de Guayaquil (Catholic University of Guayaquil)
ENAC	Empresa Nacional de Almacenamiento y Comercialización de Productos Agropecuarios (Storage and Sale of Agricultural Products Company)
FODERUMA	Fondo de Desarrollo del Sector Rural Marginal (Development Fund for the Rural Marginal Sector)
IERAC	Instituto Ecuatoriano de Reforma Agraria y Colonización (Ecuadorean Institute for Agrarian Reform and Colonization)
INEC	Instituto Nacional de Estadísticas y Censos (National Statistics and Census Institute)
INERHI	Instituto Ecuatoriano de Recursos Hidráulicos (Ecuadorean Institute of Hydraulic Resources)
INCRAE	Instituto Nacional de Colonización de la Región Amazónica Ecuatoriana (National Institute for the Colonization of the Ecuadorean Amazon Region)
INLAP	Instituto Nacional de Investigaciones Agropecuarias (Agricultural Research National Institute)
MAG	Ministerio de Agricultura y Ganadería (Ministry of Agriculture and Livestock)
PREDESUR	Programa Regional para el Desarrollo del Sur del Ecuador (Regional Program for the Development of Ecuador's South)
PIDA	Proyectos Integrados de Desarrollo Agropecuario (Integral Agricultural Development Projects)
RDS	Rural Development Secretariat
RTTS	Rural Technology Transfer System
SECE	Sociedad Ecuatoriana de Ciencias del Suelo (Ecuadorean Soil Science Society)

SUMMARY AND RECOMMENDATIONS

A. Introduction and Overview

During almost the entire decade of the 1970s Ecuador was governed by dictatorial rule. In August 1979 a civilian government assumed office through the first free elections since 1968. The new GOE administration committed itself to begin major structural and social reforms that could deal more effectively with Ecuador's widespread poverty and its serious agricultural development problems.

Within Ecuador the New Roldos government was initially greeted with widespread enthusiasm. The President and Vice President received 70% of the vote, the largest electoral majority ever given to any candidates in Ecuadorean history. There was a great deal of euphoria about a new beginning. President Roldos (39 years old) and Vice President Hurtado (40 years old) represent the emergence throughout Ecuadorean society of a new group of young, democratically oriented technocrats who are strongly committed to overcoming Ecuador's historic development problems. As President Roldos expressed, he hoped that a new page in Ecuadorean history would begin in 1980 with the initiation of the GOE's new Development Plan.

Yet Ecuadorean democracy is still very fragile. After nine years of dictatorial rule, the country has been passing through a difficult re-adjustment period. Disagreements between the Ecuadorean executive and legislative branches of government have significantly slowed down major new development initiatives and created growing frustrations with the new democratic government. These frustrations have increased because expectations, particularly among the poor, are so high. The GOE must also confront these expectations at a time of significant budget deficits, declining oil exports, stagnating agricultural production, continuing drought conditions, increasing rural to urban migration, rising inflationary pressures and growing social tensions.

Since assuming office the new GOE has been able to concentrate its attention on only a few development initiatives. For example, it has first continued a number of ongoing infrastructure and credit programs of the previous government while attempting to give its 1980 budget more of a basic human needs orientation. Second, it has been attempting to create an effective National Development Council (CONADE) that could better plan, coordinate and prioritize new GOE development activities. Third, it developed major new programs of low cost housing for the urban poor of Guayaquil and Quito. Fourth, within an administrative reform program, it has begun a public sector management training program. Fifth, it has designed a new mechanism for undertaking integrated rural development programs that can impact more effectively on the multiple problems of the rural poor. And sixth, it has concentrated a large effort on preparing, and obtaining a consensus, on a Five Year Development Plan and complementary sector analytic documents. While some of these programs have been diluted or delayed by the GOE Congress, the executive branch has attempted to move forward on several significant new development initiatives.

The GOE's new National Development Plan is perhaps the best indication of the intentions of the Ecuadorean executive branch. Working through its National Development Council (CONADE), headed by Vice President Hurtado, the new Administration translated its broad campaign promises (the "21 Puntos Programáticos") into a detailed Development Plan that lays out for 1980-84 an ambitious effort of social and economic reforms. The Plan gives high priority to rural development and calls for an expansion in programs that meet the basic human needs of the sixty percent of the Ecuadorean population that is poor and that has been left out of the country's economic growth process. After extensive consultations with public and private sector groups, President Roldos approved the Plan by executive decree in March 1980.

The COE's new Development Plan represents a significant commitment to rural development that closely parallels AID's emphasis on assisting efforts that provide for the basic human needs of the poor majority. However, to implement its Plan effectively, the GOE must overcome the current political divisions between the executive and legislative branches that vitually have stagnated the Government. It must also deal with serious institutional, technological and human resource constraints that have been major obstacles to expanding the delivery of resources and services to the poor and to increasing Ecuadorean agricultural production. Should these limitations frustrate the objectives of the proposed Plan, major questions could be raised in Ecuador about the ability of democratic regimes to undertake fundamental development programs. For these reasons, the U. S. has a strong interest in cooperating with the new Roldos government in translating its socio-economic policies into projects that address Ecuador's most important development problems.

The Project proposed herein will mobilize the resources of Title XII universities (and possibly other sources of agricultural expertise) to assist the GOE overcome some of the critical institutional and technological constraints to implementing its new rural poverty and agricultural production programs. It will contribute to filling the gap between Ecuador's strong commitment to the poor and its weak institutional and technological capacity for dealing with the country's major poverty problems.

B. Conceptual Framework

The rural poverty and agricultural stagnation problems outlined in this paper will not be solved in the next five years. Ecuador, like other LDC's will need a continuous flow of rural and agricultural technical assistance and technologies for at least the next twenty years if it is to overcome its historic rural development problems. At present, the country does not have an effective institutional mechanism for mobilizing foreign technical assistance, training and technological resources for rural development. It has difficulty defining specific problem areas, selecting and contracting foreign technical assistance /training sources to address these problem areas, and channelling foreign technical resources to local institutions in need of assistance. This rural technology transfer "vacuum" must be filled if Ecuador is to effectively address its long term rural development problems. The Title XII provision of the Foreign Assistance Act is designed to assist LDC's with this specific problem.

In the past, USAID and other donor agencies have generally played the role of facilitating the transfer of technology and expertise to Ecuador as well as to other developing countries. These agencies have defined problem areas, selected and contracted appropriate technical expertise, and directed resources to host country institutions. In effect, USAID and other donors have attempted the important technology transfer functions that this Project expects to ultimately institutionalize within the GOE.

For example, in the 1960's and 1970's USAID arranged for the USDA to assist the Ministry of Agriculture (MAG) with institutional and planning support, Mississippi State to provide assistance to MAG and the Institute of Agricultural and Livestock Investigations (INIAP) in seed production, Utah State to assist the Ecuadorean Hydraulic Resources Institute (INERHI) with irrigation research, North Carolina State to train Ecuadorean soil scientists, the University of Florida to assist with various research activities and INTSOY to work with INIAP on soybean cultivation. However, when the AID/Ecuador program was phased out in 1966-69 and again during 1973-79, the AID technology transfer system almost completely stopped functioning. In effect, the link between Ecuadorean institutions and U. S. land grant universities and other sources of agricultural expertise depended heavily on the presence of a USAID Mission in Ecuador. Such a presence could not be guaranteed in the past. It probably cannot be guaranteed for the next twenty years.

For the 1980's the Project proposed herein will support a gradual effort through which the GOE can create its own rural technology transfer system that can maintain permanent linkages to foreign sources of technology, training and technical expertise. Through such a system it is expected that permanent linkages can be developed and maintained between Ecuadorean rural development agencies and U. S. land-grant universities and other institutions.

Moving from the technical assistance arrangements of the past to a new technology transfer system that is operated by the GOE cannot be done quickly. This will be a complex and difficult undertaking. It may take several years to fully institutionalize within the GOE the type of technology transfer system proposed herein. The system must learn by doing. Certain institutional, legal, procedural and budgetary constraints now inhibit the flow of assistance from U. S. Title XII universities and other sources of technology and expertise. For example, the GOE has limited experience in contracting directly with U. S. universities and other non-profit institutions. It currently treats them as if they were profit making consulting firms, which often limits their ability to work in Ecuador. And there is a GOE propensity to fall months behind in paying contractors.

These and other problems must be dealt with over a period of years. Legal and other special studies must be undertaken. New operating procedures and institutional structures must emerge that can encourage policy, budgetary and procedural changes that can better facilitate the flow of technical expertise to Ecuador. The Project proposed herein will support the emergence within the GOE of greater concern and a more effective institutional framework for dealing with the country's long-term needs for foreign technical assistance.

At the same time that AID is supporting a dynamic policy and institution building process within the GOE, a number of high priority rural development subprojects requiring Title XII and other assistance will be implemented. These subprojects will provide realistic examples of the type of institutional, technical and human resource problems that must be addressed by the proposed rural technology transfer system. All of these subprojects will be able to stand on their own and they will attack important institutional and technological constraints within GOE institutions. The experience gained through these subprojects, particularly by participating institutions, will be fed into the institution-building process so that the resulting approach in building the RTTS is based not only on abstract planning concepts but also on real experience. Thus, the development of the RTTS and the implementation of a number of high priority subprojects are integral parts of the institutional-building process described above.

With carefully planned, directed and managed AID and Title XII resources, USAID believes that the 1980's can be as creative and as significant a period in GOE/AID rural development programming as were the 1950's when USG development programs successfully served as the catalyst for the establishment and operation of INIAP, the Agricultural Extension Service, the Regional Development Authority for Ecuadorean Southern Sierra (CREA) and other GOE agricultural development and rural technology transfer efforts.

C. Project Description

The Project will assist the GOE establish a Rural Technology Transfer System (RTTS) in order to address two major constraints of the rural sector: institutional weaknesses and lack of technologies appropriate for small farmers. By the end of the Project the RTTS is expected to be capable of (1) identifying rural development problems and determining priorities, (2) providing top-level support for and coordinating subprojects aimed at finding solutions to priority agricultural/rural development bottlenecks, (3) identifying appropriate sources of external and internal technical expertise for the subprojects, and channeling such expertise to participating Ecuadorean rural development institutions, and (4) identifying, mobilizing, and financing sources of technical training, both within country and external, to support the subprojects.

The RTTS will be established at a supra-cabinet level. It will work with participating rural sector institutions in designing subprojects, it will have the responsibility to approve subprojects, it will administer a RTTS Fund for financing the subprojects, and it will help coordinate participating institutions and provide other support for the implementation of the subprojects. Through the Project it will receive the assistance needed to institutionalize itself. This will include long and short-term TA, staff training, funds for studies and evaluations, and a small amount of funds for equipment and vehicles.

The subprojects will be directed toward overcoming key bottlenecks in the sector, particularly those related to the research, extension and education system for small farmers. Each subproject will attempt to establish linkages among institutions involved in those three functional areas, as well as develop, test, demonstrate, and disseminate technologies appropriate for the needs of small farmers. Subproject selection criteria will ensure that each subproject is so directed. Through the RTTS Fund the Project will provide support to the subprojects, over 75% of which is expected to be a TA and training at various levels.

All TA and external training, and many of the other Project inputs will be provided through Title XII universities. The Project will provide funding to contract with one lead university to assist the GOE in project coordination and implementation. The lead university will assist in institutionalizing a permanent GOE rural technology transfer system. This work will include undertaking studies of those constraints that are inhibiting the flow of agricultural technology and expertise to Ecuador and make recommendations for overcoming the constraints.

Another major role of the lead university will be to assure provision of the necessary technical expertise and training for subproject activities undertaken by participating GOE rural development agencies. It will provide these resources through its own staff or through subcontracts with other U. S. universities, institutions or individuals. (The lead university will act much like an IQC contractor for the Project). It will be expected to participate actively in all phases of the Project from subproject design, selection and implementation through overall project evaluation. The lead university will centralize in one Title XII institution overall responsibility for project implementation and it will provide USAID with complementary assistance in monitoring Project activities. This will be an important aspect of Project management, given the relatively small USAID staff, now planned for Ecuador.

At the end of the Project, it is expected that the GOE's rural technology transfer system will be able to assume the functions being performed by the lead university and that a permanent system will have been made operational. Through the subprojects undertaken jointly by the participating rural development agencies, the RTTS, and the lead university, the GOE will also have made progress toward addressing key institutional and technological constraints which now hinder efforts to solve some of Ecuador's basic rural development problems.

D. Implementation Agencies and Summary Financial Plan

The nucleus of the RTTS is a small office composed of an Executive Director and a professional staff with experience in research, extension, and education pertinent to the rural sector. This nucleus is responsible for overseeing the design and monitoring all subprojects financed under the Project. It arranges for and coordinates the participation of the various institutions that will be involved in preparing, carrying out and evaluating individual subprojects.

The participation and coordination of these entities will be formalized through working agreements reviewed and approved by an intra-ministerial Advisory Board. The Board will include representatives from MAG and its affiliated institutions (INIAP, INERHI, IERAC, BNF), the Ministries of Health, Education, Social Welfare, and Public Works, CONADE and other entities as may become appropriate. The Advisory Board will have an Executive Committee, that will meet regularly to review overall progress and to resolve coordination problems identified by the Executive Director. The members of the Executive Committee will also facilitate liason between the Executive Director and the institutions they represent and serve to expedite RTTS subprojects for which their institutions are responsible.

The individual subprojects will be implemented by participating rural development agencies (e.g., INIAP, INERHI, IERAC, BNF, MAG, the Catholic University of Guayaquil, etc.) under the overall guidance and coordination of the RTTS. The major portion of AID funding will be directed to these participating agencies through the financing of individual subprojects. Once each subproject has been identified, developed and approved, the participating rural development agency and the Title XII lead university, together with the RTTS, will mobilize all inputs required for carrying out the subproject. It is expected that each subproject will involve the participation of technical experts provided either directly by the lead university or through a sub-contractor arrangement.

The summary financial plan, distributed between support to the development of the RTTS and to representative subprojects is as follows:

Summary Financial Plan
(in \$US)

	<u>AID</u>	<u>GOE</u>	<u>TOTAL</u>
RTTS	1,000,000	750,000	1,750,000
<u>Subprojects (Illustrative)</u>			
1. Soils and Water Conservation Mgt.	617,000	1,335,000	1,952,000
2. Small Farmer Adaptive Research and Development	1,143,000	3,157,500	1,300,500
3. Catholic University of Guayaquil	447,000	588,000	1,035,000
4. 4-F Youth Clubs	342,000	907,000	1,249,000
5. Agricultural Policy and Statistics	492,000	500,000	992,000
6. Soybeans	581,000	580,000	1,161,000
7. Beans	135,000	135,000	270,000
8. Food Processing	157,000	147,500	304,500
9. Other Subprojects	<u>386,000</u>	<u>100,000</u>	<u>486,000</u>
TOTAL	5,300,000	8,200,000	13,500,000

The AID estimated distribution of the AID contribution is as follows:

<u>AID Project Funds</u> (S.U.S)			
	<u>RTTS</u>	<u>Subprojects</u>	<u>Total</u>
Technical Assistance	739,000	1,300,000	2,039,500
Training	25,000	1,598,300	1,623,300
Studies and Evaluation	50,000	147,100	197,100
Equipment and Vehicles	36,000	690,800	726,800
Local Travel and Miscellaneous	8,000	96,000	104,000
Inflation and Contingency	<u>142,000</u>	<u>467,300</u>	<u>609,300</u>
TOTAL	1,000,000	4,300,000	5,300,000

E. Issues

1. Selection of the RDS Organizational Structure for RTTS.

It is proposed that the RTTS be located as an organization within the Rural Development Secretariat (RDS) being established by the GOE. One of the principal tasks of the RDS is to coordinate and finance multisectoral integrated rural development (IRD) approaches and to strengthen the planning and execution of IRD projects. In effect, the RDS is to be a high level coordinating structure to improve GOE performance in reaching the rural poor.

The issue, then is whether RTTS might better function at the agricultural sectoral level such as the MAG, rather than the multidisciplinary level inherent in the RDS. A corollary issue is whether the RDS structure will cause the RTTS to be overly centralized and thus inhibit effective operation and interaction with participating rural development agencies.

As presently designed, the RTTS is a system that is essentially self-contained. It could operate within a number of different institutional structures. The key question is what institutional structure will maximize the RTTS ability to coordinate effectively with participating rural development agencies and attract the high level GOE attention and funding needed to fully institutionalize the proposed system. For the foreseeable future, this difficult task can only be accomplished at the highest levels within the GOE where the key decisions on the operations of the various participating agencies and budget allocations are made.

Not only will the RTTS benefit from enhanced coordinating ability, but the RDS will be able to draw on the RTTS as a resource to improve its IRD planning and execution. The learning processes initiated through RTTS subprojects will be more accessible to those involved in promoting the IRD approach if RTTS is located within the RDS.

Finally, the activities of the RTTS, although directed in part to increasing agricultural production and national output, must be focussed concomitantly on the broader causes of rural poverty. This need is recognized in the criteria developed for selection of RTTS subprojects. The multidisciplinary framework of the RDS, then, is more appropriate than a single sectoral approach. (See pag. 65 and 67 for further discussion).

2. AID versus Host Country Contracting

It is proposed that AID contract with the lead university. As explained in the Project Paper, the GOE legal requirements for contracting do not distinguish between technical assistance/applied research contracts with nonprofit institutions and technical service contracts with consulting firms. Consequently, a number of inappropriate provisions such as bonding, retention, and performance guarantees would be required if the GOE were to negotiate and execute this contract, given its anticipated magnitude. Lengthy GOE review and approval processes that could take years might also be required.

GOE officials will participate in the preparation of the terms of reference for the lead university contract, the selection process, and negotiations. However, USAID does not want the procedural difficulties of contracting to disrupt the process of initiating a productive, collaborative working relationship between the professionals of the RTTS, participating rural development agencies and the lead university. Yet, USAID is also concerned that GOE requirements eventually be modified and administrative skills developed to provide a capacity to deal directly with U.S. Land Grant universities by the time the Project is completed. Accordingly, during the course of Project implementation, the lead university will be responsible for working with the RTTS Executive Director in determining how best to go about modifying applicable GOE contracting regulations. This task is not simply a matter of drafting new regulations and changing legal requirements. It also involves a considerable amount of attitude changing at a variety of levels within a number of GOE institutions. USAID believes that many of these attitudinal changes will be strongly influenced by the quality of the staff and the work of the Title XII lead university. Also, during implementation USAID will review actions for procuring services as they arise to determine whether specific procurements or portions thereof should be handled directly by the RTTS in order to gain useful experience. Progress in developing an internal contracting capacity will be reviewed regularly as part of the evaluation process. (See pag. 76 and 77 for further discussion).

3. Status of the RDS

The RDS has not yet been established as a legalized, functioning entity, although GOE officials have repeatedly informed USAID that it will be created by an executive decree. Moreover, although it currently appears that the RDS will be attached to the Presidency, alternative locations in the Vice Presidency and CONADE are under active consideration. The issue, then,

is what are the implications for the feasibility of the Project, if the RDS is not established within a reasonable time?

First, the lack of progress in establishing the RDS does not reflect lack of GOE commitment to the RDS concept. A sensitive political confrontation between the Presidency and factions of the Ecuadorean Congress has prevented the completion of actions leading to the establishment of the RDS as well as initiation of other new development programs. A number of international agencies (FAO, IICA, IBRD) have all expressed strong interest in working through the RDS.

Second, USAID firmly believes that a condition precedent to disbursement in the Project Agreement requiring the establishment of the RDS will represent added incentive for quick resolution of the status of the RDS. A FAO technical assistance agreement for the RDS was structured in a similar way.

Finally, in the event that the RDS is not created, the RTTS can function under other organizational umbrellas as currently designed. In fact, USAID would seek GOE agreement to initiate RTTS operations under an alternative structure if the establishment of the RDS were delayed to the point that timely implementation of the Project became questionable.

A logical option would be to locate RTTS as a unit within CONADE, because of CONADE's continuing high level concern on rural poverty issues. Location of RTTS in MAG or even INIAP would be feasible although less desirable options since their principal emphasis is on agricultural production or research as contrasted with broader rural poverty issues. Nevertheless, the RTTS Project design assures that the social, economic, and cultural issues will be addressed in all subprojects regardless of where RTTS is housed.

Should the above options not prove viable, then USAID itself could play the role of the RTTS as has been done in the past and as continues to be done in many AID programs. The lead Title XII university could work directly with the participating rural development agencies (e.g., INIAP) in developing and implementing subprojects. USAID would serve the function of reviewing and approving individual subprojects. Indeed, completion of the individual subprojects by themselves would be an important achievement since most will either support or enhance the implementation of larger AID loan projects currently being developed or planned. While the institutionalization of a GOE technology transfer system would not be accomplished, important subproject objectives could be achieved. However, while feasible, this is obviously the least desirable of the above described implementation option.

USAID recognizes that in Ecuador the establishment of a self-sustaining RTTS will be difficult and a high risk undertaking. Success will depend heavily on the lead Title XII university. The Project could have been designed -- and it can still be implemented -- in a more traditional manner without the RTTS concept. However, if the objective of the Title XII legislation is to build long-term linkages between host country rural development institutions and U.S. Land Grant universities, then a type of mechanism like the RTTS will be necessary. Without an RTTS-type mechanism, linkages between U.S. and Ecuadorean institutions will continue to depend on the presence of a USAID Mission in Ecuador. USAID believes that little will be lost in attempting an RTTS mechanism and much can be gained. The successful creation and operations of RTTS in Ecuador can pioneer a possible model for Title XII operations in many other countries. (See page 66 for further discussion).

F. Project Development Committee

1. The Project Development Committee was headed by the following USAID/E officers, who were responsible for the drafting of the PP:

Dr. Vincent Cusumano, Rural Development Officer
Michael H. Hirsh, Capital Development Officer

2. The following GOE personnel served on the Committee or otherwise played important roles in the development of the Project:

Ing. Carlos Vallejo, CONADE	Dr. Raúl De la Torre, INIAP
Econ. Augusto Larrea, CONADE	Ing. César Maldonado, INIAP
Econ. Francisco Larrea, CONADE	Ing. Fernando Torres, INIAP
Ing. Arturo Orquera, INERHI	Ing. Jaime Borja, MAG
Econ. Gonzalo Guzmán, BNF	Ing. Jaime Herrera, MAG
Ing. Jorge Viteri, IERAC	
Lcdo. Ernesto Oviedo, IERAC	
Ing. Fabián Ron, IERAC	
Ing. R. Benítez, CONFCA (Conference of Technical Universities)	

3. The following individuals assisted in the design of the overall Project:

Dr. Glenn Taggart, BIFAD
Dr. J. Clark Ballard, Utah State University
Dr. Dean Bunch, Mississippi State University
Dr. Sam Portch, Consultant
Stan Devin, AID Regional Contract Officer

4. In addition, the following U.S. personnel assisted in the design of individual subprojects:

Dr. J. A. Davis, Mississippi State University
Dr. Ronald Brown, Mississippi State University
Dr. Rafael Samper, LAC/DR/RD

Sandra Rowland, Bureau of the Census
Dr. John Santas, INTSOY
Dr. Peter Gore, Cornell University
Dr. A.M. Pearson, Michigan State University
Dr. Barry Heyman, LAC/DR/EHR
Dr. James Hoxeng, DS/ED
Dr. Gordon Straub, LAC/DR/EHR

5. The Project was reviewed by the following officers:

John A. Sanbrailo, AID Representative, USAID/Ecuador
Angel M. Diaz, Deputy AID Representative, USAID/Ecuador
Patricio Maldonado, Program Officer, USAID/Ecuador
Steven Whitman, Regional Legal Advisor, USAID/Perú

G. Recommendation

The Project was designed by a team composed of professionals from GOE institutions, USAID, BIFAD, Title XII universities, and other sources. As part of the design process, the RTTS structure was worked out in detail, and eight individual subprojects were designed to the point where they could be implemented with only little more design work. The Project and the subprojects were reviewed by a USAID committee. Both the design team and the reviewing committee conclude that the Project and its components are technically, economically, socially, administratively, environmentally, and financially sound, and recommend that the Project be approved by AID/W and that an AID grant in the amount of \$ 5,300,000 be authorized.

I. BACKGROUND AND JUSTIFICATION

A. Problems and Constraints

Ecuador's rural poverty problems, including its agricultural stagnation, and the constraints impeding their resolution have all been detailed in a number of GOE, AID, and other donor documents. Ecuador's new Five Year Development Plan (1980-84), prepared by the National Development Council (CONADE), is based in part on a detailed GOE analysis entitled Rural Sector Analysis and Strategy Statement and on several diagnostic evaluations of the agricultural sector prepared with the assistance of IICA, FAO, and ECLA advisors. These GOE studies and the conclusions therein are further complemented by the World Bank's recent Country Study entitled Ecuador: Development Problems and Prospects and by an IDB Country Study, both of which contain extensive assessments of Ecuador's agricultural sector performance and institutional structure.

Among the AID documents discussing Ecuador's rural poverty and agricultural stagnation problems are the CDSS, the PID for this Project, the 1979 Title XII Baseline Study of Agricultural Research, Education, and Extension in Ecuador, and two USAID contracted special studies entitled Poverty in Ecuador (1979) and Income Distribution in Ecuador (1980). The following subsections are drawn from the above documents and provide the background and setting for the proposed Project.

1. Rural Poverty

All data collected on the Ecuadorean rural population show a great disparity between it and the urban population, and show extremely low levels of income and well-being. For example, median rural income is estimated at less than 30% of median urban income. Access to health services is limited, with a large majority of rural people not having reasonable access to any modern health care at all. Of every 1,000 students who enter the first grade in rural public schools, only 272 complete the sixth, versus 611 for urban areas. The percent of adult illiteracy is some four times higher in rural than in urban areas. The average rural dwelling does not have electricity, potable water, or sanitary facilities of any type.

Of the estimated 360,000 rural household, approximately 75% own land or work land under some sort of permanent arrangement. Approximately 28% of these "landed" families have less than one hectare, and 39% have one to five hectares. These two categories amount to 67% of the farm units, but control less than 7% of all agricultural land. Farms over 50 hectares control some 66% of the land although accounting for only 6.5% of the farm units. Located primarily on marginal lands where soils are more fragile and less productive, most of these small farmers find that they are not able to provide for their basic needs from agriculture alone. Almost all must supplement their agricultural incomes with off-farm employment, either within or outside agriculture.

Agricultural production by these minifundistas is carried out by utilizing the technology of their ancestors. Few have access to and understanding of how to utilize improved seeds, fertilizers, and pesticides;

and most could not afford to buy them. Practices recommended by GOE institutions usually are not appropriate for the economic and ecological conditions of small farmers. Access to agricultural credit, farm-to-market roads, irrigation, storage facilities, and other complementary infrastructure is limited; as a consequence, the ability of these small farmers to increase their productivity, incomes, and quality of life is restricted. Furthermore, because of cultural, language, and organizational barriers, the rural poor are often alienated from the larger society, which makes working with them in finding solutions to their problems difficult. They have lived with low quality land, droughts, erosion, disease, and lack of public services for such a long time that the word "problem", which indicates a possible solution, has little meaning for them.

These problems of the small marginal farmer, the agricultural day laborer, and the rural poor in general are, therefore, interrelated, complex, and not limited to an agricultural solution alone. Breaking the cycle of rural poverty and improving the socio-economic welfare of the rural poor has proven to be extremely difficult with single faceted interventions.

2. Agricultural Stagnation

As indicated above, agriculture is just one of the several economic activities of the rural poor; however, it is the primary one of the large majority of the rural population. The general conditions of this sector have important consequences for all rural dwellers, and provide a major explanation for the rural poverty problem.

Ecuador's agricultural sector continues in a prolonged period of stagnation. Agriculture's share of gross domestic production (GDP) has rapidly declined. More alarming, however, is the inability of the sector to keep pace with increases in consumer demand for food. Since 1963, per capita food production has actually declined. Demand for food, on the other hand has been strong, largely because of increases in urban incomes. This has resulted in increased food imports, in subsidies, in food prices (which are now in the vanguard of a potentially dangerous price spiral of about 15% annually), and in the need to direct foreign exchange from vitally important capital formation to meeting the basic food requirements of the Ecuadorean population.

Agricultural deficits not only affect food prices and rural incomes, but also the economic and physical well-being of all Ecuadoreans, especially the poor, urban as well as rural. The National Institute of Nutrition has found that great nutritional deficiencies are present in Ecuador, particularly in those strata of society which must spend 60-80% of their total incomes on food. More specifically, it is estimated that some 40% of the children under 5 years of age require nutritional attention, and that the average Ecuadorean diet is deficient in protein and in calories.

The country's ability to earn needed foreign exchange from its agricultural commodities has also deteriorated during the last few years. In the period 1965-71, cacao, bananas, coffee, and sugar accounted for over 90% of Ecuador's total exports. This decreased to 37.9% in 1976, rebounding somewhat to 56.4% in 1978. Although the decline is partly due to the petroleum boom, it must be emphasized that Ecuador today is exporting fewer

agricultural products by volume than before the boom. Utilizing 1972 as the base year, just before the petroleum boom began, the volume index of primary agricultural exports has decreased almost 18%.

An important consequence of the generally deteriorating state of agriculture is the extreme underemployment that exists in rural Ecuador. It is estimated that agricultural production could be maintained at its present levels using current technologies with only 50% of the economically active rural population. Redundancy in the rural labor force has depressed rural incomes, increased rural to urban migration, and in general increased the socio-economic dualism that exists between rural and urban areas.

The agricultural sector must be revitalized if the newly elected Ecuadorean Government is to realize its goals of greater participation of the poor in the benefits of the country's growth, of maintaining an adequate growth rate during the 1980's as petroleum exports decline, and of providing for the basic needs of Ecuador's populace.

3. The Reasons and the Constraints

There are several interrelated reasons that explain Ecuador's stagnant agricultural production and widespread rural poverty. Two constraints - weak institutions and inadequate technologies - particularly hinder the GOE in dealing with these problems. By improving its institutional and technological bases, Ecuador would have the capacity for addressing many of the factors now causing its agricultural stagnation and rural poverty.

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 import-substitution and cheap food policies found in many Latin American countries that favor the urban-industrial sector. A second reason is the heavy concentration and inefficient use of land and the lack of an effective land reform system. Most of the best lands, held in large units, are underutilized, while the sloping marginal lands are generally used by small farmers to produce the country's food crops. Yet some 50% of the country's basic food crops are produced on farms with 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 GOE institutional system to deliver such resources to small farmers and the rural poor in a coordinated, continuing, and timely basis. And a fourth reason is a complex and seemingly inefficient marketing system which makes it difficult for small farmers to receive an equitable share of the retail or export price for most crops.

While "political will" to confront these complex problems is necessary, it is not sufficient. Strong, concerned, and efficient public sector institutions are needed to translate "political will" into specific action programs. But in Ecuador the public sector has not been particularly effective in dealing with these fundamental problems because of: (a) a series of planning, management, and human resource weaknesses within the institutions expected to deal with these problems; and (b) a lack of

technologies and knowledge of appropriate approaches to be used for analyzing and addressing the problems within the Ecuadorean context. Each of these is discussed separately as follows:

a. Institutional Constraint

There are several weaknesses which hinder rural development. institutions from effectively serving the sector. These include (1) dispersion of functions with little coordination; (2) institutional orientations which tend to favor large farmers; (3) a weak human resource base; (4) ineffective management and delivery systems, and (5) lack of adequate statistics and analyses for planning purposes.

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, ten zonal 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). Then, there are 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), CPM (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 are 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 to the rural poor. As an example, all of the zonal offices of MAG, all of the regional authorities, the 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 rural poor and the agricultural sector in general.

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 the small farmer, who nonetheless produces 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 attend only the larger farmers in their areas, who because of education, language, and customs are "easier" to serve. And INIAP's research program is heavily concentrated in the crops and varieties characteristic of large farmers.

The third area of weakness, the human resource base, is notably deficient. As discussed in the 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. And even the mix of professionals is inadequate to deal with the problems of the sector. For example, only 5.6% of MAG's professionals are social scientists, only 6% 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.

Fourth, the rural sector institutions are marked by inefficient management and delivery systems. 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 (both financial and in other related aspects) for personnel to work in field level positions. The agents themselves usually operate with little guidance and 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 (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 utilization; overall food security concerns; land tenure and colonization; and agricultural credit and capital 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 interrelationships with the rest of the economy.

Policy implementation through public sector resource allocation reflecting appropriate priorities and formulation of program strategies 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 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 concentrate on a few selected commodities. There has been inadequate research on specific small farmer problems, failure to disseminate research results, and 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 not to new agricultural innovations but to favorable market conditions which made modern input use particularly profitable. Almost all crops produced for domestic consumption by the small farmer have experienced declines in both absolute production and yields. During the time period 1970-1976, soft corn production declined by 11.4%, potatoes by 2.2%, beans by 3.4%, barley by 20.5%, wheat by 2.4%, and peas by 4.8%. Since 1976, this situation has deteriorated further for every food crop because of drought conditions. Yields for such commodities as potatoes and soft corn are only 35% and 16% respectively of those 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 7 qq/ha., about 60% of Colombia's level and less than half of El Salvador's. In the case of cacao, fungus 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 in small farmer production systems, for both basic food and export crops.

B. Responses to the Problems and Constraints

The GOE recognizes the sectoral problems and constraints discussed above and has formulated a rural development strategy to address them. Other donors also appear to recognize the same constraints, although their responses to date do not address adequately the most critical institutional, technological, and human resource aspects of them. AID, in conjunction with the GOE, has developed the initial steps of a program designed to assist in addressing the constraints; the proposed Project is an essential element of this program.

1. GOE Rural Development Strategy

The GOE has recently formulated a Five Year Plan which gives high priority to rural development. The plan proposes three major actions for attacking the problems. The first is to place emphasis on increasing agricultural production by expanding resource flows to the sector and addressing more effectively the technological, institutional, marketing, credit, and infrastructure bottlenecks. The second is to develop new mechanisms for delivering resources and services to the rural poor in a more coherent and concentrated manner. The third is to initiate a decentralization program aimed at developing secondary cities into improved rural growth and service centers.

The GOE's strategy considers that building a strong rural development institutional base is a prerequisite for addressing the multidimensional problems of agriculture and the rural poor. Priority is being placed on the improvement of human resources, on campesino organization, and on development of rural technologies appropriate for solving critical agricultural problems. There is a recognition of the interdependence that exists among agriculture, the rural poverty problem, settlement patterns, and the rest of the economy. The GOE realizes that the management of rural development is complex and requires both training of personnel who understand these complexities and establishment of technology transfer and information systems.

As part of its Plan, the GOE is in the process of establishing a Rural Development Secretariat (RDS), to be responsible for overall program planning and for coordinating and facilitating rural development activities. It is expected that the RDS will be part of the Presidency, although there is a possibility it may be established within the National Development Council (CONADE). Either would give it access to decision makers at the highest levels as well as enable it to influence the program activities of the specific public sector institutions (which will continue to implement the various activities).

In addition to its planning and coordination roles, the RDS will administer at least two funds geared to providing the financial resources needed by the GOE to carry out its rural development strategy. The funds will pool resources from various national and international sources.

One of these funds, a Rural Technology Transfer System Fund, is an output expected from the Project proposed herein; establishment of an Integrated Rural Development Fund is expected from a complementary AID project. The RDS is also expected to play a major role in the establishment and possibly in the running of a new interinstitutional rural training system geared to increasing participation of the rural poor, promoting campesino organization, training small farmers, paraprofessional leaders, and extension agents, and providing a means to disseminate appropriate technologies to the rural sector.

At the field level, the methodology of integrated rural development (IRD) will be the fundamental mechanism for reaching the poor and for assisting the revitalization of agriculture. An IRD mechanism extending from the rural poor to national level institutions and funding sources is being developed. The IRD methodology will permit the GOE to identify problems facing specific geographic regions of Ecuador and to develop appropriate sets of project interventions. In the case of small farmer areas, activities are expected to focus on community organizational development and farmer participation, appropriate agricultural and nonagricultural technology transfers, improvements in the natural resource base (reforestation and soil conservation measures), and making available credit, other inputs, infrastructure training, and marketing services. Complementary interventions in health, nutrition, housing, education, off-farm employment opportunities, and energy will be provided as appropriate. Obviously, strong institutional, human resource, and technological bases are needed if the IRD approach is to be successful. The IRD mechanism is detailed in the Integrated Rural Development (Agriculture) Project Paper.

2. Other Donor Activities

The major donors to Ecuador in rural development are four multilateral institutions: The World Bank (IBRD), the Inter-American Development Bank (IDB), the United Nations, and the Inter American Institute for Agricultural Sciences (IICA).

Until 1976, IBRD's approach to lending in the sector was to identify critical development constraints and finance subsectoral programs designed to address the specific problem areas. IBRD financed projects in livestock improvement, agroindustry, seed processing, irrigation, agricultural credit, and other specific subsectors. However, in evaluating these projects, IBRD determined that subsectoral programs were not cost-effective and often did not reach the intended beneficiaries. Several bottlenecks were also identified, particularly the lack of institutional linkages between the central agencies' administrative units responsible for planning and allocating funds and the entities responsible for project execution. It was determined that projects could best achieve their intended purposes by concentrating on re-

gional problems. Thus, in 1976 IBRD decided to focus on implementing area development projects. The recently signed integrated rural development project in Tungurahua Province is the first example of this new strategy. IBRD is now considering integrated rural development projects in several other geographic areas.

IDB has had a similar history in the sector. Until 1977, IDB's lending portfolio included projects in irrigation, credit, animal health, fisheries development, and research support facilities. Since the GOE lacked a coherent agricultural and rural development strategy and had major institutional weaknesses, IDB followed a lending strategy which favored institutional pockets of stability. More recently, IDB has determined that the cornerstone of its lending activities is to be area development projects, focus on and addressing critical problems of particular regions. IDB has either begun implementing or is in the process of negotiating integrated rural development projects with PREDESUR, CREA, and CEDEGE. The regional authorities are expected to arrange with the various ministries and other public and private institutions to provide complementary services for the projects.

The United Nations Development Program (UNDP), in conjunction with the United Nations Food and Agriculture Organization (FAO), is also supporting the concept of integrated rural development. Its \$ 2.0 million project in the provinces of Imbabura and Carchi involves essentially institutional support to the MAG zonal office to improve its capacity to plan, coordinate, and undertake area development projects.

The same pattern is apparent in IICA's program effort. Several integrated agricultural development projects (PIDAs) are being supported by IICA. According to IICA, the rationale for this assistance is to test a local level institutional mechanism for conducting integrated rural development projects that can later be replicated. IICA's assistance is exclusively technical assistance and training.

In addition to the multilateral donors, several countries also offer assistance to the GOE in agriculture and rural development. France, Germany, England, Spain, Nationalist China, Czechoslovakia, and Switzerland provide modest amounts of technical assistance for agricultural activities ranging from agricultural regional planning (the French) to cheese-making (the Swiss). Much of this assistance has been of value to the GOE; but without any type of coordination, this assistance has been basically "catch-as-catch-can" and has left a number of development voids.

In summary, the donor agencies, particularly the multilateral donors, appear to recognize the importance of integrated rural development and the need to improve GOE institutional and technological capacities. In the absence of any overall GOE coordinating body that could establish priorities for the provision of rural and agricultural technical assistance, each donor has tended to provide resources on a "target of opportunities" basis, which has left a number of gaps. Although each of the approaches they have taken may be rationalized on a project by project basis, together they tend to accentuate the institutional proliferation and do little to address the need

for one strong rural development coordinating and funding mechanism.

The Project proposed herein will support a GOE initiative to create a mechanism that can ultimately rationalize the provision of all external technical assistance to the rural sector. The Project will thereby fill a major void not included in the programs of the other donors.

3. USAID Strategy and Program

Based on extensive discussions with the GOE, USAID's rural development strategy will have two main focuses. The first is to help the GOE strengthen its institutional and technological bases so it will be better able to confront the major problems of the sector. The second is to assist the GOE in making operational its IRD mechanism. In addition, USAID expects to support the GOE's decentralization efforts by directing housing guaranties and other resources toward secondary cities.

The Project proposed herein will support the first part of the AID strategy. Individual subprojects will assist in strengthening institutions to deal with the problems of agriculture and rural poverty more effectively. Overall support will be given so as to institutionalize a mechanism within the GOE so its component institutions readily can obtain needed technical assistance for future subprojects, even beyond the end of the AID-supported Project. The Project will be complemented by training in management and project planning for mid-level personnel in MAG and other institutions through AID's Training in Development Project, No. 518-0017.

To carry out the second part of the strategy, AID will help finance IRD projects using time-phased interventions starting with agriculture and moving into potable water, health, and other sectors. The selected interventions will be determined from area-specific diagnostic analyses. An essential element of this part of the strategy is to institutionalize within the GOE a better way to plan, finance, and implement IRD activities, so that the AID supported activities can be replicated subsequently in other areas of the country.

II. DETAILED DESCRIPTION

A. Logical Framework Description

1. Goal of Project, and Relationship to USAID Strategy

USAID's sector goal is to increase food production, employment, and incomes, and otherwise improve the well-being of the rural poor. The proposed Project will contribute to the goal by assisting agricultural/rural development research, extension, and technical training appropriate for increasing food production and for improving the economic welfare of small farmers, and in the process making essential improvement in the institutional base. Through the active involvement of Ecuador's small farmers in contributing to the country's agricultural production, the Project also will assist the urban poor by helping to alleviate food shortages.

2. Purposes, End of Project Indicators, and Assumptions

The Project will finance a series of subprojects designed to address the constraints to institutional improvement and technology generation and dissemination. Through the planning and execution of these subprojects, the Project will assist the GOE establish a Rural Technology Transfer System (RTTS) so that it can effectively deal further with these as well as with other constraints.

The Project therefore has three basic purposes. The first is to strengthen rural institutions so that they are able to serve the sector effectively; strengthening includes forming linkages among research, extension and educational institutions, developing a trained human resource base, and improving management, delivery systems, and analytic and statistical capacities. The rural poor have probably suffered most from Ecuador's institutional weaknesses and poorly trained public sector personnel. Institutional strengthening should significantly increase the country's absorptive capacity for use of both improved technologies and expanded resource flows.

The second purpose is to 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. Given existing conditions of land, substantial increases in productivity and farm income can occur by changing management practices, varieties, and cropping patterns and by adding vegetable gardens, small animals, and other activities at the farm level. Some of these technologies are known and only require proper dissemination, others must be adapted and packaged to Ecuadorean conditions, and others require research before they will be ready for dissemination.

The third purpose is to promote and support the establishment of the RTTS - a management, administrative, and financial system which can address problems related to the institutional, technological, and other constraints of the sector on a continuing basis. By the end of the Project, it is expected that the RTTS will be fully established and capable to continuously evaluating the rural sector's need for foreign technical expertise and helping it obtain such expertise. Specifically, the RTTS is expected to be capable of:

a) identifying problems and determining rural development priorities in the areas of research, diffusion of appropriate technologies, institutional strengthening, and human resource training;

b) identifying appropriate sources of technical expertise in the U.S. and other LAC countries and channeling this expertise to Ecuadorean rural development institutions;

c) identifying, mobilizing, and financing (through an RTTS Fund) sources of short and long-term technical training, both within the country and outside, required for rural development institutions; and

d) coordinating and providing top-level support for institutional strengthening and long-term and short-term research activities aimed at finding solutions to priority agricultural/rural development bottlenecks.

In addition to the establishment of a functioning rural technology transfer mechanism, by the end of the Project the following are expected to have occurred:

a) the carrying out of approximately eight subprojects, each designed to (i) address one or more identified institutional or technological constraints, (ii) necessitate two or more rural development institutions working together, and (iii) provide linkages among the research, extension, and education functions; and

b) the formation of strong linkages between U.S. Land Grant universities and Ecuadorean institutions for provision of a majority of the external TA and training services required for the RTTS and its subprojects.

For the Project to achieve its purposes, several factors are necessary. The principal ones are (a) the continuation of the GOE commitment to eliminate rural poverty and to increase agricultural production, (b) a political environment conducive to rural development projects of this nature, (c) the continuation of the GOE commitment to strengthen the various rural development institutions, (d) the making available by the GOE from 1980 through 1985 of sufficient resources to support the Project and to continue the Rural Technology Transfer System after the end of the Project, and (e) achievement of coordination among the various rural sector institutions. It is USAID's judgement that the GOE has the commitment, resources, and sufficient stability to assure the above. In addition, a carefully designed system will be established under the Project to assure, to the degree possible, that adequate coordination and resource channeling do occur.

In order to accomplish the Project purpose, two essential elements will be developed during Project implementation. These are (a) a Rural Technology Transfer System (RTTS), designed to institutionalize the transfer of agricultural technology from sources outside/inside Ecuador to the agricultural sector, and in particular to the small farmer subsector, and (b) a series of subprojects, planned and managed by the RTTS, designed to strengthen the institutional linkages between agencies involved in agricultural extension, research, and education, and to develop and disseminate technologies which will enhance agricultural development and rural welfare. These Project elements are described in detail in the two following sections.

B. Description of the Rural Technology Transfer System (RTTS)

1. Rationale and Purpose

As indicated in Part I, the existing institutions in the agricultural public sector have not been able to deliver the necessary services and inputs to the agricultural sector in general and to small farmers in particular. As part of this institutional weakness are the lack of appropriate technologies for improving productivity and income of rural inhabitants, lack of coordination and diffusion of responsibilities among those institutions responsible for the delivery of services, and an inadequate human resource base, both in terms of ability to understand the complexity of rural development and in terms of ability to organize and operate effective programs. An example of this institutional weakness is the almost complete lack of an organized way in Ecuador for identifying problems in the sector, developing appropriate solutions, locating the needed technical and financial assistance, and directing the necessary assistance to the problem areas in the most efficient way. In other words, a system for the orderly and timely transfer of agricultural know-how to priority problems does not exist.

A number of alternative approaches to overcoming the institutional constraints were considered. The option of housing within USAID a Title XII technical assistance arm was rejected since it would have minimal local institution building impact. Decisions would tend to be made largely by interaction between the lead university and USAID with GOE involvement scattered among a number of entities. A remoteness to the GOE's issue and problems would be the likely result. Consequently, there would be little prospect of impacting on a GOE centralized capability for continuing useful contacts with the land grant university suppliers of technology once the AID assistance terminated.

The location of a Title XII program directly with INIAP was considered. With an applied research agenda being the driving force, INIAP could be expected to reach out and involve the principal institutional actors in collaborative rural development endeavors. Certainly INIAP is the single GOE entity best qualified to relate to the U.S. land grant university system. Two concerns resulted in discarding this option, however. First, the additional responsibilities and the time-consuming task of establishing coordinating mechanisms with other institutions might seriously dilute INIAP's ability to direct its own research activities. Second, INIAP's probable tendency would be to favor its own research agenda over the more immediate problem solving activities. With INIAP in control of the resources, the collaboration of other key institutions in the agricultural sector would likely wane.

The option of locating the RTTS within MAG was reviewed. MAG certainly offers the institutional umbrella to facilitate coordination with a number of the public entities that work in the rural sector. However, certain key sectors--health, education, and nutrition-- remain independent of

MAG. Under the new development plan, moreover, MAG is slated to remain principally a production oriented institution. Rural poverty issues broader than agriculture production are to be part of the mandate of the RDS.

Consequently, it became obvious that the RTTS should be located in the RDS. Successful establishment of a lasting RTTS is dependent on its ability to coordinate its subprojects effectively and to integrate with the GOE's overall planning, priority setting and financing process. The location of the RTTS at the level of decision-making of the RDS offers this essential integration and facilitates the development and coordination of an appropriate mix of subprojects which are in consonance with the overall goals of rural development in Ecuador. It also provides the RDS with direct access to know-how and skills in problem solving applied research that will enhance its strategy formulation and program design capability.

2. Structure and Operating Features of the Rural Technology Transfer System (RTTS)

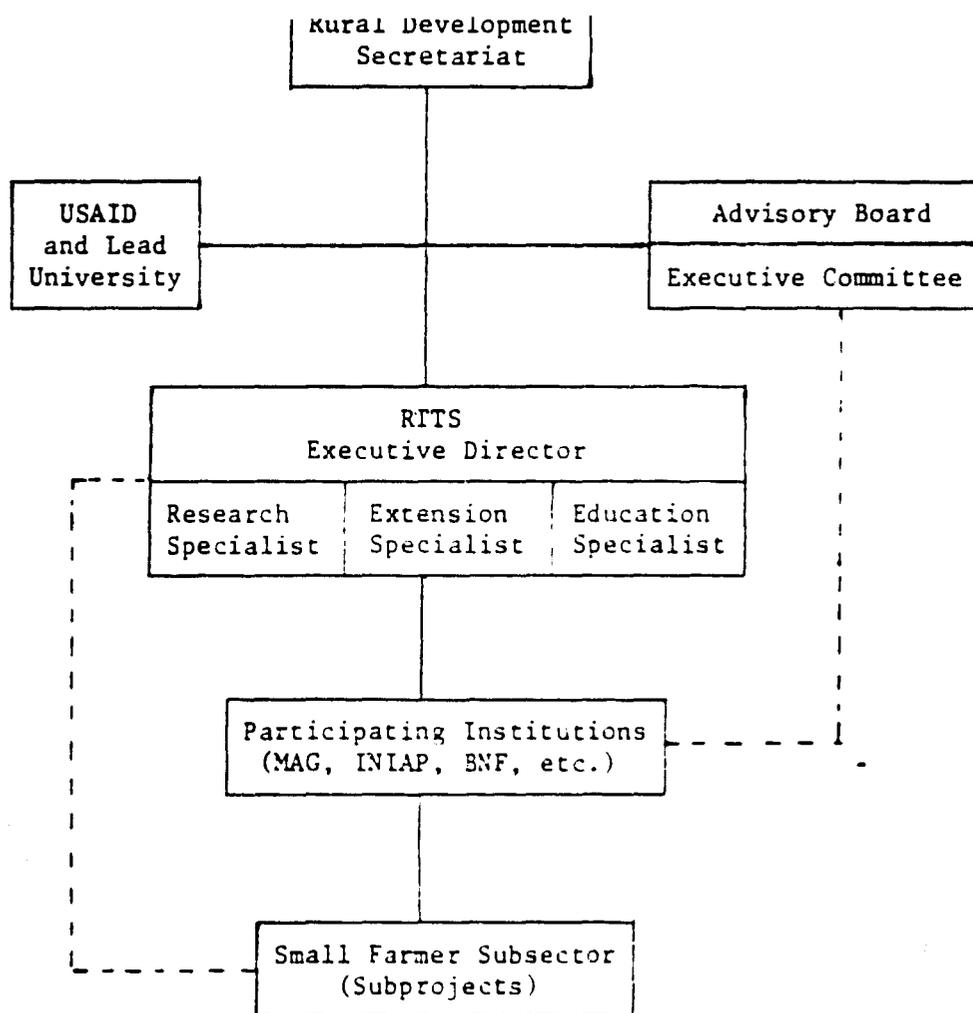
As shown in Chart 1, the RTTS will be guided by an Advisory Board composed of representatives from various GOE agencies. Since the subprojects to be implemented will deal with a wide array of problems of rural Ecuador, representatives from a number of disparate GOE institutions will be invited to participate on the Advisory Board, including the RDS, CONADE, MAG, BNF, INIAP, INERHI, IERAC, ENAC, the Ministry of Health, the Ministry of Education, the Ministry of Public Works, the Ministry of Social Welfare, the National Statistics and Census Institute (INEC), and the Central Bank. The Board will meet about twice a year to review subproject proposals, select on the basis of criteria those subprojects which will be funded during the year, review progress, and advise on appropriate actions. It will name an Executive Committee to serve as its working body.

The Executive Committee will consist of representatives from those agencies most responsible for subproject implementation and will advise the Executive Director on appropriate actions to be taken during Project and subproject execution. The Executive Committee will take part in the annual Project review and will submit an annual report to the Advisory Board. This Committee will meet on an as needed basis, but at least every three months so as to keep up to date on subproject progress. It will have responsibility for overseeing the RTTS Fund.

Directly responsible for assisting the implementing agencies develop, implement, and evaluate subprojects will be the RTTS Executive Director and a staff of three project specialists. The Executive Director will be an Ecuadorean with administrative experience in one or more of the agricultural functional categories of extension, research, or education. These will be one project specialist in each of the three functional categories. The primary responsibility of the specialists will be to assist implementing agencies develop, implement, and evaluate subprojects. These specialists will be Ecuadoreans with experience in managing agricultural/rural development projects. Since a central theme of the subprojects to be implemented will be the strengthening of the rural research, extension and education functions among the institutions in the three functional

Chart 1

Organizational Structure of RTTS



categories, it is expected that the Executive Director will coordinate subproject development and implementation among the staff specialists rather than having the specialist of one category be exclusively in charge of a subproject.

The key implementation component of the RTTS is the participating agencies (e.g., MAG, BNF, INIAP, INERHI, IERAC). These agencies, working under the overall guidance of the RTTS Executive Staff, will be responsible for actual subproject implementation. Each subproject will have a lead Ecuadorean institution, which will be responsible for preparation and execution of that subproject. The lead institution will then arrange through written agreements for the coordination of its activities with other participating agencies, with the assistance of the Executive Staff. An important part of the lead institution's function will be providing feedback on subproject progress to the RTTS Executive Staff. In order for a subproject to be approved, the lead institution for that subproject must present it to the RTTS Advisory Board (through the Executive Director and the Executive Committee) in enough detail to permit the Board to make a decision concerning technical and socio-economic feasibility. Each subproject proposal must contain the following elements:

- a. Background and justification;
- b. Detailed subproject description, including a narrative summary of the goal, purpose, outputs, inputs, end of subproject status, and verifiable indicators;
- c. Economic and social benefits, and analysis of social viability;
- d. Implementation plan and roles of all participating agencies;
- e. Financial plan; and
- f. Evaluation plan.

It will be the responsibility of the RTTS Executive Director to make sure that each subproject is adequately planned, before sending it to the Executive Committee and then the Advisory Board for their review and approval. With USAID having final approval responsibility of subprojects, there will be a check to make sure that all subprojects are technically, administratively, socially, environmentally and economically sound, as well as cost-effective.

3. Subproject Selection Criteria

The RTTS Executive Director and the Executive Committee will have the responsibility of making sure all subprojects are technically, economically, financially, administratively, environmentally, and socially sound, and fit into the priorities of the GOE, before recommending them to the Advisory Board. To assist in making these determinations a series of selection criteria have been prepared. The criteria are divided into two groups. The first are criteria which all subprojects must meet before they are sent to the Advisory Board. The second are criteria which on a numerical basis will be applied by the RTTS Executive Committee to help it determine which subprojects should have preference over others.

A number of proposed subprojects were measured against the first set of criteria and were judged to be sound and appropriate for RTTS financing. These subprojects were also measured against the second set of criteria. This exercise helped determine which of the subproject ideas presented by GOE institutions were to be continued into the design stage and incorporated in this Project Paper. It also resulted in a priority ranking of subprojects, discussed further in Section C. below.

The criteria which all subprojects must meet are:

a) The subproject should have the potential for generating measurable improvements in two or more of the following:

- 1) agricultural productivity and/or family income;
- 2) general health and/or nutritional level of the proposed target group;
- 3) accessibility of credit and/or other inputs and services for small farmers;
- 4) quantity and quality of agricultural commodities reaching local and/or export markets; or
- 5) conservation and improvement in the utilization of natural resources.

b) The subproject should strengthen the rural sector research, extension, and education institutions and promote an integration of their efforts. Specifically, it should accomplish at least two of the following in measurable terms:

- 1) Increase the efficiency and effectiveness of cooperation and coordination among rural sector institutions involved in research, extension and education;
- 2) Develop the technical skill of the personnel of such institutions;
- 3) Improve the social awareness skills of such personnel and/or their ability to speak indigenous language;
- 4) Strengthen the administrative capacity of the institutions' administrative personnel;
- 5) Improve the curriculum of educational institutions;
- 6) Strengthen research so it better relates to identified and pressing problems of the sector; or
- 7) Improve the effectiveness of extension delivery systems.

c) The subproject should simultaneously have an institution building impact and have a positive impact on the lives of the rural poor. In other words, the subproject should encourage rural sector institutions to focus their efforts more directly, effectively, and efficiently on the rural poor.

d) The subproject must be technically feasible. Technical feasibility will be determined from the following considerations, among others:

- 1) political and legal constraints that could influence subproject implementation;
- 2) magnitude of proposed subproject as it relates to availability of USAID and GOE funding and alternative opportunities;
- 3) availability of required human resources in terms of quantity and qualifications needed for subproject execution;
- 4) availability of supplies, equipment, and basic physical facilities for subproject execution;
- 5) feasibility of interaction and coordination required among GOE institutions; and
- 6) availability of needed technical assistance from US and other sources.

e) The subproject should leave behind upon the termination of AID assistance, a local capacity to deal with rural poverty problems on a sustained basis.

f) The subproject, if on a pilot or limited scale basis, should have the potential for systematic expansion.

g) The subproject should address rural poverty and/or agricultural problems or facets of problems currently not being adequately covered by other Ecuadorean institutions, and for which adequate assistance from other external sources is not available.

h) The subproject should have a net positive impact on the environment, and no adverse impacts which might cause lasting environmental harm.

i) The subproject should be designed so that all actions and impacts be appropriate to the cultures, traditions, and ways of life of the beneficiaries, and that no adverse social effects will occur as a result of the subproject.

j) The subproject must have administrative arrangements which are workable within the Ecuadorean context.

It is anticipated that at any one time there normally will be more subproject ideas than resources for carrying them out. To prioritize among eligible subprojects the criteria listed below will be used. The subproject that meets the most of these criteria will be awarded the highest priority with the other subprojects ranked according to how many of the individual criteria they fulfill, e.g., one point for each of the following:

- a) The subproject should give priority consideration to satisfying critical basic human needs and improving the standard of living in geographical areas with large concentrations of rural poor, particularly those with traditionally disadvantaged groups (e.g., Indians, blacks).
- b) The subproject should help improve the socio-economic upward mobility of rural women and rural youth. When feasible, the subproject should utilize organized group interventions for these two segments of the rural population.
- c) The subproject should work with and/or otherwise support small farmer organizations.
- d) The subproject should lead to conservation of and/or improvement in the utilization of natural resources.
- e) The subproject should provide for the continuation of mutually beneficial linkages between local and external (i.e., Title XII university) institutions subsequent to the termination of formal contracts.
- f) The subproject should be in an area where future AID or other donor assistance is contemplated and should support the development of those activities.

4. The Role of the Title XII Lead Institution

Effective implementation of the Project depends in large part on a strong Title XII leadership role. After considering several options (e.g., Title XII officer, university consortium, lead Title XII university), it was decided that the Project needs could best be met by utilizing a lead Title XII university.

Simply stated, the lead university will have the responsibility for assisting the Project achieve its RTTS institutional development objectives. This will require that the lead university maintain an in-country presence throughout most of the life of the Project to help refine the RTTS based on operating experience and to monitor constantly the progress made toward achieving the Project's institutional development purpose. In addition to its institutional development responsibility, the lead university will advise the Executive Director and other levels of the RTTS on the most cost-effective use of Project funds to carry out specific subprojects. When the activities of a specific subproject are in the expertise domain of the lead Title XII university, it is expected that the lead university will execute those activities. This will be done by writing the lead university contract in such a way that task orders can be written (similar to IQC contractual arrangements) once subproject needs have been identified. When

the lead university does not have the institutional capacity to carry out certain subproject needs, the contract will be written requiring the lead university to subcontract with other institutions or individuals.

In short, the lead university is expected to be virtually the sole contractor under the Project (see Section IV) and will provide or cause to be provided all TA and training, both to the RTTS and to the individual subprojects. At the same time the lead university will be expected to (1) consult with the various GOE rural sector institutions to assure that each proposed subproject activity responds to a priority need and will contribute to building the RTTS, (2) advise the RTTS on the scopes of work of the various subproject tasks to assure that they meet professional standards, (3) assist the RTTS in monitoring progress during subproject implementation, and (4) work with GOE institutions to assure that the results of the subprojects are disseminated. The Title XII lead university will work closely with the Advisory Board and the Executive Committee. It will also interact on a daily basis with the RTTS Executive Staff, and on an as needed basis with the implementing agencies. In summary, USAID believes that an important and most desirable part of the Project's institutional development process will be the opportunity for a close working relationship between GOE institutions (particularly the RTTS) and a professional team from a U.S. Land Grant university. This will help Ecuador in learning how to deal with overseas institutions for the provision of agricultural/ rural technologies.

5. Technical and Other Assistance to the RTTS

In order to institutionalize the RTTS within the GOE and have a workable technology transfer mechanism by the end of Project, considerable TA (and some other inputs) will be required. The basic categories of needed assistance are: (a) long-term technical advisory services; (b) short-term technical advisory services; (c) training of RTTS personnel; (d) studies and evaluations; and (e) equipment, vehicles, and certain contractor support costs.

The long-term advisory services will consist of two long-term advisors. The first will be a top-level person with an advanced degree in one of the agricultural sciences, with familiarity with the U.S. Land Grant System, and with experience in managing overseas development projects. As with all advisors under the Project, an absolute prerequisite is that this advisor be fluent (at least S-3/R-3) in Spanish. This advisor will be chief-of-party for the lead university and will have a major management role in the Project. He/she will serve as counterpart to the RTTS Executive Director and will be expected to establish close contacts with the directors and division chiefs of all participating institutions. He/she will be in charge of the basic operation of the Project, including arranging for training and short-term TA so as to make the RTTS functional, helping the RTTS define and analyze problem areas of agriculture and rural development in Ecuador, advising the RTTS Executive Director and Executive Committee on appropriateness of individual subprojects, serving on the Advisory Board, arranging for and coordinating all TA and training to be given under the subprojects, advising the RTTS Executive Director on appropriate adminis-

trative and management mechanisms for the RTTS, reporting all problems to USAID, and planning and participating actively in Project evaluations. This individual will be in country for four years. At the end of that time the RTTS should be functioning efficiently, and only short-term follow-on visits should be necessary.

The second long-term advisor will be a project specialist, with and advanced degree and overseas experience in one of the three agricultural functional categories, preferably in extension. This individual will work closely with the staff of the Executive Director and with the working levels of participating institutions on all aspects of subproject design, implementation, and evaluation. He/she will specifically work toward the establishment of firm linkages between the RTTS and the institutions involved in rural sector research, extension or education, and among such institutions. The advisor will be in country for three years, during the most intensive period of subproject design and implementation work.

Short-term TA will be limited, since almost all of the subproject design work will be done by Ecuadorean personnel, with the advice and assistance of the long-term Project Specialist. Also, most short-term TA under the Project is expected to be within the various subprojects, since further studies and analysis of individual problem areas will be legitimate and expected areas of involvement of the subprojects. However, nine months of short-term TA is being budgeted to give the RTTS flexibility to bring in needed expertise should some aspect of subproject design need foreign advisory services before a subproject gets underway or should some specialized foreign TA be necessary for the institutionalization of the RTTS. Three more months of short-term TA are being budgeted to permit follow-on TA after the departure of the long-term advisors, particularly for participation in the final evaluation.

Training for RTTS personnel is expected to be of two types. First will be attendance at short courses and seminars, both in the U.S. and in third countries. (In-country management training will be available for RTTS personnel through the AID funded Ecuador Training for Development Project.) The second type will be visits to the United States to observe first-hand the operations of the U.S. Land Grant System.

With its own resources or drawing on those of other GOE institutions, the RTTS will conduct or cause to be conducted studies of various problem areas of agriculture and rural development. Likewise, a number of important studies are expected to be conducted and financed under the individual subprojects. There will, however, be some funds allocated under the RTTS part of the Project to help with the costs of outside contracting of studies. These funds are expected to be concentrated on two areas of study. One is the contracting problems of the GOE, with a series of recommendations and implementation steps so as to enable the RTTS to become an effective and efficient contracting entity (see Section IV). The second is the final Project evaluation, which is expected to require a series of supporting studies.

Finally, the Project will finance three field vehicles for the RTTS, a small amount of office equipment, and local travel costs for the two long-term consultants and the various short-term consultants working with the RTTS.

The expected AID financed budget for the technical and other assistance to the RTTS is detailed in Table 1. The GOE will be expected to provide all personnel for the RTTS, office space, supplies and other operating expenses, local travel expenses for Ecuadorean RTTS staff members, and the costs of all studies except as indicated above. During the life of the Project, GOE personnel costs are expected to be about \$ 625,000. Operating and other expenses will sum at least \$ 125,000.

Table 1

Assistance for the Institutionalization of the RTTS

AID Contribution

<u>Elements</u>	<u>1980-81</u>	<u>1982</u>	<u>1983</u>	<u>1984-85</u>	<u>Total</u>
Long-Term TA	140,000	185,000	185,000	145,000	655,000
Short-Term TA	21,000	21,000	21,000	21,000	84,000
Training	10,000	5,000	5,000	5,000	25,000
Studies and Evaluations	5,000	15,000	15,000	15,000	50,000
Equipment and Vehicles	30,000	2,000	2,000	2,000	36,000
Local Travel Expenses for U.S. Consultants	<u>2,000</u>	<u>2,000</u>	<u>2,000</u>	<u>2,000</u>	<u>8,000</u>
<u>Subtotals</u>	208,000	230,000	230,000	190,000	858,000
Inflation and Contingencies	<u>2,000</u>	<u>25,000</u>	<u>50,000</u>	<u>65,000</u>	<u>142,000</u>
<u>Totals</u>	210,000	255,000	280,000	255,000	1,000,000

C. Subprojects

Since one of the primary purposes of the Project is to establish a workable Rural Technology Transfer System, no subproject ought to be preselected with complete certainty until the Project is underway and the subproject can be approved by the RTTS process described above. However, during intensive review, several subprojects were preselected as likely candidates and were developed to the stage where they are nearly ready for implementation. This was done for several reasons: to test the subproject selection criteria, to establish subproject demand with some certainty, to determine the basic size and scope of the Project, and to move forward so that a number of key subprojects can get underway shortly after the Project begins.

The subprojects were initially selected through a multi-step process. Representatives of the various rural sector organizations were asked to submit in idea form priority subprojects which they believed would be appropriate for financing under the Project. The intensive review committee, with the GOE representatives taking a lead role, then determined which subprojects addressed GOE priorities and sectoral constraints. Then the committee divided into subgroups to study and develop the subprojects in more detail, in most cases in conjunction with experts from the involved GOE institutions and with U.S. and local consultants. Once the subprojects were in more developed form, the committee judged them against the criteria discussed earlier to assure that they were sound and fulfilled Project objectives.

The result was eight subprojects. Not only does each fulfill the selection criteria, but collectively they address some of the major institutional and technological constraints impeding progress in the sector. Once all eight subprojects were developed, the committee prioritized them based on the second set of the selection criteria and on their institutions' and overall GOE priorities. The top priority subproject was judged to be Soil and Water Conservation and Management. The Small Farmer Adaptive Research and Development subproject was ranked next.

Once the Project gets underway, the RTTS Executive Staff will finalize each subproject for the Director's transmittal to the Executive Committee and Advisory Board for approval. USAID and the GOE expect that early emphasis will be given to developing the subprojects mentioned above plus the Catholic University of Guayaquil subproject. It is expected that four of these subprojects will be initiated during the Project's first year of implementation.

All of the proposed subprojects are tied together by emphases on institution-building and on small farmer technology development and dissemination. Improving linkages among research, education, and extension institutions is also a common characteristic. Though the subprojects are illustrative, most of them are in areas for which the GOE has requested major AID assistance, and the subprojects are expected to enhance the implementation of future AID projects. For example, the Soil and Water Conservation and Management Subproject will begin the development of small farmer

soil conservation technologies and the training of Ecuadorean soil conservationists, both of which would be coordinated with the implementation of projected FY-1981 AID Forestry and Soil Conservation Project. The Small Farmer Adaptive Research and Development Subproject and the Bean Research Subproject are expected to develop small farmer technological packages that can be drawn on by the FY-80 IRD Project. The expanded Soybean Production and Utilization Subproject is expected to complement activities under a projected FY - 1981 Rural Health and Nutrition Project. Likewise, the Food Processing Subproject and parts of the Catholic University of Guayaquil Subproject are expected to provide information and experiences useful for developing a FY -1982 Rural Employment Project that will finance agro-industries and small rural enterprises. In summary, the proposed subprojects are expected to be an important technical assistance and training support vehicle for many other USAID projects.

The eight subprojects are each described below. These descriptions are, in most cases, summaries of more detailed documents, available in USAID and LAC/DR files. Six of the eight subprojects are now designed virtually to the point where they could readily be carried out. Each, however, still lacks certain details such as specific evaluation indicators, some implementation details, and more detailed analysis on target group social and economic impact. These details will be developed by the participating institutions in conjunction with the RTTS Executive Staff and the lead university. Budget summaries for contribution from the RTTS fund and from the collaborating Ecuadorean entity are shown for each subproject, as explained in the Financial Analysis and Plan (page 68), the RTTS contribution will be comprised of AID Project funds in the initial years with the GOE contributing to the fund during the latter years of the Project.

A final subsection below lists other potential subprojects, identified but not yet developed in detail. But even this list should not be considered as all-inclusive, as the RTTS system should have the flexibility of developing new subprojects from scratch.

1. Soil and Water Conservation and Management

Background

Soil and water are two essential natural resources for agriculture. However, these resources can be, have been, and are badly misused in Ecuador. In many areas erosion is visibly destroying the soil base. Studies have verified losses of 50 to 100 tons of soil per hectare per year. Such erosion is caused by a variety of factors, including deforestation, poor farming techniques, and improper grazing, combined with climatic and other natural conditions. Closely related to soil use is water. While water is a necessary causal agent of erosion, erosion affects water quality. Eroded soil can plug rivers, canals, and harbors, causing flooding; soils with organic or inorganic particles attached can contaminate water and limit its uses.

Much of Ecuador is semi-arid and irrigation is a necessary component of much of the country's agriculture. Yet in fact little of the country's water resources are 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 (SWCM) could do much to improve the country's agriculture today and assure a natural resource base for the future.

INIAP began to recognize the importance of such a program a few years ago and initiated a modest SWCM training and research program. It has received some limited foreign TA. Likewise the Ecuadorean Soil Science Society (SECS) has done some limited extension work with small farmers with funding from the Ecuadorean Central Bank (BCE). However, there is no program which fully integrates research, extension, and education in this field, nor one which is of substantial enough size to have an impact. The proposed subproject attempts to address these weaknesses.

Objectives

The goals of the subproject are to improve the production and income of small farmers and to stem the losses in soil and water so that future generations of Ecuadoreans will be able to produce effectively on their lands. To these ends the subproject has five purposes: 1) to develop appropriate SWCM systems for small farmers through applied research; 2) to train small farmer change agents in limited geographic areas in the basic principles of SWCM; 3) to train Ecuadorean technicians so that a human resource base will be available for mounting a national SWCM program; 4) to develop a national conscience concerning the importance of the rational use and conservation of soil and water, and 5) to prepare the framework for the proposed AID Forestry and Soil Conservation Project.

Description and Budget

The subproject will provide financial and technical assistance to INIAP's Soils Department, which will develop SWCM personnel, technologies, and extension techniques. These technologies and techniques will be passed on to other organizations, which will disseminate the technologies to small farmers.

In the first year of the subproject, INIAP will assign one professional ingenieros agrónomos and five technician level agrónomos (each category increasing to nine the second year) to priority zones of MAG or regional authorities throughout the country. They will be supported by ten field workers (increasing to 18 by the subproject's second year), supplied by MAG, regional authorities, and other institutions.

In each zone, the staff will locate several critical site areas (two or three the first year), will do complete diagnoses of the site areas by means of questionnaires, aerial photographs, and other techniques, and will establish a series of research-training-demonstration trials on small farms (those of key community, cooperative, comuna, or association members, or those owned collectively by such organizations).

The subproject will provide for necessary national and international TA, for equipment, vehicles, and materials, for training of the local technicians both in-country and overseas, for training extension per-

sonnel of other institutions, and for the costs of farmer training. The TA and most of the training are elements for which external assistance is required and which can appropriately be provided by Title XII universities.

Farmer training will be of two types. One is the involvement of the local people who live in the site areas themselves; through the local organization (e.g., community, cooperative, comuna, or association) the farmers will actually participate throughout the various steps of the trials. The second is training of neighboring small farmers through field days at the trial sites. For both of these, and for even broader extension efforts, the subproject will develop slide sets, pamphlets, posters, and other transmittal techniques. In conjunction with other agencies, newspaper articles and television presentations will be developed in an attempt to create a national consciousness of the problems.

The subproject will have specific end-of-project-status indicators developed for it before it gets underway. The expected results are increased production, increased income, less soil erosion (before and after aerial photographs will be used), and more effective and efficient use of water in both the demonstration areas and in neighboring areas; certain macro-benefits from cleaner water, less silting of waterways, and the like; knowledge of what technologies are most effective under what conditions; a better understanding of the factors in Ecuador which affect soil and water conservation and management; knowledge of what dissemination techniques are most effective; knowledge of what complementary factors (e.g., incentives, credit) are needed if small farmers are to adopt the SWCM technologies; and a cadre of professionals, technicians, and paraprofessionals trained in SWCM. By the end of the subproject an improved institutional and technological capacity to deal with small farmer soil conservation problems and a national consciousness on the problem is expected to be formed, with sufficient commitment to expand the subproject into a national SWCM system.

More specific implementation details are presented in Annex C. The subproject budget is presented in Tables 2 (for RTTS financing) and 3 (for participating agencies' financing) on the following pages.

2. Small Farmer Adaptive Research and Development

Background

Section I.A. described the plight of the Ecuadorean small farm family (e.g., its small and marginal landholding, its inability to provide for its needs from agriculture alone, its low level of technology used, its lack of access to inputs and services). That section also described how agricultural research directed toward the small farmer is almost lacking in Ecuador, and how such research (combined with proper extension and education efforts) is fundamental if the basic rural poverty problems (and to a large degree Ecuador's food production problems) are to be solved. It also described how the complexity of the rural poverty problem effectively proscribes single-faceted interventions.

Table 2

SWCM Subproject

Proposed Budget - RTTS Contributions (US \$)

<u>Elements</u>	<u>1980-1</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>Total</u>
Personnel:					
a) Short-Term TA	30,000	24,000	24,000	12,000	90,000
b) Per Diem and Travel (for Resident Technicians)	3,500	3,500	1,500	500	9,000
Training External:					
a) Masters Degrees		30,000	45,000	15,000	90,000
b) Short Courses Exterior	18,000	18,000	9,000	9,000	54,000
Internal Courses:					
a) Extensionists	8,000	24,000	16,000	-	48,000
b) Agronomos	16,000	32,000	-	-	48,000
c) Conservationists	-	24,000	-	-	24,000
d) Campesino Training	5,000	5,000	7,500	7,500	25,000
e) Field Days	12,000	12,000	12,000	12,000	48,000
Aerial Photos	5,000	-	-	5,000	10,000
Equipment and Materials:					
a) Field Equipment	12,500	2,500	2,500	2,500	20,000
b) Field Materials	4,000	6,000	8,000	8,000	26,000
c) Office Materials	1,000	1,000	1,000	1,000	4,000
d) Vehicles	30,000	10,000	-	-	40,000
e) Publication Materials	2,000	2,000	2,000	2,000	8,000
<u>Subtotals</u>	147,000	194,000	128,500	74,500	544,000
Inflation and Contingencies		<u>20,000</u>	<u>27,500</u>	<u>25,500</u>	<u>73,000</u>
<u>Totals</u>	147,000	214,000	156,000	100,000	617,000

Table 3

SWCM Subproject

Proposed Budget - GOE Contribution (US \$)

<u>Elements</u>	<u>1980-1</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>Total</u>
Personnel:					
a) Director	15,600	15,600	15,600	15,600	62,400
Per diem and travel	2,400	2,400	2,400	2,400	9,600
b) Conservationists	60,000	108,000	108,000	108,000	384,000
Per diem and travel	10,000	18,000	18,000	18,000	64,000
c) Agrónomos	26,400	47,520	47,520	47,520	168,960
Per diem and travel	4,000	7,200	7,200	7,200	25,600
d) Field workers	34,400	61,920	61,920	61,920	220,160
Per diem and travel	2,700	4,860	4,860	4,860	17,280
e) Resident Technicians 4 months salary	6,200	7,200	4,600	3,300	21,300
f) Secretary	4,200	4,200	4,200	4,200	16,800
Space: Office and Bodega	9,600	9,600	9,600	9,600	38,400
Office Materials	1,000	1,000	1,000	1,000	4,000
Vehicles: Purchase and Maintenance	49,200	17,600	19,800	19,800	106,400
<u>Subtotals</u>	225,700	305,100	304,700	303,400	1,138,900
Inflation and Contingencies	300	30,900	64,300	100,600	196,100
<u>Totals</u>	226,000	336,000	369,000	404,000	1,335,000

Agricultural technology is specific as to local crops, soils, climatic conditions, and the capabilities and capacities 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.

INIAP three years ago began to take an interest in the small farmer, began to realize the need for on-farm adaptive research, and began to understand the complexities of the small farm subsector and the need for multifaceted strategies. With the support of CIMMYT, University of Florida, and other institutions, INIAP initiated an Adaptive Research Program, developing questionnaires and studies on the small farmer in various geographic zones, conducting on-farm research with both single crops and cropping systems, and training local technicians from other Ecuadorean institutions. Initial results have been promising, but lack of trained personnel and funds have limited efforts to date to small areas of the country and to a handful of cropping systems. The subproject will provide the means to expand and broaden the program so it can have a meaningful impact on Ecuador's rural poverty problem.

Objectives

In support of the goal of improving the income, productivity, and well-being of the small farmer, the subproject purports to develop and disseminate practical and appropriate technologies for various types of small farming situations in various ecological zones. Its specific purposes are: (1) to generate and transfer technologies adaptive and 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) to develop the most appropriate techniques for training small farmers through their organizations; (3) to train Ecuadorean technicians from various rural sector institutions in the techniques of research-extension-education for a small farm adaptive research and development (SFARD) system, and (4) to establish and fortify linkages among Ecuadorean research, extension, and education institutions so a SFARD system can be built.

Description and Budget

Working through INIAP's existing program, 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 SFARD 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, melloco, chocho, 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 systems for arid regions, for tropical regions, and for other zones with environmental conditions which differ from the ones most common in Ecuador. For any given geographic situation, it will be determined which combination

of the above activities, plus perhaps others, is most appropriate.

During the first year of the subproject, INIAP will assign a professional ingeniero agrónomo and two technicians to each of eight selected areas, where they will be assigned to MAG zonal offices, ASAs, PIDAs, or other extension offices of MAG, regional authorities, IRD projects, or other institutions. Seven other areas will be added in later years. In each such area, the SFARD team will locate smaller site areas typical of small farmers and will conduct thorough and intensive agro-socio-economic diagnoses of these site areas using questionnaires and other field research techniques. They will then carry out a mix of research-demonstration field trials directly on individual farms.

A large part of the subproject is training. Small farmers will be trained through field days and other appropriate mechanisms. (A major part of the evaluation of the subproject will be to determine to what degree field days and other traditional extension methods are effective in transferring such technologies, what follow-on more individual or nonformal extension work is required, and what complementary services such as credit are needed for adoption to take place.) A second aspect of training will be to involve students in the SFARD process, such as having university students in agriculture do their final year's research thesis on aspects of the system. A third aspect of training is to train local technicians, particularly extension agents, in the SFARD process. Finally, a cadre of professionals and technicians will be trained, both in-country and overseas, in specialized aspects of the SFARD process.*

Specific end-of-project indicators will be developed before the subproject gets underway. Expected results in general terms are: (1) appropriate new technologies and practical systems developed which can be transferred to small farmers; (2) increased production in the areas under experimentation/demonstration, resulting in increased income for participants; (3) the new technologies adopted by small farmers participating in the field days and by other farmers; (4) an increased understanding of small farm agro-socio-economic conditions and of factors inhibiting improvement; (5) technicians trained in the various theoretical and practical aspects of a SFARD system; and (6) a cooperative spirit fostered among participating research, education, and extension institutions and willingness by them to continue and expand the SFARD system.

Though this subproject differs from the Soil and Water Conservation and Management Subproject in activity and geographic focuses and in institutional mixes, there are similarities in technical aspects and in methodologies; and considerable coordination between the two is expected. The subproject contains TA and training elements for which external assistance is required and for which Title XII university assistance is deemed appropriate due to the experience and on-going research in many of the universities. In addition to TA and training, the subproject will cover certain costs of vehicles, equipment, and materials. More specific implementation details are presented in Annex C. The subproject budget is presented in Tables 4 (for financing from the RTTS Fund) and 5 (for GOE counterpart institution financing).

* A major activity of SFARD subproject will include the development of crop protection technological packages for use in IRD project areas (Salcedo and Quimiag-Penipe).

Table 4

SFARD Subproject

Proposed Budget - RTTS Contribution (US \$)

<u>Elements</u>	<u>1980-1</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>Total</u>
Personnel:					
a) Long-Term TA	-	90,000	90,000	-	180,000
b) Short-Term TA	18,000	24,000	18,000	18,000	78,000
c) Per diem and Travel for Resident Technicians	7,500	7,500	7,500	7,500	30,000
Training External					
a) Masters Degrees	-	60,000	105,000	45,000	210,000
b) Short Courses	18,000	54,000	54,000	27,000	153,000
Internal Courses					
a) Becas	18,000	18,000	18,000	18,000	72,000
b) Field days	3,000	3,000	3,000	3,000	12,000
c) Extensionist Course	20,000	20,000	20,000	20,000	80,000
Equipment and Materials					
a) Vehicles	100,000	-	-	-	100,000
b) Field Equipment	7,000	3,000	2,500	2,500	15,000
c) Ag. Machinery	20,000	10,000	-	-	30,000
d) Field Materials	4,000	5,000	6,000	6,000	22,000
e) Office Materials	1,000	1,000	1,000	1,000	4,000
f) Publication Materials	2,000	2,000	2,000	2,000	8,000
<u>Subtotals</u>	218,500	298,500	327,000	150,000	994,000
Inflation and Contingencies		30,000	69,000	50,000	149,000
<u>Totals</u>	218,500	328,500	396,000	200,000	1,143,000

Table 5

SFARD Subproject

Proposed Budget - GOE Contribution (US \$)

<u>Elements</u>	<u>1980-1</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>Total</u>
Personnel:					
a) Head	15,600	15,600	15,600	15,600	62,400
b) Area Leaders	120,000	180,000	210,000	225,000	735,000
c) Program Technicians	224,000	336,000	392,000	420,000	1,372,000
d) Secretaries	4,200	4,200	8,400	8,400	25,200
e) Local Short-Term TA	13,000	13,000	13,000	13,000	52,000
f) Local Travel & Per diem	30,870	30,870	30,870	30,870	123,480
Office Space	3,800	3,800	3,800	3,800	15,200
Materials:					
a) Vehicle Maintenance	34,000	62,000	84,000	84,000	264,000
b) Machinery Maintenance	2,200	2,200	2,200	2,200	8,800
c) Office Materials	1,000	1,000	1,000	1,000	4,000
d) Transport Costs Campesinos	640	960	1,120	1,200	3,920
<u>Subtotals</u>	449,310	649,630	761,990	805,070	2,666,000
Inflation and Contingencies		64,970	160,010	266,480	491,460
<u>Totals</u>	449,310	714,600	922,000	1,071,550	3,157,460

3. Catholic University of Guayaquil

Background

As indicated in the Title XII Baseline Study and other documents, agricultural education in Ecuador does not meet the needs of the country nor does it have adequate linkages with the extension and research institutions of the country. Perhaps one of the most serious deficiencies in the system is the dearth of training at below the professional (five year university course) level. Such training is now limited to the various technical high schools (almost all are public and only a handful are exclusively agricultural schools) and to a handful of two year courses in technical universities and in the Catholic University of Guayaquil.

The Catholic University of Guayaquil (CUG) has a two year training program in Animal Science. The program dates from 1969 when CUG established, with the assistance of the Catholic University of Washington D.C., two year vocational programs in two fields. (In addition to Animal Science, Electricity is the other subject area currently offered.) These two programs fall under a division in the University called the College of Technical Education for Development.

About 60 students are enrolled in the Animal Science Program. Most are from small rural towns, with about 20% from farm families. Almost none are from agricultural high schools. With classes held from 7 to 9 a.m. and 6 to 9 p.m., about 40% of the students work in the intervening hours. About 15% of the students hold scholarships given by Catholic Relief Services.

The College of Technical Education for Development has 23 part-time faculty members, with some 14 working any given term. The faculty is divided fairly evenly between Animal Science and Electricity. Except for the Dean of the College and the directors of the two programs, all professors are paid on an hourly basis. All hold other jobs. All have B.S. degrees, but none has a masters.

The Animal Science curriculum includes a full range of courses, including anatomy, biology, cattle management, physiology, pastures and forages, fertilizers, agricultural mechanization, parasitology, dairy science, animal diseases, animal nutrition, genetics, animal reproduction, field practices, poultry production, and swine production. In theory 28% of the course time is scheduled for laboratory and field work. In practice, however, because of facility and transport limitations, budget limitations on supplies, and lack of professor and student motivation, lab time is considerably less. Consequently, the Program is quite theoretical.

Classroom facilities for the Animal Science Program are adequate, but the only available land is a 25 hectare plot two hours' drive away. Equipment for the Program is virtually nonexistent, and the annual budget for supplies is inadequate. No other institutions are currently used for field training.

Graduates of the Program usually find employment with private industry, ranches, family farms, and consulting firms. (The public sector to date has not recognized a two year degree as a qualification for its positions, though some institutions - particularly BNF - are now expressing a desire for people trained at this level.) The salaries of graduates are only marginally higher than the graduates of technical high schools. In spite of this, young people find the Program attractive since it offers prestige and further opportunities; and there are sufficient applicants for the Program.

In short, the Program as it currently exists has certain positive strengths but certain notable weaknesses. CUG, in general, would like to establish a full scale agricultural education program based on the U.S. Land Grant model. However, it realizes that this is an effort that will require many millions of dollars and a number of years. 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 between it and various research and extension institutions; and (2) laying the groundwork for expanding into other areas of agricultural education. The subproject will assist CUG take these steps.

Objectives

The subproject has two purposes. The first is to fortify CUG's Animal Science Program so as to better prepare technicians for gainful employment. Such strengthening must include: (1) restructuring the curriculum and providing for sufficient practical laboratory and field experiences; (2) establishing linkages with INIAP and other appropriate institutions; and (3) improving staff quality. The other purpose is to lay the groundwork for CUG's eventual expansion into a more extensive agricultural education program. This will include: (1) conducting a manpower assessment so as to identify occupational demands; (2) designing curricula and preparing detailed plans for expansion into agricultural educational fields other than Animal Science; and, (3) conducting limited training in other than Animal Science; for BNF technicians, seminary students, and other groups with defined needs for working in rural areas.

Description and Budget

The CUG subproject was studied in great detail during intensive review by a team contracted from Title XII universities. In summary, 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 and by carrying out an intensive staff training program, both in Ecuador and in the United States.

2) CUG will improve its Animal Science curriculum by organizing a curriculum advisory committee (formed by representatives from administration, staff, INIAP, and the TA advisory group), which will study the structure of the curriculum identify which courses are necessary for students, sequence the courses, identify objectives and content for each course, determine how each course could best be given to achieve its objectives (i.e., identify the best mix of classroom, laboratory, field, and practical work experiences), and make the necessary arrangements to carry out each course

in the way determined. To support these efforts the subproject will finance technical assistance and some supplies and equipment.

3) In order both to carry out the revised curriculum and to form the linkages needed for curriculum expansion efforts, CUG will enter into agreements with INIAP, farmers, ranchers, and agri-businesses for providing training and practical work experience. The subproject will provide support for these contracts on a declining basis.

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 just what educational areas it might expand into. Given CUG's location in Ecuador's most industrialized area, the survey will study needs in the food processing industry and in marketing as well as in specialities considered more rural in orientation. The subproject will assist with costs of data collection, processing, and TA.

5) Using the results of the assessment, the curriculum advisory committee organized earlier, with considerable TA assistance, will draw up suggested curricula in areas of study other than Animal Science. In addition, key members of CUG's administration will travel to the United States to study in detail the workings of the Land Grant system of universities. Then, together the curriculum advisory committee and the administration will plan what areas CUG might further expand into and how to do it (given staff and budget realities).

6) As a first expansion step, 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. Two such expected courses are basic agricultural economics for employees (mostly accounting majors) of BNF, and rural sociology and basic agricultural sciences for persons training to be rural priests (or through extension-type courses for existing rural priests).

In order for the subproject to be successful, CUG must make a considerable commitment, both financially and in changing its current manner of operating. It will have to employ a full-time Director for the to-be-expanded Animal Science Program, plus a core of fulltime instructors. It will have to enter into functioning agreements with INIAP and other institutions, and it will have to accept the reality that most practical laboratory and field experiences will have to be provided by such other institutions which already have land, buildings, and equipment. It will have to fund materials, staff time (particularly for laboratory and field work), and certain other items at much higher levels than at present. And it will have to work closely with TA advisors and provide logistics for them. USAID has received a commitment from Catholic Relief Services to finance part of the counterpart costs. (All budget commitments will be finalized before the subproject can be submitted to the RTTS Advisory Board by the RTTS Executive Committee.)

Table 6

CUG Subproject

Proposed Budget - RTTS Contribution (US \$)

<u>Elements</u>	<u>1980-1</u>	<u>1982</u>	<u>1983</u>	<u>1984-85</u>	<u>Total</u>
Long-term TA	85,000	42,500			127,500
Short-term TA	9,000	18,000	18,000	18,000	63,000
Local TA	10,000	10,000	10,000	10,000	40,000
Manpower Study	18,000				18,000
Other Studies and Evaluations	3,000	4,000	4,000	4,000	15,000
In-Country Staff Training	3,500	3,500	3,500	3,500	14,000
US Visits/Training	5,000	10,800	10,800	11,400	38,000
In-Country Travel (TA, Curric. Committee, and Admin. Staff)	2,000	1,500	1,000	500	5,000
Equipment	5,000	5,000	3,000	1,000	14,000
Student Training at INIAP and other Institutes (declining basis)	17,000	14,000	8,000	6,000	45,000
Other Costs of Curric. Committee	4,000	4,000	4,000	4,000	16,000
Courses for Rural Priest and Others		2,000	2,000	1,000	5,000
<u>Subtotals</u>	161,500	115,300	64,300	59,400	400,500
Inflation and Contingencies	1,500	11,700	13,700	19,600	46,500
<u>Totals</u>	163,000	127,000	78,000	79,000	447,000

Table 7

CUG Subproject

Proposed Budget - CUG Contribution (US \$)

<u>Elements</u>	<u>1980-81</u>	<u>1982</u>	<u>1983</u>	<u>1984-85</u>	<u>Total</u>
Director	14,333	15,199	15,859	16,552	61,943
Ecuadorean Replacement of TA		7,600	15,859	16,552	40,011
Full-time faculty (1)	11,778	12,317	12,883	13,477	50,455
Secretaries (2)	3,667	3,667	3,667	3,667	14,668
Office Space (3)	6,667	6,667	6,667	6,667	26,668
Part-Time Faculty (at 9.26h 37 hrs)	10,963	10,963	10,963	10,963	43,852
Classrooms and Labs	55,555	55,555	55,555	55,555	222,220
Supplies and Equipment	7,239	750	750	750	9,489
Student Training at INIAP			8,000	12,000	20,000
Travel to INIAP Stations	1,333	1,333	1,333	1,333	5,332
Local Field Trips	<u>1,111</u>	<u>1,111</u>	<u>1,111</u>	<u>1,111</u>	<u>4,444</u>
<u>Subtotals</u>	112,646	115,162	132,647	138,627	499,082
Inflation and Contingencies	<u>2,354</u>	<u>11,838</u>	<u>28,353</u>	<u>46,373</u>	<u>88,918</u>
<u>Totals</u>	115,000	127,000	161,000	185,000	588,000

Table 8

CUG Subproject

Proposed Budget - Catholic Relief Services Contribution (US \$)

<u>Elements</u>	<u>1980-81</u>	<u>1982</u>	<u>1983</u>	<u>1984-85</u>	<u>Total</u>
Participant Training	20,000		20,000		40,000
Rabbit Hutches (Boliche)	1,500				1,500
Duck Pens and Coops (Boliche)	1,000				1,000
Animals for Above	300				300
Office Supplies for CUG	2,000	2,000	2,000	2,000	8,000
Instructional Supplies for CUG	3,000	750	750	750	5,250
Maintenance - Animal Bldg.		200	200	200	600
Maintenance & Repair Equip.		200	200	200	600
<u>Subtotals</u>	27,800	3,150	23,150	3,150	57,250
Inflation and Contingencies	<u>1,724</u>	<u>261</u>	<u>2,639</u>	<u>791</u>	<u>5,415</u>
<u>Totals</u>	29,524	3,411	25,789	3,941	62,665

Table 6 presents the RTTS Fund contribution to the subproject. Most of this represents TA and training to be provided by Title XII universities to CUG, due to their experiences in these activities. Table 7 presents CUG's contribution. Much of this is already supplied by CUG, both by payment and in kind. The incremental cost to CUG of the subproject is estimated at \$215,000 over the subproject life. Table 8 presents the minimum contribution expected from Catholic Relief Services, an amount which will likely increase.

4. Agricultural Training for Rural Youth

Background

A program specifically geared to training rural youth has been underway in Ecuador since 1946. The program, carried out through clubs called 4-F (similar to the 4-H Clubs of the United States) is a joint venture between MAG and the private 4-F Foundation of Ecuador.

4-F Clubs are open to rural young men and women between the ages of 14 and 25. The clubs are geared to teaching practical agricultural activities, particularly ones which the young person can carry out on his/her own while still young and then continue on with after acquiring a farm unit (e.g., beekeeping, rabbit raising). The young people are encouraged to carry out specific projects, on both a group and an individual basis, including learning how to use credit. In addition to strictly agricultural activities, the students are taught other practical skills which are useful on farms, such as carpentry. They also receive leadership training, learn how to work in groups, and are taught the value of group activities. The program is designed to impart a sense of family, community, and responsibility in the young person.

MAG provides the personnel for the program. Various extension agents work with 4-F Clubs, generally as one of their activities. The 4-F Foundation provides two excellent training facilities, one just outside Quito at Conocoto and the other the former Peace Corps training ranch (Rancho Ronald) in the coastal area near Santo Domingo de Los Colorados. Both have dormitories, meeting rooms, workshops, and other facilities at modest but adequate levels. The Foundation pays all the expenses for training 4-F members at the centers in two week courses in beekeeping, rabbit raising, carpentry, basic agricultural sciences, and other skills. The Foundation also makes credit available to 4-F Clubs so their members can carry out what they learned. MAG provides the personnel for the training centers.

There is no doubt that the 4-F program works. The practical projects have a high level of success, technologies taught have disseminated widely throughout the country, and many community leaders have been created. At considerably less cost than agricultural high schools, the young people (a large number with education only through grade 6) learn certain fundamentals which will allow them to be better farmers than the marginal farmers they otherwise would become.

The 4-F program, however, 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 4-F program is virtually lost within the MAG bureaucracy. Except for one person assigned to the 4-F program at the central level, it must utilize the personnel of MAG's Campesino Development Division, of which it is a part. Usually this division's personnel have their hands full with a variety of other tasks. Furthermore, Campesino Development workers are assigned only to zonal offices and not to the ASAs and PIDAs where actual field work takes place. Hence they usually help establish and work with 4-F Clubs only close to provincial capitals, or they must cajole other extension agents to devote extra time to helping 4-F Clubs. In other words, the way things are now organized, MAG personnel are able to devote little time to 4-F activities, and only in limited areas.

The other reason for the stagnation has been a lack of dynamism within the 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 Club organizations in other countries.

The time appears ripe for revitalizing the 4-F program so as to make it an effective and efficient vehicle for transferring technologies to rural youth. 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. MAG has indicated to USAID that it wishes to implement such a Program and is willing to provide a number of agrónomos to be assigned exclusively to the Program. MAG itself presented the subproject to the committee working on the design of the Project. As to the Foundation, early this year it elected a new president for the first time in over a decade, a dynamic man with an agricultural background and a former Point IV extension agent. The Foundation is excited about its acquisition of Rancho Ronald and is beginning to think of creative new uses for the facility. In short, both institutions appear ready and willing to address their weaknesses and give the 4-F Program the importance it warrants.

Objectives

The purpose of the subproject is 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 exclusively or almost exclusively 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.

Table 9

4-F Subproject

Proposed Budget - RTTS Contribution (US

<u>Elements</u>	<u>1980-81</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>Total</u>
Short-Term TA	36,000				36,000
Overseas Training	24,000				24,000
In-Country Training	6,800	7,800	7,200	7,800	29,600
Observation Visits	4,000	10,000	13,000	10,000	37,000
Vehicles	18,000	36,000	20,000		74,000
Ag. Equip		20,000			20,000
Mobil Unit.		20,000			
Bookkeeping Equip.	17,700	2,000	1,000		20,700
Carpentry Equip.	3,000	4,000	1,000	2,000	10,000
Equip. for Other Instruct. Area to be Determined		10,000			10,000
Office Equip.	1,200	1,200			2,400
Acquis. of Animals	500	1,000	500	500	2,500
Constructions	<u>12,000</u>	<u>12,000</u>			<u>24,000</u>
<u>Subtotals</u>	123,200	124,000	42,700	20,300	310,200
Inflation and Contingencies	<u>1,800</u>	<u>13,000</u>	<u>9,300</u>	<u>7,700</u>	<u>31,800</u>
<u>Totals</u>	125,000	137,000	52,000	28,000	342,000

Description and Budget

MAG will establish a National Rural Youth Program Division as a separate entity within the Ministry, with its own budget and personnel. Five professionals will be assigned to administer the Program, two at the national level and three at regional levels. Twenty-four technicians (agrónomos) will be assigned to the field (ASA/PIDA) level to work directly with the clubs, expanding to at least 32 during the life of the subproject. Zonal and local committees will be formed to provide resources and volunteer assistance to the clubs; they will include local lay leaders, civil and religious leaders, educators, and representatives of public sector institutions. The subproject will provide in-country training for the MAG technicians, and to a limited degree for some of the local committee members. It will also provide training both in Ecuador and overseas for the five professionals.

To improve the Program, the subproject will provide short-term TA as well as visits overseas so that ideas can be exchanged with other 4-F-like programs. The subproject will also fund materials to improve teaching in several areas, as well as a modest amount of supporting equipment and infrastructure. Because of the success of similar programs in the United States, it is believed that Title XII institutions will be the ideal mechanism to provide the TA and much of the other support for the subproject.

The financial plan for the RTTS Fund is presented in Table 9. MAG will be required to contribute the necessary full-time personnel (29, building to 37), many of whom are already MAG employees. MAG will be required to contribute certain operating expenses. The total MAG contribution during the life of the subproject is estimated at \$ 907,000. The Foundation will also have to increase its support, as the number of courses and the amount of credit needed for the practical applications are both expected to increase substantially. The amount of this increased support will be carefully worked out with the Foundation based on needs and on realistic fund-raising expectations and will be included in the final proposal to be submitted to the RTTS Advisory Board.

5. Agricultural Policy and Statistics

Background

National agricultural statistics for Ecuador are severely deficient. For certain crops and certain important agricultural factors (e.g., soil loss, forestry), virtually no statistics are produced. For most of the important crops, considerable statistics are generated, but they are generally questionable in terms of reliability, in many cases being merely projections of previous inaccurate data. And even when good information is generated (e.g., the work of MAG's National Regionalization Program on soil types and water resources), the information generally is not disseminated beyond the producing office; sometimes even the GOE's National Statistics and Census Institute (INEC) does not know of its existence.

Lack of reliable statistics can cause costly problems. As an example, in past years the GOE's Agricultural Marketing Company (ENAC) purchased a considerable quantity of rice from overseas, based on statistics that showed that Ecuador's forthcoming rice harvest would not fill the country's needs. It turned out that the harvest was sufficient, plus there was uncounted rice stored in Ecuador. So the Marketing Company had to reexport the imported rice; not only was considerable money wasted in transport and related costs, but the then perceived surplus situation created a disincentive for planting the next crop, and an actual shortage then resulted.

Probably the most serious result of poor statistics is lack of a base on which the GOE can form policies. Some observers of the Ecuadorean agricultural situation believe that poor policies are the major constraint inhibiting increased production. Producer prices for many products are held artificially low so as to keep consumer prices low. The GOE has no policies on soil loss or on environmental protection in general. Laws on forestation are not enforced. And other policies - on credit, for example - are based more on conjecture than on hard data.

MAG, BNF, other agricultural entities, and INEC are all aware of the deficiencies and say they are willing to work together to correct them. The GOE in its public statements indicates it wishes to rationalize agricultural policies; and CONADE and MAG say they want reliable data so as to be able to make policy recommendations to Ecuador's President and Congress. Given weaknesses within MAG and INEC, foreign assistance is without doubt necessary for an effective data generation and policy making system to be established.

Objectives

With the objective of having a reliable statistical base on which the GOE can make policy and operating decisions, the subproject has three purposes: (1) to develop a system of area and production statistics on the most important crops, animal species, and factors of production in Ecuador; (2) to improve the techniques and methodologies used in sampling, collecting data, and processing data in Ecuador; and (3) to improve the methods by which statistics are converted into policy recommendations by GOE entities.

Description and Budget

MAG, BNF, INEC, CONADE, RDS, and other concerned institutions will form a Committee for the Development of Statistics and Policy, which will study exactly what agricultural statistics should be generated and to what degree of accuracy. The study will take into account the needs for information for day-to-day decision making of agricultural sector officials, for policy analysis and formulation, and for private individuals and firms that work and invest in the rural sector. A comprehensive plan for gather-

ing the data and making them available in convenient form will be developed.

INEC will have the responsibility for carrying out statistical surveys in accordance with the agreed upon plan. To do this it will have to expand its Department of Agricultural Statistics. BNF, MAG, and other institutions, through agreements with INEC, will supply most of the field personnel, office space, field vehicle use, and other logistical support.

The Committee will make assignments to working groups to prepare draft policy analysis. The lead university will oversee and assist with the identification of priority concerns, the structuring of the scope of each analysis and the methodology to be followed. The work group will present its draft analysis to the Executive Director for review and comments before forwarding the final recommendation to the Advisory Board through the Executive Committee.

The subproject will supply the necessary TA and training of personnel. It will also support the effort with a core of vehicles and supplies, and with a fund for doing some test surveys.

The RTTS Fund budget is presented in Table 10. The GOE will have to support the subproject with personnel and logistical support. The cost of the field personnel to be detailed by MAG, BNF, and other institutions to the statistics effort, plus the logistical expenses, can only be determined once the Committee decides on just what statistics are to be gathered. However, it is likely to be between \$ 500,000 and \$ 750,000.

TABLE 10

Agricultural Policy and Statistics Subproject

Proposed Budget - RTTS Contribution (US \$)

<u>Elements</u>	<u>1980-81</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>Total</u>
Short-term TA	150,000	75,000	25,000	15,000	265,000
Training Overseas	50,000	25,000			75,000
In-Country Training	6,000	4,000			10,000
Vehicles, Equipment and Supplies	60,000	5,000	5,000	5,000	75,000
Survey Fund	<u>20,000</u>	<u>15,000</u>			<u>35,000</u>
<u>Subtotals</u>	286,000	124,000	30,000	20,000	460,000
Inflations and Contingencies	<u>4,000</u>	<u>14,000</u>	<u>7,000</u>	<u>7,000</u>	<u>32,000</u>
<u>Totals</u>	290,000	138,000	37,000	27,000	492,000

6. Expanded Soybean Production and Utilization

Background

Soybeans have great potential to improve the nutritional condition of Ecuador's protein-starved poor. The various uses to which the bean could be put have barely begun to be explored in Ecuador. Also, 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. Soybeans are not a traditional small farm crop, but they can profitably be planted on every level from family garden to subsistence plot to small producer to large plantation. 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.

In the last decade, soybean production has increased from almost nothing to the point where it is about to become a significant crop for Ecuador. 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 kg./ha. to 1,399. Production is centered in zones on the Coast which have been colonized in the last 20 years, and producers range from small to large units.

Initiation and expansion of soybean production in Ecuador has been due in large part to AID assistance. Under AID's Agricultural Diversification Loan (518-L-033), considerable technical and other assistance was given to producers willing to plant this crop. Other AID assistance on soybeans has been given to Ecuador from centrally funded projects.

A significant part of the AID funded TA 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.) The INTSOY-INIAP relationship began in 1974 and has grown and prospered. From 1974 through 1976, INTSOY provided ten short-term consultancies and helped INIAP conduct an in-country training session on soybean production. Since then, INTSOY personnel have made many short visits to INIAP to inform INIAP on developments in the soybean field and to advise INIAP on problem areas and on how to proceed with on-going research. These visits have generally been in conjunction with INTSOY travel to other countries and have been funded by AID centrally funded projects. In the past 16 months, for example, eight such short visits have been made. The INTSOY-INIAP relationship has been formalized through a Memorandum of Understanding between the parties, and subsequent letters of agreement have detailed the INTSOY assistance to be given on specific activities.

As soybeans become more widely planted, risks from disease increase. Indeed, soybean mosaic virus disease is already a problem, as are certain insect pests. Clearly, increased and expanded research efforts on disease control and improved varieties are necessary if Ecuador is to be in a position to keep expanding production without problems. Also necessary as Ecuador expands production are an improved seed multiplication system, increased in-country oilseed processing capacity, research on appropriate mechanization, an improved marketing structure, increased capacity to disseminate research results and other information to producers, especially small ones, and experimentation on increased and improved ways to utilize soybeans for direct human consumption, especially ways to reach the undernourished poor.

INIAP's commitment to date to do significant levels of research on soybean problems, and the background of INTSOY-INIAP collaboration, can and should be built upon in order to address the areas mentioned above. However, any effective soybean program for Ecuador must expand beyond INIAP and involve MAG's Oil Seeds Program (for extension), ENAC (for marketing), BNF (for expanding credit to small producers), MAG's Campesino Program plus the Ministry of Social Welfare (for family garden production and home use of soybeans), the Ministry of Health's National Nutrition Institute (for research on appropriate human uses), Ecuador's mixed-ownership seed processing company - EM Semillas (for seed multiplication), and the private sector (for soybean processing). In short, what is needed is a solid soybean program for the country, probably under INIAP's leadership, and involving other appropriate institutions.

Objectives

Given the goals of (1) reducing malnutrition, (2) eliminating Ecuador's edible oils deficit, and (3) providing increased income for small farmers, the subgoal upon which the subproject is based is to establish a well-balanced, integrated, and sustainable soybean program in Ecuador. Such a program will incorporate such aspects as (1) research on diseases, pests, and improved varieties, (2) dissemination of information to producers of all sizes, (3) home garden and small farm production, (4) adequate credit and other input availability, (5) availability of improved seeds, (6) advantageous marketing opportunities for producers of all sizes, (7) increased/improved on-farm human uses as well as ways to utilize soybeans to best benefit the urban poor, (8) sufficient processing capacity, (9) experimentation with appropriate mechanization, (10) proper uses of soybeans for animal consumption, and (11) the institutional capacity to address new problems as they arise. To these ends, the subproject will have the following purposes: (1) To create an interinstitutional

soybean working group, probably under INIAP's leadership, so as to develop and carry out a plan for soybean production and use in Ecuador, (2) to develop and implement a comprehensive research program to investigate the problems and constraints in all areas of soybean production, marketing, and use, and (3) to develop the human resources necessary for INIAP and the other institutions to carry out (1) and (2) above.

Description and Budget

As a first step in carrying out the above, a joint INIAP-INTSOY team will thoroughly review Ecuador's total soybean production/marketing/use system, including all aspects mentioned earlier. The team will then formulate a tentative plan. (INIAP is the likely candidate lead institution because of the interest it has shown so far in soybeans, its relationship with INTSOY, and the leadership role it has so far given in this field. However, if the RDS and MAG so decide, MAG's Oil Seeds Program could be substituted for INIAP as the lead GOE institution in this subproject.) All other involved institutions, GOE and private, will be consulted during these steps. Then, under INIAP's leadership, the various institutions will be brought together formally to revise and detail the plan and to establish specific work responsibilities, timetables, and research, TA, and training needs.

The subproject will provide the INTSOY TA needed during the initial phase plus support the TA and training needed to carry out the plan. Though the details for the latter will be worked out by the interinstitutional working group, 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 (e.g., research on higher yielding varieties, mosaic disease control, improved marketing, more efficient utilizations); (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, in the United States (e.g., USDA courses, INTSOY's short courses), 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 other types of specialized training as necessary; and (5) a modest fund for equipment and for library and research materials.

The RTTS Fund estimated budget is as indicated in Table 11. The GOE will contribute with personnel, research space, most materials, and some of the training costs. Exact figures cannot be determined at this time, but it is estimated that they will at least equal the AID contribution.

Table 11

Expanded Soybean Production and Utilization Subproject

Proposed Budget - RTTS Contribution (US \$)

<u>Elements</u>	<u>1980-81</u>	<u>1982</u>	<u>1983</u>	<u>1984-85</u>	<u>Total</u>
Short-Term TA	51,000	51,000	51,000	44,000	197,000
Long-Term Training		45,000	75,000	30,000	150,000
Short-Term Training - U.S.	12,000	20,000	20,000	18,000	70,000
Short-Term Training - Ecuador and Third Countries	9,000	21,000	10,000	10,000	50,000
Equipment and Materials	<u>5,000</u>	<u>10,000</u>	<u>5,000</u>	<u>5,000</u>	<u>25,000</u>
<u>Subtotals</u>	77,000	147,000	161,000	107,000	492,000
Inflation and Contingencies	<u>3,000</u>	<u>16,000</u>	<u>34,000</u>	<u>36,000</u>	<u>89,000</u>
<u>Totals</u>	80,000	163,000	195,000	143,000	581,000

7. Bean Research

Background

Beans are an extremely important crop for the Ecuadorean small farmer. Beans typically are used as an adjunct crop with corn, with the beans providing an important source of nitrogen fixation for the soil. Beans are also an important source of protein in the diet, in some cases the most important.

Ecuador's bean production has fallen dramatically. From 1970 to 1977, hectares planted dropped 28% and yields per hectare dropped 13%, resulting in an overall drop in tons harvested of 37%. Domestic prices during this period rose 168%, about the same as with food crops as a whole.

There is little firm information as to why this drop has occurred. Probably it has been caused by some combination of the following: lack of credit, other inputs, and marketing opportunities for beans, making them attractive only as a subsistence crop; lack of information and extension support on beans, versus other crops; and the general agricultural malaise in Ecuador, due to fewer economic incentives than other endeavors, lack of rural area support by the GOE, and poor weather conditions during much of the 1970's.

Because of beans' importance as a traditional subsistence and also cash crop, because of beans' nitrogen fixation qualities, and because of beans' nutritional value, the GOE and USAID believe it important to undertake a special subproject effort on this crop. However, both realize that this cannot be the sort of research/extension effort which only looks for increased yield varieties and tries to disseminate them. Because of the large number of varieties under production and because of the traditional nature of the crop both in cropping schemes and as a staple of the diet, the research must consider beans as an integral part of the whole small farm farming system and way of life. Any subproject, in effect, must go beyond a bean subproject to a subproject involving analysis and improvement of the total small farm unit.

Any research on traditional farming systems and farming households must be predicated on the assumption that traditional systems represent reasonable, rational organizations of the human, physical, and cultural resources available to the households. Traditional practices have evolved over the years in response to the ecological and socio-economic constraints faced by the families. Complex systems have developed in which people work so that plants and animals provide them subsistence and sometimes surplus. If traditional farming systems are to be modified so that they become more productive, if they are to provide a higher standard of living for rural populations, and if they are to produce surpluses for the larger population, it is essential that professionals understand the systems before attempting to introduce improved techniques. Furthermore, it is essential that research priorities correspond to the principal perceived problems confronting small farmers, that innovations be both effective and efficient given the agronomic and socio-economic constraints of the enterprise, and that any negative

consequences of these interventions be identified early so that appropriate modifications can be made. This also means that the entire organization of the farming system in which beans figure as an important crop must be monitored before, during, and after intervention. The person most able to monitor the farming system - the farmer - must participate actively. It is within this context that the GOE and USAID propose to conduct a subproject in beans.

Cornell University has an existing CRSP to undertake bean and cowpea research. Cornell is conducting the project using the above philosophy, and Cornell has considerable experience in Ecuador. Therefore, it appears like a perfect tie-in to utilize this centrally funded Title XII project to provide many of the inputs to the proposed subproject.

Objectives

In order to increase the income and nutritional well-being of small farmers, and the agricultural production availability of Ecuador as a whole, the subproject will seek to reverse the trend of production declines of beans and effect at least a 10% increase. Within the context of the entire farm unit, the subproject will seek (1) to conduct research to document bean plant growth and other essential characteristics of the plant, (2) to understand the role of beans within the agronomic and socio-economic aspects of farming systems and to identify the special problems of smallholders who produce beans, (3) to develop innovations in production techniques appropriate for such smallholders, and (4) to demonstrate and disseminate the innovations, and to provide for the complementary inputs and services necessary for small farmers to implement the new technologies.

Description and Budget

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 under the Bean/Cowpea CRSP. The team will carry out baseline studies of the two areas, concentrating on two aspects - the physical characteristics of the different varieties grown under different conditions, and the socio-economic aspects of the crops. The former will include a complete look at varieties, soils, pests, diseases, climatic conditions, planting times and patterns, and needs for fertilizers and pesticides. The latter will include 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. These studies will be set up in such a way that most of the reporting will be done by the small farmers themselves and that the data will be collected on a continuing basis so as to measure progress.

From these studies, a plan of research, testing, demonstration, and dissemination will be formulated. These activities will be carried out almost exclusively in the field, with only limited laboratory or experimental station work expected. MAG and INIAP are expected to cooperate closely in all steps, with Cornell providing the necessary TA.

It is expected that the Title XII CRSP will provide for the costs of a senior expert to come to Ecuador for one to two years. The CRSP will also provide for certain training and other costs. The Project (RTTS fund) is expected to pay for short-term TA by technicians at the graduate researcher level, for the computation costs of the baseline and follow-on studies, and for certain equipment, tools, materials, and local travel. A joint INIAP-Cornell-USAID team has estimated the costs of these items at approximately \$135,000. The GOE will provide personnel, research facilities, field vehicles, local travel for its personnel, and other support. The GOE contribution is estimated at being at least \$130,000.

8. Food Processing

Background

Ecuador has a poorly developed food processing capability. Until quite recently, both export crops and surpluses of domestic crops could traditionally be sold unprocessed at profits considered adequate by marketers, and processing facilities were not considered good investments. In the last decade, however, the demand situation has markedly changed. In Ecuador, the growing urban middle class consumer group has become increasingly sophisticated and is demanding more processed food products. To some degree, this demand must be filled by costly imports. In the export market, given rising costs of transport and given Ecuador's surplus labor situation, Ecuador has obtained a potential and in some cases an actual comparative advantage in processing such products as cacao, coffee, and fish. The percent of agricultural products exported in processed state has increased several-fold since 1972.

Ecuador's existing processing facilities are of two ownership types. First are mixed enterprises, with majority ownership resting with the GOE. These are usually involved in processing of milk, meat, and certain other products for domestic consumption. Most processing, however, is done by private firms. (USAID knows of no food processing done by cooperatives in Ecuador, though some rural women's groups may be involved in such endeavors as marmalade making.) The mixed enterprises are generally run more as political entities than as businesses and are typically extremely inefficient. The private firms generally do poor quality processing, use inappropriate packaging materials, and are run using the traditional business mentality of low volume with high per unit markup.

The advantages for farmers of increased processing are many. Processing creates expanded markets and allows for products to be sold throughout the year. If facilities are located in rural areas, they create off-

farm employment opportunities and reduce transport costs of the product from farm to market. Farmers almost always receive more for their product when that product is processed than when processing is not available.

There are other opportunities associated with processing which are not now taken advantage of in Ecuador. For crops which lend themselves to large scale processing and marketing, future contracts could be let between producers' groups and the processors, protecting both from price fluctuations. Processors could also make technical assistance, credit, and other services available to their producers, to the mutual benefit of both. For crops which lend themselves to small scale processing, the facilities could be owned by farmers themselves or their organizations, thus increasing farmers' incomes. Processing crops at the farm or near-farm level could allow farmers to withhold production until market prices improve, and could solve some of the transport problems which occur in Ecuador during the harvest (i.e., rainy) season. In short, if done properly, increased food processing could be a distinct boom to small farmers.

Objectives

Since both the GOE and USAID concur that most food processing should be in the hands of the private sector, and since a full-scale agro-industry project would have to involve considerable credit and long-term TA, the purpose of this subproject is modest - to increase the awareness of appropriate groups about new opportunities in Ecuador for food processing which could benefit the small farmer. These groups could include (1) representatives from business and industry associations of various sizes, (2) representatives from cooperative and farmers' groups, (3) MAG and Ministry of Social Welfare field workers who could promote small agroindustries among small farm families, (4) representatives from BNF, private banks, FODERUMA, and other financial organizations, (5) managers of the mixed enterprise firms, (6) representatives from local PVOs which could provide TA to emerging small rural enterprises, (7) technicians from INIAP and universities who do research on food processing of Ecuadorean products, and (8) representatives from the Ministry of Industry and Commerce.

Description

This subproject is not as well developed as the preceding seven. It is placed in this section mainly for two reasons. First, a recent visit to GOE institutions by professors from the Food Science Departments of Michigan State University (MSU) and Utah State University (USU) demonstrated the great amount of interest the GOE has in this area. Second, a substantial part of the costs of the subproject can be covered by a Title XII Strengthening Grant which the two institutions have and which they want to use for this purpose.

MSU and USU plan to sponsor a food science technology conference in 1981. They propose that, under the Strengthening Grant, representatives from

Ecuadorean institutions attend, to be followed by visits to various U.S. processing facilities.

USAID believes that an effective subproject, even one with objectives as limited as described above, must go beyond what MSU and USU are proposing. This is for two reasons. First, because of the large number of Ecuadorean institutions which should be involved, attendance of just a few representatives at a U.S. conference would not be enough to create the necessary awareness and transfer of technologies unless other steps are taken. Second, unless the conference is Ecuador-specific, it is likely that the technologies demonstrated would not be appropriate for Ecuador, particularly if emphasis on small farmers is to be maintained.

Obviously, continued discussions among the GOE, MSU/USU, and USAID are needed. But it is likely that this will turn into a joint subproject, part funded by the MSU/USU Strengthening Grant, and part from Project (RTTS Fund) funds. The likely subproject elements are as follows: (1) the RDS, along with the selected Ecuadorean lead institution for the subproject, will call a conference in Ecuador of all institutions which are or could be interested in the development of new agroindustries. (2) The conference will discuss the problems, opportunities, and appropriate technology levels of food processing - present and future-in Ecuador. At the conference the institutions will elect a working group to carry out the two following tasks. (3) The working group will carry out a series of studies on problems and opportunities in the sector, and when appropriate will conduct small demonstrations which small farmers or their organizations could adopt. (4) Representatives from the working group will attend the conference in the U.S. and visit U.S. processing facilities. (5) A follow-on conference in Ecuador will present the findings of the studies, demonstrations, U.S. conference, and observation visits, and will formulate a series of recommendations for future actions necessary by the various participating institutions if increased food processing in Ecuador is to be a reality. (6) The subproject will provide TA (probably from MSU and USU) for carrying out the above steps and for helping the participating institutions carry out the future actions. (7) The subproject will assist in providing an analytic and planning framework for a possible FY-1982 AID project for generating employment through agro-industries and small rural enterprises.

9. Other Subprojects

In addition to the eight subprojects described above, there are a number of other subproject ideas which are likely candidates for further development during the life of the Project. As with some of the eight subprojects already developed, the RTTS will be encouraged to seek financing from sources other than its own subproject fund.

One of these additional candidate subprojects is technical assistance on small farmer credit access. In Ecuador there has never been an effective mechanism to provide either production or investment credit to small farmers. Though at times the BNF has been well intentioned in this regard, its orientation and subsidized interest rates have brought pressures to bear on it to direct most of its lending to the largest landholders. FODERUMA is small and new, and its growing pains have included serious internal political and ideological conflicts. The cooperative system has been too small to have much

impact in this area, and it has been weakened by management and financial problems. Because of existing credit laws, the private banking system has had no incentive to enter into small farmer lending. A subproject involving a detailed study of the credit situation and recommended strategies on how best to expand and improve credit access to the small farmer, observation visits to other countries, trial and demonstration activities, and TA and training for participating institutions would be of great benefit to the sector. It is estimated that such a subproject would require approximately \$ 250,000 in Project funding.

Improved agrarian reform is also candidate subproject, IERAC has been unable to coordinate well with other institutions, and has rarely combined land distribution with essential services. Also, Ecuador's agrarian reform and land distribution policies are not effective in carrying out the objectives the GOE espouses. A useful subproject would include training (perhaps at the Land Tenure Center of the University of Wisconsin), studies on alternative models for Ecuador, trial demonstrations, and TA. It is estimated that such a subproject would require approximately \$ 400,000 in Project funding.

A third candidate subproject is research and demonstrations of forestry species. The little reforestation taking place in Ecuador, particularly in the Sierra, typically utilizes either eucalyptus or pine varieties. While these species are appropriate for certain environments, they do not do well in many of the semi-arid zones common in Ecuador. The subproject would test native species, particularly hardwoods, certain exotic species not now known in Ecuador, and some legumes such as leucaena which could have applicability for Ecuador. The subproject would provide TA and training, and would help with the costs of physical facilities, supplies, and materials. It is estimated that the subproject would require approximately \$ 475,000 in Project funding.

Another candidate subproject is research and demonstration on appropriate grain storage facilities. In much of Ecuador, low market prices at harvest time and poor condition of the roads during harvest season would argue that storage would have a high pay-off for the small and medium producer. Testing of low-cost facilities, with appropriate TA, would be the major expected subproject activity, along with training for ENAC personnel. It is estimated that the subproject would require approximately \$ 400,000 in Project funding.

A serious study on small farmer organizations (e. g., cooperatives, comunas, associations) is yet another candidate subproject. Such organizations are essential to get goods and services to large numbers of small farmers efficiently and to encourage widespread participation of small farmer in the development process. GOE efforts to assist the development of such organizations have been dispersed and relatively ineffective, and there is little knowledge within the GOE of what works and what does not. Also, certain GOE laws and policies which affect such organizations are archaic or even counter-productive. The subproject would provide TA, survey costs, observation visits, and funds for testing and demonstrations. It is estimated that the subproject would require approximately \$ 200,00 in Project funding.

Another subproject is research into the specific problems of Ecuador's ethnic minorities. While the unique problems of these groups are expected to be taken into account as part of the various individual subprojects, it could be of great benefit to the GOE's rural development institutions to carry out a specific subproject to define in detail the aspirations, customs, cultural barriers, and other cultural aspects unique to these peoples. Though the GOE formally refuses to admit to cultural differences within Ecuador, some other observers of Ecuadorean development have stated that the GOE's inability to reach Indian groups and blacks with its programs, because of cultural insensitivities and ignorance, is perhaps the greatest impediment to development of the small farm subsector. The subproject would provide TA, training, and research funds, and its findings would be tested in other on-going subprojects. It is estimated that the subproject would require approximately \$ 275,000 in Project funding.

The eighth subproject that has been identified for consideration is the establishment of a National Rural Training System to efficiently effect the transfer of appropriate knowledge to small farmers and to those who serve them. Specifically, the System will purport to: (1) establish rural training policies and effect coordination among all rural training institutions, (2) carry out research, adaptation, testing, and demonstration of appropriate nonformal and formal training techniques, (3) promote and emphasize campesino training in community organization, agricultural technologies, and entrepreneurial techniques, using methodologies which encourage widespread campesino participation and feedback, and (4) work with all rural sector institutions to assure that appropriate training of both field workers and small farmers is an integral part of all rural development projects. This activity is described more fully in the Integrated Rural Development - Agriculture Project Paper.

There are yet other subprojects identified in the PID which remain candidates for project funding. These are research on cacao fungus disease, the role of rural women, and small farm marketing systems. Together these three subprojects would require at least \$ 1.3 million in Project funding. All of these additional eight subprojects have been suggested by or discussed with the GOE and will likely be considered by the RTTS Executive Staff, together with the implementing institutions, during the Project's first year for later year funding.

III. PROJECT ANALYSES

A. Technical Feasibility

The essential questions regarding technical feasibility of the Project are: (1) Regarding the RTTS, is the System appropriate for Ecuador, and are arrangements and the organizational structure sound? (2) Regarding subprojects, are planning and implementation arrangements sound, and how will it be assured that levels of technology developed and disseminated will be appropriate for Ecuador and the small farm subsector? These questions are addressed in the following subsections.

1. Regarding the RTTS

The RTTS will be a part of the Rural Development Secretariat, and its structure will be as described in Section II.B. above. Concern might be raised that the structure is overly top-heavy. Though both the GOE and USAID are proponents of decentralization, all analyses to date of the rural development institutional structure indicate that its major weaknesses include lack of support and direction from the top, and lack of any coordinating mechanism. The multi-tiered RTTS structure is designed to provide the needed support, direction, planning capacity, and coordination ability at the top level, while having all activities carried out at the local level by the implementing institutions. The RTTS Executive Staff will provide the essential link between the levels, and it is expected that dialogue and feedback will flow both ways. After extensive discussions with consultants, BIFAD advisors, and representatives of CONADE, MAG, and various of the implementing institutions, USAID believes that the RTTS structure is appropriate and viable.

Probably the only major uncertainty about the System lies with the establishment of the RDS itself. Though all levels and factions of the GOE appear to support the establishment of the RDS, at the date of this writing the RDS has not been formally established, and it is uncertain whether it will be part of the Presidency or CONADE. (USAID believes that either arrangement would be satisfactory.) To assure the establishment of the RDS, and therefore of the RTTS, USAID proposes that the following conditions precedent be included in the Project Agreement:

(a) As a condition precedent to first disbursement of Project funds, that the RDS be formally established and that the RTTS be established as a part of it with an Executive Director named and on board.

(b) As a condition precedent to disbursements of Project funds other than for the chief-of-party long-term advisor, that the RTTS be staffed with an adequate number of project specialists in addition to the Executive Director, and that it have office space, equipment, and necessary support personnel.

2. Regarding Subprojects

It must be recognized that there is a traditional "middle-class" bias in Ecuador as far as technology is concerned. "Bigger" is traditionally "better", mechanization is always considered more appropriate than nonmechanization, and the highest possible degree and title are considered what is the most desirable for any job. The intent of the Project is not to go to the other extreme; however, one of the purposes of the Project is to identify, develop, and disseminate technologies which are appropriate for Ecuador's rural sector, particularly for small farmers. And as is obvious from the subproject descriptions above and the social analysis below, in many cases "bigger" might not be "better", mechanized techniques might not be the most appropriate given various conditions, and paraprofessionals might be more appropriate than more highly educated technicians for certain kinds of dissemination.

Building an appropriate technology mentality where it has not previously existed is not an easy undertaking. Though there is no way to definitely assure success, the Project has been designed to lead to the creation of such a mentality insofar as possible. The key to this is the subproject design process. Subprojects will be designed through a process jointly involving the implementing institutions, the RTTS project specialists, who themselves will be trained in the theories and practices of appropriate technology. These specialists, plus the long-term advisor, are expected to have considerable influence over the design details of the individual subprojects. Once designed, the subprojects will be reviewed by the RTTS Executive Committee for technical soundness. Since the chief-of-party long-term advisor plus USAID's Rural Development Officer will be in close contact with this Committee, it is expected that their influences will be important in assuring technical soundness. Finally, given that USAID will have final approval authority over subprojects, USAID will have ultimate say in assuring that subprojects are technically sound. In short, a system has been established whereby USAID, Title XII, and RTTS advisors will interact both formally and informally with implementing institutions at all stages - design, review, and approval. Through this interaction, combined with the training the personnel from the implementing institutions will receive as part of the subprojects, it is expected that the concepts and experiences of appropriate technology will be imparted. These will be reinforced by the actual research and demonstrations which will be done in the subprojects. It is the opinion, therefore, of both the GOE and USAID that the subproject selection and implementation arrangements are sound and will lead to the technology transfer and institutional strengthening objectives of the Project.

B. Economic Feasibility

Agriculture produces about 20% of Ecuador's GNP, a percentage expected to remain fairly steady after some years of decline. About half of the country's work force is primarily active in the sector. The land units contributing to agricultural production vary widely in size, from very small to extremely large. Some 67% of them are five hectares or less. The majority of these are located in mountainous areas and epitomize agricultural inefficiency. Yet small farms produce about 50% of the country's food crops.

Precise economic analyses of the individual subprojects have not been made, because of the still preliminary nature of the subprojects, because specific indicators of subproject success have not been spelled out, and because of lack of capacity on the part of GOE personnel. However, the areas of activities in which the Project will be directed are high return areas, and past experiences in Ecuador have shown high payoffs for resources directed toward these areas. For example, yield data from INIAP show that experimental yields of the country's 14 leading crops are four to seven times the national production averages. And target farmers usually receive lower yields even than the average. Therefore there are tremendous opportunities in Ecuador to increase agricultural production and small farmers' incomes. A rule of thumb in the U.S. is that before a variety or practice is recommended, it should promise a 10 to 15% advantage over the current variety or practice. All of the technologies to be developed and disseminated under the Project should promise advantages of several times that.

Past experiences in Ecuador show that investments in applied research activities have high pay-offs. INIAP consistently produces high benefits for the sector considering the relatively small amounts expended. Over the years it has released a number of varieties of major crops which have become the dominant varieties. Probably its greatest success was research on sigatoka disease, which threatened to destroy Ecuador's then fledgling banana industry. The resulting solution developed with the assistance of Point IV advisors, was so successful that Ecuador went on to become the world's leading banana exporter, producing in the process thousands of jobs and considerable needed foreign exchange.

The pay-offs from research combined with effective extension and education are multiple. Increased production means not only increased incomes for the small farmer but also more food available for the consumer. Ecuador is currently importing substantial quantities of wheat (almost \$50 million a year), milk, rice, lentils, and several other basic foodstuffs. A favorable foreign exchange situation has made for complacency in this regard. However, oil exports - the main source of foreign exchange - are projected to end during the 1980's. If this turns out to be the case, it is not too strong to say that Ecuador will face severe economic and nutritional crises unless production of domestic food crops increases substantially and production of export crops increases enough so that the country will have sufficient foreign exchange to purchase those crops for which it does not have a competitive advantage. The various subprojects are designed to effect such increases in production on those crops produced by small farmers.

There should also be a high return from protecting watersheds and conserving soils. Even with ever increasing discount rates used in economic analysis, the small investments made in protecting the environment have high returns spread over a long period, particularly when compared with the disastrous results of not making such investments.

AID nutrition projects in various countries demonstrate a high return when low-cost interventions improve the nutritional status of populations with high degrees of malnutrition. Statistics from Ecuador's National Nutrition Institute indicate that 40% of the population under five years of age are malnourished, and that there is a 43% deficit of protein and 14% of calories in the diet as a whole. There is considerable room in Ecuador for high return activities in substitution of more nutritious food over less nutritious ones, and in other similar interventions.

Ecuador has a rapid rural to urban migration rate, with urban areas growing at approximately 5% per year. Urban areas have serious problems in trying to cope with providing necessary services to such a rapidly growing population. Experiences elsewhere demonstrate the economic viability of strategies which productively keep people in rural areas rather than encouraging them to migrate.

Finally, the training of personnel working in development activities has repeatedly been shown to be a cost-effective way of disseminating new technologies and development strategies. The PPs for both the LA Regional and the Ecuador Training for Development Projects analyze this.

So, though specific cost-benefit and internal rate of return data will not be available until the time the subprojects are finalized, the Project is focused directly on the major problem areas of the Ecuadorean economy and society, the areas which also have high potential pay-offs. Therefore, the GOE and USAID conclude that the Project is economically a good investment for both. Training of the RTTS Executive Staff in economic analysis is expected to be part of the TA given by the lead university, and each subproject is expected to be analyzed as economically sound before being approved by the RTTS Executive Committee and Advisory Board.

As to whether the Project is cost-effective, the lead university concept seems to be the most practical, efficient, and effective manner to provide the needed TA and training services, as will be examined in more detail in Section D. below. Furthermore, utilizing only a small RTTS staff, with all the rest of the Project activities carried out by existing institutions, cuts down on "brick and mortar" costs and builds on existing institutional capacity. The Project has been designed to be as lean, efficient, and practical as possible while still fulfilling its purposes.

C. Social Soundness Analysis

1. Existing Situation

In mid-1979 an AID sponsored team of a contracted anthropologist, a contracted sociologist, and an agricultural planner from MAG undertook an extensive field study to determine the state of technology and its relationship to society in two typical Sierra small farm areas. One area was primarily mestizo (Nabón, Azuay), while the other was almost entirely Indian (Columbe, Chimborazo).

The study found that the level of technology used was extremely low, much lower than anticipated. Of several dozen small farmers interviewed in both areas, not one was aware of soil analysis, 93% were not familiar with fertilizer use, and 90% did not know about the use of insecticides. Knowledge of disease control for animals was almost nonexistent; at best several campesinos said they feed sick animals an herbal tea. In both areas poor land use combined with a persistent drought was causing severe soil erosion and decreased agricultural productivity.

There are a number of factors contributing to the adverse findings of the study team. A major one is the small size of land holdings, which are becoming even smaller as holdings continue to be divided among family members who remain in agriculture by choice or necessity. In Nabón for example, 37.7% of the holdings are one hectare or less in size (averaging slightly less than one half hectare), 23.4% range from one to two hectares (averaging 1.33 ha.), 27.0% range from two up to five hectares (averaging 2.95 ha.), and 8.6% range from five up to eight hectares. Only 3.3% of the holdings are over eight hectares, and these average only 9.4 hectares each. In Columbe, the situation is only slightly better. Obviously such small land holdings are a major factor in keeping the farmers in conditions of near-subsistence, subsistence, or less than subsistence. They also contribute to Ecuador's large migration problem (with resulting strains on family, community, and ethnic unity), and to further land pressures and environmental deterioration. Other important structural constraints include a general lack of credit for the small farmer, difficult physical access to most small farm communities, a lack of an efficient marketing structure for the small farmer, and lack of adequate educational, health, and other social and physical services.

Even given these serious constraints, the extremely low level of productivity of the small farm unit implies that there is considerable opportunity for increased production. And certain experiences in Ecuador have shown that improvement in technology levels, with minimum investments in infrastructure, can have a positive benefit/cost impact on small farmer productivity.

Why, then, have successful broad efforts not been made to reach small farmers with appropriate technologies which could readily increase their productivity and real incomes? The answer is complex, involving many institutional, technological, and social factors; but basically it boils down to a lack of focus on and understanding of small farm problems by the public sector institutions. It appears that these institutions have been unable to find the technological and social mix appropriate for dealing with small farmers. The following examples demonstrate the scope and extent of this problem:

a) INIAP has spent considerable resources developing high yielding varieties of soft corn (principally a small farm crop). While the traditional highland corn in Ecuador has thick stalks, many leaves, and a fairly low yield of ears, INIAP's varieties are thin-stalked, almost leafless, and high yielding. Yet campesinos have rejected them because (i) the stalks are not strong enough to support bean vines, and the maturation period of these corn varieties does not coincide with that of the bean varieties grown (Beans and corn are always grown together, with the beans supplying the soil with much of the nitrogen the corn removes; only large haciendas can afford chemical nitrogen fertilizers); and (ii) without leaves the stalks are almost useless for animal feed, which is an important function of corn production in the campesino's agricultural economy. So, INIAP's varieties have only proven appropriate for the few highland haciendas that grow corn on a large scale.

b) Most of the barley in the Nabón area has been wiped out by a type of rust. The regional development authority for the area (CREA) has rust resistant seeds available. CREA, however, insists on selling the seed by the quintal, a quantity much too large for individual farmers. Since the small farmers are not organized for quantity buying and distribution to individuals, such seed is not purchased. The result is that farmers have given up planting barley, formerly the area's major crop.

c) In Nabón a MAG representative is trying to introduce improved varieties of seed for several crops. However, MAG insists that participants must destroy seeds of previously planted varieties of the same cultigen in order to have access to the improved varieties. The small farmer, who has nothing to fall back on should such an experiment fail, is reluctant to participate in such a program. MAG, therefore, works only with the four largest landholders in the area.

d) A MAG extension agent in Nabón proposed a project for cultivating chochos among small farmers of the area. Chucho is a high protein legume which grows easily in dry poor soil. The campesinos of the area expressed great interest in the project, particularly because it could improve their own nutrition. MAG's zonal office, however, rejected the agent's request to plant a few demonstration plots with chochos because it could not envision market possibilities for that crop. Improvement of the campesino families' nutrition apparently was not considered.

e) Small farmers traditionally keep cuyes (guinea pigs) in their homes, where the cuyes live in the cooking area and eat grass and scraps. In the Quimiag-Penipe PIDA, MAG agents set up a demonstration in which cuyes were kept in cages, with two adults per cage, similar to the way rabbits are raised. They were also fed a "scientific" balanced diet. Within a few weeks 50% of the animals died. It appears that with only two in a cage the cuyes could not maintain sufficient body heat to live, in contrast to living en masse in the kitchen. Furthermore, it now appears that cuyes do as well or better on their traditional diet as on the "scientific" one.

f) In Imbabura MAG held a course in pigkeeping. MAG invited only adult males to the course, though it is women and children who always take care of the pigs in Imbabura. The technology that the men learned either was not passed on to the women or was not accepted by the women, as it has never been adopted.

In each of these cases, an insensitivity to local cultural conditions and social mores was demonstrated. In addition, a knowledge of technologies appropriate for small farmers was missing. Obviously both elements appropriate technologies and cultural sensitivity - are necessary if failure such as these are to be avoided.

The study team and other observers have identified several elements which are sine qua non's in assuring that culturally as well as technologically appropriate services reach Ecuadorean small farmers. At the top of the list is an effective extension network geared to the small farmer. (Currently little extension is directed to the small farmer. In Columbe, for example, only one agent, a social promoter with little technical training, serves an area with a rural population of over 15,500.) This would include the need for cultural and perhaps language training, proper logistic support use of appropriate delivery methods, and the use of local paraprofessionals in direct dealings with campesinos. Also important is research into appropriate technology for small farmers, with a strong linkage between such research and the extension network. Equally important is appropriate training and education dealing with the problems and realities of small farmers; such training should be for persons at all levels, from young campesinos themselves through the paraprofessionals, mid-level technicians, and highly trained professionals who deal with small farmers and/or their problems. Other critical elements are a data base for understanding the small farmer situation, and policies which favor small farmers and encourage agricultural production. Finally, and fundamental to the entire process, is a way for small farmers to participate in the development process affecting them and to be organized so as to receive goods and services and to market production in efficient ways.

2. Impact of Project

The proposed Project is designed to provide the essentials described in the preceding paragraph. The subprojects selected as potential candidates have been designed to address the specific extension, research, educational, organizational, and policy needs of the small farmer

in a technically and socially appropriate way. Furthermore, the subproject selection criteria have been designed to favor those subprojects which are most focussed on the problems of the target group, and on the most disadvantaged subgroups.

The target group for all subprojects will be the small farmer, generally defined as a family unit having access to no more than five hectares of agriculturally usable land (with perhaps higher limits in certain ecological zones). The small farmer situation has been described in a number of other USAID documents, including the CDSS and the PID for this Project, and in Section I above.

The population of Ecuador is quite heterogeneous, and there exist significant social and cultural differences. About half of the rural Sierra population are Indians in various degrees of integration with the Spanish-speaking society. The Indian communities vary widely among themselves as to community cohesiveness, cultural pride, language use, and cultural beliefs, and they vary enormously with the mestizo society. There are also significant cultural differences within the dominant mestizo society, particularly in regard to adherence to patrón-peón relationships and to acceptance of and reliance on community organization. There are small distinct Indian groups on the Coast (e.g., Cayapas, Colorados, Coiquers) and in the Oriente (e.g., Shuars, Yumbos), as well as highland Indian settlers in those areas. There are groups of blacks heavily concentrated in Esmeraldas Province on the Coast, as well as in certain Sierra pockets. Both the black and the Indian groups are discriminated against by the dominant society, and all have distinct characteristics which often makes standard public sector assistance ineffective when directed toward them.

A further difference is that of women versus men. Each ethnic group has established rather well-defined roles for its women. Often these involve decision making or economic activities which are crucial to the family unit. Yet these roles are often poorly understood by the institutions which provide services and assistance to the small farmer, and such services are therefore often misdirected.

In short, Ecuador is a patchwork of fundamental cultural differences which have a distinct bearing on the development process. Yet official GOE policy has not been sensitive to such differences; census statistics, for example, do not give ethnic breakdowns, and languages other than Spanish are disparaged. With the new Government, such differences are beginning to be recognized. The Vice President has publically met several times with Indian leaders, and the President spoke for several minutes in Quechua in his inaugural address. The Minister of Social Welfare is a woman, and several GOE offices are being established or restructured to deal specifically with women's problems. Many public sector institutions appear to be more sensitive to the cultural issues.

Given this apparently more favorable atmosphere within the GOE, the social considerations for the success of this Project boil down to two project-specific questions: How will it be assured that subprojects will actually be directed to the small farm target group?; and how will it be assured that subprojects are socially/culturally appropriate and effective and will have no adverse social impacts?

The first question is the easier to answer. The subproject selection criteria and procedures will assure that only those subprojects are selected which impact on the target group. In many instances, the impacts may be indirect. For example, the Catholic University of Guayaquil Subproject will train persons, including parish priests, to deal effectively with small farmers. The Agricultural Policy and Statistics Subproject has been designed so as to enable the GOE to improve its understanding of the situation of the small producer. Research subprojects will be selected only for crops which are primarily produced by small farmers. This is not to say that the RDS should not address itself to the problems of dairy production, sugar, bananas, African palm, and other products which typically are the realm of medium or large producers; but the RTTS Fund, supported by AID inputs and governed by the subproject selection criteria, shall have as its focus the problems of the small producer.

As to assuring that each subproject will use socially and culturally appropriate inputs and will avoid adverse social impacts, there is no easy answer. Obviously each subproject must be handled on a case by case basis. A subproject which aspires to establish a national intervention must contain some mechanism to allow the standard intervention to be modified as appropriate under varying local conditions. On the other hand, a crop-specific, area-specific, or subgroup-specific (e.g., women) subproject must incorporate during its design stage a thorough analysis of the social factors which may affect the success of the proposed intervention. The only way to assure cultural appropriateness in such diverse cases is to insist that each subproject proposal include a target group and social analysis. This will be an absolute prerequisite before any subproject can be approved by the RTTS Executive Committee. With USAID and the lead university having responsibility to monitor subproject selection during the life of the Project (including the requirement of USAID approval of individual subprojects), it is expected that insistence on subproject social soundness analysis will institutionalize this within the RDS as part of its design process.

The RTTS Executive Staff will take responsibility for helping the participating institutions find the appropriate persons to carry out the analysis when the institutions do not have the internal capacity to do so. Fortunately Ecuador is a well-studied country, and there is a fairly large qualified to provide the necessary assistance.

D. Administrative Feasibility

An issue was raised in the DAEG guidance cable, based on the PID review, as to why the RTTS was being placed at a high centralized level (i.e., in the RDS) rather than at the sectoral level (i.e., MAG). The cable also asked for description of the RDS and how it would relate to working level entities. These questions will be discussed in this section, in relation to the overall strengths and weaknesses of Ecuador's research, extension and education system.

The Title XII Baseline Study, as well as other studies, have pointed out the weaknesses of Ecuador's rural sector institutional structure, particularly in regard to the research, extension and education functions. The problems of numerous overlapping and uncoordinated institutions, inadequately trained personnel, and lack of top level direction and support have all been identified and documented. There are two basic alternative approaches which could be used to address these problems. One would be to strengthen the various institutions at the local level try to establish local level coordination mechanisms, and basically not worry much about the top level. The other would be to build strong institutional top-level support. (Obviously each alternative would involve some of the other but they represent the two basic alternative approaches.)

The GOE and USAID have both chosen emphasizing strong top-level support. There are several reasons for this. First, since the various institutions operate virtually autonomously and all have their political constituencies, it is often necessary to use considerable influence and persuasion to effect interinstitutional cooperation; only a top-level institution is likely able to do this. Secondly, the GOE is beginning to realize that rural development goes beyond the traditional MAG associated institutions and must involve the Ministry of Health, the Ministry of Public Works, the Ministry of Education, the Central Bank (e.g., FODERUMA), INEC, and other such entities. Only an institution above any are functional ministry can effectively coordinate the activities of these organizations. Third, the GOE is eager to put into effect its National Development Plan. It will take a highlevel entity to coordinate institutional actions to make sure they work together to carry out the Plan's objectives. And fourth, Ecuador's management orientation is traditionally one of top-down; and effective project management calls for recognizing this reality. So, for all these reasons, the Project, while actually supporting implementation activities at the participating agency and field office levels, will have its decision-making, management, and coordination activities at a top level. And these same four reasons also argue for placing the RTTS at the supra-cabinet level (the RDS), rather than at the cabinet level (MAG).

CONADE is the institution charged by the Constitution to plan and oversee the country's development. Though the implementing legislation to formally establish CONADE has not passed the GOE Congress, CONADE has in fact existed for some nine months now as part of the Vice-President's Office, and it is considered as legally established under the new Constitution. It has people detailed to it from various ministries and other institutions, plus it has several experts hired from outside government through the Vice-President's budget. CONADE prepared the National Development Plan and currently is preparing implementation plans for specific projects. CONADE is divided into sectoral groups, and its Rural Development Section is one of the strongest. Its chief is a dynamic and experienced agricultural development expert from outside government with extensive IICA experience, and its staff consists of about a score of technicians from various GOE rural sector institutions, particularly from the Rural Development Planning Unit (UDER), of the former National Planning Junta (JUNAPLA).

It was originally contemplated by the GOE that the RDS be part of CONADE. Recently, however, there has been some consideration given by top officials toward placing the RDS in the Presidency. There are several arguments for this. Principally, the proponents consider it wise to separate the overall planning arm from the arm which works with implementing institutions on detailed plans and on implementation-analogous to the division in most USAID missions between the Program and Capital Development offices. They also point to the way the GOE Executive Branch is evolving, with the Vice-President increasingly in charge of planning and the President in charge of the implementation of the GOE's key priority programs. USAID has discussed both alternatives at length with high GOE officials and has come to the conclusion that either will be acceptable for Project success. If the RDS is placed in CONADE, it will have both planning and operating divisions, with the RTTS being one of the latter; if it is placed in the Presidency, it is expected to have a close working relationship with the planning people at CONADE. In either case, it is expected to have the necessary political and financial clout to carry out what it is expected to do.

If the RLS is part of the Presidency, it is expected to have three operating divisions, reflecting the three priority action-type activities the National Development Plan contemplates the GOE undertaking in the sector. One is the RTTS, with the structure described in Section II.B., a professional staff of four, several clerical and support personnel, and management of the RTTS Fund. Parallel will be a similar unit for carrying out integrated rural development (IRD) projects, with a similar sized permanent staff and an IRD fund. The third will be a unit to coordinate the GOE's National Rural Training Program. The RDS will also have a top level management staff of approximately two professionals, who will coordinate with CONADE, the ministries, and other organizations at the top levels. If the RDS is part of CONADE, the same three operating divisions will exist, as well as a planning division, which will essentially be the same as CONADE's current Rural Development Section.

The development of this Project demonstrated the ability of a top-level organization (CONADE) to effect interinstitutional cooperation. It also showed the commitment of the GOE to undertake the Project. USAID requested from CONADE the full-time detail of agricultural specialists from the principal participating institutions. With great efficiency CONADE formed a committee composed of qualified professional personnel from itself, MAG, BNF, INERHI, IERAC, INIAP, and universities. The committee worked full-time and effectively, both as a whole and when breaking into subcommittees to work with foreign consultants on the design of individual subprojects. The same committee has continued in operation to develop AID's IRD Project. In short, this experience has shown that an interinstitutional structure using a supra-cabinet level entity as leader and coordinator can bring effective results.

Finally, the RTTS structure builds on the strengths of Ecuador's rural development research/extension/education system, while addressing its weaknesses. All rural development organizations will be eligible to participate in the RTTS - not just MAG and its autonomous institutions, but also the other ministries, the universities and technical schools, the regional development authorities, and the private sector. The RTTS is organized to provide a focal point to which the whole array of Ecuadorean rural development institutions can turn for foreign TA and similar support. Obviously, though, some institutions are stronger than others, and the array of needs varies greatly. The administrative structure - of a high-level organization which nonetheless has a working-level staff accessible to and expected to work closely with the implementing institutions - was designed to provide a technical and objective means for defining TA and training needs, prioritizing them, and working on correcting the institutional deficiencies.

In summary, the Project's administrative arrangements have been designed to be sound, feasible, and as effective as possible considering the Ecuadorean realities. Though the RDS has not yet been formally established, USAID believes that a condition precedent to establish the RDS before Project funds are disbursed will be effective in assisting its quick establishment. From the positive experience during Project design, and the GOE's demonstrated commitment to the Project, USAID believes that the best means for assuring Project administrative success is prompt Project approval, thus building on the momentum and working arrangements established so far.

E. Environmental Impact

An initial Environmental Examination was prepared as part of the Project's PID, and a Negative Determination was granted as requested. This was based on (1) the ICI nature of the Project, and (2) the expectation, based on a first look at potential subprojects, that the Project would have little if any negative environmental impacts while having the potential for significant positive impacts. More extensive subproject development during intensive review has confirmed the latter.

Ecuador's alarming environmental degradation is described in the CDSS and in other documents. Problems include severe soil loss, watershed deterioration, and desertification, all caused by rapid deforestation, overgrazing, and improper agricultural practices. They also include near extinction of animal and plant species, poor water quality and worsening air quality, considerable litter, and high urban noise levels. With a variety of ecosystems, many of them tropical, semi-arid, or otherwise fragile, Ecuador cannot afford to continue to destroy or put such pressures on its environment without tragic future consequences. Yet little attention is paid in Ecuador to environmental considerations. Project proposals and activities as a rule emphasize short-term production and do not concern themselves with environmental protection. GOE field level personnel either are ignorant about the environment or feel so helpless that they disregard what is going on. Short-term agreed commonly outweighs any long-term considerations, even when there are enlightened laws in effect.

The proposed Project cannot expect to solve Ecuador's environmental problems. But a number of the subprojects are designed to specifically address some of the problem's components, and can be expected to have a positive beneficial impact on the situation. Specifically, the Soil and Water Conservation and Management Subproject will conduct research to determine the conservation practices most applicable for correcting serious erosion problems. These practices will be made part of extension/training packages to be tested on small farms and disseminated to small farmers. Some of the practices recommended are expected to be controlled grazing, reforestation and revegetation, terracing, strip cropping, and planted water diversion channels.

The Small Farmer Adaptive Research and Development Subproject will include research, testing, and demonstrations on the best crops and practices for small farms under various conditions. It is expected that as part of this effort the proper use of fertilizers and pesticides will be demonstrated. This may have the effect of increasing the net use of these inputs by small farmers. More significantly, however, it is expected to help stem the widespread and growing misuse of these chemicals.

The 4-F and other subprojects with significant training components are expected to include environmental training. This will range from proper land use to respect for the environment in general.

A detailed review of each of the subprojects developed to date reveals considerable potential for beneficial environmental impact while revealing no identifiable negative impacts. However, the long-term TA consultants will be expected to make environment one of their principal concerns. And USAID will take environmental soundness into account when reviewing individual subprojects for approval.

One final point is that it is expected that some of the subprojects may finance pesticides and fertilizers with AID funds. These would be procured under AID Regulations, taking into account that they would be used for research and experimentation under tightly controlled conditions.

F. Financial Analysis and Plan

1. The RTTS Fund

The fundamental financial mechanism of the Project will be the RTTS Fund, the establishment of which is a major Project objective. In order to establish the Fund, the GOE budget will have to note an allocation of AID project funds to the RTTS. In effect, a budget account for the exclusive purpose of furthering the transfer of technology appropriate for the rural sector will be established. This budget process will become recognized as a legitimate need for a priority purpose during the implementation of the Project as both AID and GOE funds are allocated. Through this process, GOE resources will continue to be allocated to the RTTS even after final disbursement of AID funds.

The Fund, will be managed by the RTTS and will be responsible for subproject financing. Each subproject will have at least two financial components: the amount to be financed from the RTTS Fund, and the counterpart contribution from the implementing agency or agencies. As shown in the subproject descriptions, the latter will typically amount to as much as or more than the RTTS Fund contribution.

The AID contribution will assist in the establishment of the RTTS (see Section II.B.7.) and the RTTS Fund. USAID will allocate Project funds based on semi-annual projections of needs, prepared by the RTTS Executive Committee and approved by the RTTS Advisory Board. Many of the actual disbursements will be made directly by AID to U. S. universities and suppliers and will be charged to the Fund, rather than the disbursements being made in cash. (See Part 4. below).

The GOE's counterpart contribution to the Project will be of three types. First, the GOE will provide staff support personnel, office space, and operating expenses for the RTTS. Secondly, as mentioned above, each subproject undertaken will have its counterpart component, which will be the responsibility of the participating institution(s) to provide. And third, the GOE will be expected to make a contribution to the RTTS Fund so that it will survive and prosper after the termination of AID assistance. This third aspect of the counterpart contribution, however, must not be allowed to become overburdening to the GOE, since even without it the GOE contribution to the Project is over 50%. So, for the first two years of the Project, the GOE will not be required to match AID funds in building the RTTS Fund. To encourage the GOE to begin contribution to the Fund, a covenant will be placed in the Project Agreement that the GOE must allocate to the RTTS Fund beginning the third year an amount acceptable to AID. This is estimated for the Project's third year as the equivalent to 10% of what AID contributes to the RTTS Fund, for the fourth year as 25% of the AID contribution, for the fifth year 50%.

The GOE will be encouraged to look for other sources of financing for the Fund. These could be of two types. One would be contributions from multilateral or other external sources to help build up the Fund so that additional subprojects could be undertaken. The other would be assistance in financing specific subprojects. As indicated earlier, assistance can likely be obtained from Title XII CRSP, from AID centrally-funded or regional projects, from Title XII strengthening grants, Peace Corps, from the international research institutions, and from other sources.

2. AID Financing

As indicated in Table 1 in Section II.B.7., AID will provide one million over the life of Project toward the establishment of the RTTS. About 90% of this amount will go directly to the lead university for TA and training services and for local travel support for its TA personnel. The remainder of the funds will go for equipment and vehicles and for studies and evaluations; some or all of the latter is expected to be subcontracted for by the lead university.

The remainder of the AID funds, \$ 4.3 million, will go to the RTTS Fund to support the carrying out of subprojects. The DAEC guidance cable requested a complete list of the first year's subprojects. Actually, though several subprojects are virtually ready for implementation and are considered of high priority by the GOE, USAID is reluctant to commit itself and the GOE in this PP to undertaking specific subprojects. For institution-building reasons, it believes strongly that the final decision for subproject selection should rest with the RTTS. Adequate Project management will be provided by the requirement that the RTTS will have to provide an implementation plan of the following year's subproject activities for USAID's approval prior to disbursement of AID funds for the RTTS Fund, for both the first as well as subsequent Project years.

Nonetheless, a likely scenario can be assumed on which a projected financial plan can be based. From extensive discussions with the GOE, it is likely that the first three subprojects listed in Section II.C. (Soil and Water Conservation and Management - SWCM, Small Farmer Adaptive Research and Development - SFARD, and Catholic University of Guayaquil - CUG) will be initiated during the first year of the Project, which begins the very end of AID's FY 1980 and goes through FY 1981. In addition, one of the next three subprojects (Agricultural Training for Rural Youth, Agricultural Policy and Statistics, and Expanded Soybean Production and Utilization) is expected to be started up in the first year. Also, one of the three subprojects for which substantial non-RTTS funding will be required and for which only modest amounts will be needed from the RTTS Fund (Bean Research, Food Processing, and National Rural Training System) is also expected to get underway during FY 1981. It is expected that \$1 million in Project funds will be available during the first year of the Project (AID FYs 1980 and 81). Making some assumptions as to which subprojects the RTTS actually selects, the first year expenditures are expected to be as follows:

Toward Establishment of RTTS	\$ 210,000
SWCM	147,000
SFARD	218,500
CUG	146,000
4-F	125,000
Bean Research or National Training System	75,500
Forward Funding Needs and Other	<u>78,000</u>
Total	\$ 1,000,000

In subsequent Project years, subprojects previously started will continue, while new subprojects will start up. Also, a relatively small amount of funds (\$386,000) is being programmed for other small subproject needs which may arise during Project implementation and require rapid response. For example, a particular MAG division may need some training for its personnel which Title XII institutions can best provide. With just the first eight subprojects listed in Section II.C. plus this additional amount for other subproject activities totalling in RTTS contributions at least as much as the \$4.3 million AID will be contributing to the Fund, there is no question about there being sufficient demand for subproject funds.

3. Summary Budgets, and Discussion of GOE Counterpart

Assuming that the array of subprojects selected is equal to the first eight listed in Section II.C., the projected Project budget would be as shown on the following page.

	<u>AID</u>	<u>GOE</u>
RTTS	\$ 1,000,000	\$ 750,000
SWCM	617,000	1,335,000
SFARD	1,143,000	3,157,500
CUG	447,000	588,000
4-F	342,000	907,000
Agricultural Policy and Statistics	492,000	500,000
Soybeans	581,000	580,000
Beans	135,000	135,000
Food Processing	157,000	147,500
Other subprojects	<u>386,000</u>	<u>100,000</u>
	\$ 5,300,000	\$8,200,000

Actually, these figures may be somewhat distorted since all sub-projects were calculated as starting in the first Project year. With some subprojects starting later, inflation may increase their costs. However, in order to finance some of the later starting subprojects within the life of Project period, their implementation periods may have to be shortened or certain items forward funded, thus having an opposite effect. But in general, the above list provides a good estimate of the activities to be undertaken under the Project.

Given funding of the above activities, the following are the line items for which AID funds will be spent:

Long-term TA	\$ 962,500
Short-term TA	1,077,000
Training (at all levels, including observation visits and farmer training)	1,623,300
Equipment, Materials, and Vehicles	726,800
Studies and evaluations	197,100
Per Diem and Local Travel Support	54,000
Other	50,000
Inflation and Contingencies	<u>609,300</u>
	\$ 5,300,000

Of the above it is estimated that \$ 4.4 million will be foreign exchange costs, while \$ 900,000 will be local currency costs (mainly in-country training, some locally purchased materials, some locally contracted studies, per diem and local travel support, and some local construction and other services).

SUMMARY COMMITMENT/DISBURSEMENT SCHEDULE
 FY 1980 TO FY 1981
 (\$000)

Project Components	Total AID/GOE	FY 80		FY 81		FY 82		FY 83		FY 84		FY 85	
		AID	GOE	AID	GOE	AID	GOE	AID	GOE	AID	GOE	AID	GOE
1. RTTS	1,750.0	300	200	140	110	140	110	140	110	140	110	140	110
2. Subprojects:													
2.1 SWCM	1,952.0	-	-	140	540	100	310	120	200	117	150	140	145
2.2 SFARD	4,300.5	-	-	210	500	105	675	278	650	275	650	275	682.5
2.3 CUG	1,035.0	-	-	210	197	105	150	52	100	50	80	30	61
2.4 4-F	1,249.0	-	-	-	-	125	150	75	260	72	25	70	247
2.5 Ag. Pol. & Statistics	942.0	-	-	-	-	175	65	110	145	105	145	102	145
2.6 Soybeans	1,161.0	-	-	-	-	200	50	180	205	126	205	125	120
2.7 Beans	270.0	-	-	-	-	50	50	35	35	30	25	20	25
2.8 Food Processing	304.5	-	-	-	-	-	-	60	115	57	25	40	7.5
2.9 Other Sub-Projects	486.0	-	-	-	-	-	-	200	30	128	60	58	10
3. Total	13,560.0	300.0	200.0	700.0	1347.0	1,000.0	1,550	1200.0	1850.0	1100.0	1700.0	1000.0	1553.0

The AID funds are expected to be obligated as follows:

FY 1980	\$ 400,000
FY 1981	600,000
FY 1982	1,000,000
FY 1983	1,200,000
FY 1984	1,100,000
FY 1985	<u>1,000,000</u>
	\$ 5,300,000

As was shown in Part 2 above, the \$ 1 million of obligations during FYs 1980 and 1981, equivalent essentially to the Project's first year, will be sufficient to get the Project underway. The larger obligations during FYs 1982 through 1985 are necessary because new subprojects will be starting while all the previous ones will be continuing. By FY 1984 some subprojects will be phasing out; furthermore, the GOE by then will be making contributions to the RTTS Fund, enabling it to expand in size and take on new subprojects.

As indicated above, the GOE counterpart contribution, as far as its support for the RTTS and for subprojects is concerned, will total approximately \$ 8.2 million. (Actually, in some of the subprojects, counterpart will come from private institutions rather than from the GOE, as in the case of CUG). In addition, also as indicated earlier, starting in CY 1983, the GOE will begin to make contributions to the RTTS Fund. In 1983 this is expected to be about \$ 100,000, in 1984 \$ 250,000, and in 1985 \$ 450,000. So, total GOE counterpart contribution during the life of the Project is expected to total approximately \$ 9 million.

For its Integrated Rural Development 17, USAID intends to do a rather detailed analysis on counterpart availabilities. For this Project, however, USAID does not believe that counterpart will be a major problem for two reasons. First, the amounts involved are relatively small and are spread over six GOE budget years and over a number of agencies. In addition, a portion of the counterpart represents items currently being financed by the GOE which will be channeled from other uses to the Project.

MAG and its associated rural development agencies have over the past several years received about 8% of the GOE budget (combining both capital investment and current account funds). This for 1980 will amount to some \$ 80 million. MAG's share is usually about 40% of the rural development total, with IERAC, INERHI, and INIAP getting the next biggest shares (together totalling another 35%). In addition, agricultural education is funded from the Ministry of Education's budget. And a number of the institutions involved in potential subprojects are funded out of other budgets (e.g., INEC, CUG). In short, even in the Project's peak year the counterpart contribution is not expected to exceed \$ 2.5 million, which will represent no more than 2% (and probably closer to 1%) of the budgets of the institutions participating in the Projects - a small price they appear willing to pay for undertaking activities they consider of highest priority.

A final reason that counterpart is not expected to pose a problem for the Project is that the budget for each subproject will have to be firmly established, with written commitments from participating institutions, before it can get underway. No subproject will be approved if there is any question about any funding source. In summary, though counterpart may be a problem for other projects involving larger cash contributions on the part of the GOE, it is not expected to be a significant problem in this Project.

4. Disbursement Mechanisms

The disbursement procedures for the Project are expected to be straight-forward. A large share of the funds are expected to be reimbursed to the lead university for both its services and those it will subcontract for. The lead university will bill AID monthly, breaking down the bill not only by line item but also by activity - that is, identifying what expenditures were for establishing the RTTS and what were for each of the on-going sub-projects. AID will likely establish a small advance account for the lead university, in accordance with AID regulations, against which the reimbursements will be charged (and the advance replenished).

Most of the imported goods to be purchased (e.g., equipment, vehicles) will likely be procured directly for the Project by USAID, using lists established by the RTTS Executive Staff with the assistance of the lead university. These purchases will be charged against the appropriate Project Component. The contract with the lead university may provide for procurement of certain goods such as office supplies and equipment. The extent to which the lead university will procure goods for the Project will be reviewed during contract negotiations.

Funds for local expenditures will be disbursed on a reimbursement basis (with advances possible) to the RTTS. Accounts will be separated by subproject and component. The RTTS will draw up an expenditure projection for the following two months each time it submits its voucher for the previous month's expenditures. In this way, an efficient method for disbursing local currency funds can be established, with advances kept to a minimum.

IV. IMPLEMENTATION

A. Project Schedule

The initial steps in getting the Project underway, with respective target dates, are as follows:

Project authorized	July 31, 1980
Project Agreement signed	August 29, 1980
Requests for Proposals mailed	September 30, 1980
RTTS established and Director on-board	September 30, 1980
Contract signed with lead University	March 31, 1981
RTTS Executive Staff on board	January 5, 1981
Long-term chief-of-party TA advisor arrives	May 30, 1981
RTTS Advisory Board inaugural meeting	February 15, 1981
Long-term project specialist TA advisor arrives	May 30, 1981
First regular Advisory Board meeting - first subprojects approved	March 31, 1981
First subprojects underway	June 30, 1981
Participant training and other RTTS strengthening begins	August 30, 1981

Once the Project is underway, its activities will be conducted on a cyclical basis. The RTTS Advisory Board will meet twice a year, or more often if needed. The RTTS Executive Committee will meet at least every three months. Evaluations will occur annually. For practical logistical reasons, many of the Project and subproject activities will have to be geared to academic years, growing seasons, and the like.

In addition to the above list, a principal benchmark of Project progress will be the initiation of four subprojects by September 30, 1981. Eight subprojects are expected to be underway by September 30, 1982. Each subproject will have its own benchmarks, and progress toward these will be evaluated in the annual evaluations. See Section II.A.2. for conditions expected by the end of the Project. See Annex H for Project Procurement Plan.

B. Project Roles and Monitoring

The diverse institutional roles have been discussed at length in appropriate sections earlier. The role of the Title XII lead university is discussed in Section II.B.4., while that of USAID/E is discussed in Section II.B.5. The structure and role of the RTTS can be found in Section II.B.2 and in Section III.D. In summary, the following are the basic roles and responsibilities by functional category:

- overall Project planning, coordination, and management: the RDS/RTTS, with the assistance of the lead university, and under the monitoring of USAID (see below)
- subproject preparation: joint effort of participating institutions and the RTTS Executive Staff, with the assistance of the lead university
- subproject selection: RTTS Executive Committee and RTTS Advisory Board, with USAID having final approval responsibility by Implementation Letter

- subproject implementation: implementing institution(s), with RTTS providing guidance and coordination, and with the lead university responsible for providing TA
- subproject monitoring and evaluation: RTTS Executive Staff
- provision of all TA and training: the lead university, with the RTTS an integral part of the Selection process, and with USAID having to approve all particular individual TA and training elements
- office space, secretarial assistance, vehicle availability, and other logistical support for TA personnel: the RTTS for those personnel working with it, and the implementing institutions for those working on subprojects
- procurement of equipment, vehicles, materials, and supplies: USAID for offshore procurement, and GOE institutions for incountry procurement
- Project reporting and monitoring: see below
- Project evaluation: joint effort of RTTS, USAID, and lead university (see Section IV.D.)

USAID will carry out its monitoring responsibilities in four ways. First USAID will be required to review a number of routine actions which occur during the life of the Project. The most important are disbursement and reimbursement documents. Also, USAID will have the responsibility to approve all TA persons financed with Project funds and all training actions.

Second, USAID will rely on the formal Project reports and on the Project evaluations (see Section IV.C.). The RTTS will be required to submit a detailed quarterly report to USAID. For each subproject, the report will detail progress made to date, activities during the quarter, problems and delays, recommended actions to address the problems and delays, actions expected the following quarter, and financial status. (It is expected that the RTTS will require a similar report from each subproject's lead implementing institution). The same format is to be used for the part of the Project dealing with institutionalization of the RTTS. It is expected that top officers of USAID and the RDS will meet shortly after each such quarterly report is issued to formally review it.

Third, USAID will rely on the lead university to conduct much of the monitoring (though USAID will retain responsibility). The lead university's chief-of-party TA advisor is expected to meet regularly with USAID's Rural Development Officer to discuss problems and upcoming actions.

Finally, and perhaps most importantly, USAID will actively participate in the implementation of the Project. USAID's Rural Development Officer (RDO) or a member of his staff is expected to participate actively and frequently in the work of the RTTS Executive Staff. The RDO will meet with the RTTS Executive Director on approximately a weekly basis. There is expected to be close interaction between USAID officials and members of the RTTS Executive Committee and the RTTS Advisory Board.

C. Contracting Arrangements

As indicated earlier, after considerable discussion among GOE officials, USAID personnel, BIFAD consultants from the United States, and AID's Regional Contracting Officer from Panamá, it was determined that the objectives specified in this Project Paper can best be accomplished by a Title XII university acting as the lead institution. Consideration was given to the Cooperative Agreement and Collaborative Assistance modes, but it was decided that the standard university contracting procedure would be most appropriate because of the nature of the Project. Such contracting will thus be conducted pursuant to AID Procurement Regulation 7-4-.5701 and will contain the following basic steps:

(a) USAID, in conjunction with BIFAD in Washington, will prepare a list of Title XII universities preselected to receive a Request for Technical Proposal (RFTP).

(b) USAID, working with the RDS and other interested GOE parties, will develop a comprehensive statement of requirements together with selection criteria describing how the proposals will be evaluated. USAID's Regional Contracting Officer will develop the RFTP from these data and will mail the document to the institutions named through step (1) above.

(c) After receipt of proposals, an evaluation team composed of the Contracting Officer, selected USAID personnel, and appropriate GOE personnel will be convened to evaluate the technical proposals against the criteria specified in the RFTP. On-site visits to candidate universities by representatives of the evaluation team may be required before final selection is made.

(d) After selection of the institution for negotiations, USAID shall request the selected institution to prepare a detailed cost proposal to match the technical proposal that was presented.

(e) Negotiations will start in Quito once the cost proposal has been received and evaluated. If after reasonable effort an agreement cannot be reached with the selected university, the negotiations will be terminated and the second ranked university will be invited to prepare a cost proposal and to enter into negotiations. This procedure will continue until an agreement is reached.

(f) After agreement is reached, the Regional Contracting Officer will prepare the contract, and both parties will execute the document.

The lead university contract will be incrementally funded and will cover the entire five years of the Project. As indicated above, the contract will cover all TA and training for establishing the RTTS, some of the TA and training for the subprojects using the task order method, and the responsibility to subcontract (with other Title XII universities whenever possible) for those other elements of the subproject TA and training that it will not be supplying itself. As to procurement of imported materials, equipment, vehicles, and other tangible commodities, the lead university will be expected to assist in drawing up lists and reviewing supplier bids; but for

reasons of Ecuadorean customs laws, the actual procurement may be done by either USAID or GOE institutions, depending on the situation. Overhead to the lead university will not be paid on such procurements.*

One important aspect of the Project is to marshal all available resources for the various subprojects. For example, in the descriptions of potential subprojects, several of the subprojects are expected to be heavily funded from DSB, other AID central or regional funding, and Title XII CRSP. Other possible sources of resources for subprojects are USDA, the international research centers, and Peace Corps. The contract will stress that a major responsibility of the lead university will be to identify and marshal all such appropriate additional resources and coordinate their use through the RTTS, though there will not be any additional specific overhead involved for the lead university.

The proper development of the relationship between the lead university and the RTTS will undoubtedly be a deciding factor in the success of the Project. The Project is complex, and close, smooth relationships must be developed and maintained. The contract will thus go into considerable detail on just what will be expected of the lead university as to its relationship with the GOE. The contract will also call for detailed quarterly reports from the lead university, as well as formal review meetings between it and USAID at least once a year. These meetings will be in addition to what is expected to be a close working relationship between the lead university and USAID. They will also be in addition to the annual Project evaluations, in which the lead university will actively participate.

The above will all be carefully detailed in the RFTP and even more so in the contract itself. The RFTP and the contract will also explain that the subprojects to be conducted under the Project are tentative, pending selection and approval by the RTTS, and that therefore flexibility will be required in the conduct of that part of the TA relating to the subprojects. Likewise, because of the possibility that in future years the Project may be expanded beyond what is currently being proposed, the contract will provide for implementation of additional subprojects should more funds become available.

Careful consideration was given during intensive review to having the GOE prepare and enter into the contract. USAID concluded, however, that the GOE contracting regulations and procedures preclude the possibility of Project success should the GOE at this time attempt the contracting process. Even simple GOE contracts require compliance bonds, and the experiences of Title XII institutions with GOE contracts have been unsatisfactory. However, improving the GOE's contracting procedures will be part of the Projects, so that the RTTS can eventually take over the contracting function. GOE progress in this aspect will be evaluated annually.

Helping the GOE improve its contracting procedures will have two aspects. First, the lead university, as one of its tasks, will help the RTTS study the constraints on contracts in Ecuador, draft sample contract formats, prepare contract procedures manuals, and carry out other steps necessary to build its own contracting capability. Secondly, as the Pro-

It is expected that the lead university will allocate up to 40 percent of all new task orders under its core contract to meeting the objective of providing resources from other universities and agencies.

ject proceeds, the RTTS will be encouraged to enter directly into some small contracts for carrying out certain subproject design or implementation activities. The lead university will also provide assistance with this.

D. Evaluation

Project evaluations will be conducted annually during the life of the Project, with the final evaluation occurring approximately at the same time as the Project's completion date. The first evaluation is expected to be scheduled for October, 1981. This is approximately one year after the start-up of the RTTS, eight months after the arrival of the first long-term advisor, and five months after the first subprojects are initiated. By having the first evaluation at this early point, essential changes can be made before large investments are incurred.

The evaluations are expected to be rather complex, since this is a Project with both an institution building component and a series of individual subprojects, each of the latter with its own objectives. As to the Project as a whole, the evaluations will focus on three main aspects:

- 1) Whether the Project is making sufficient and timely progress toward fulfilling its purposes, indicators of purpose achievement, and end of Project status. This part of the evaluation will concentrate on the functioning of the RTTS, to establish whether it is operating efficiently and effectively and how it might be improved.
- 2) Whether the array of subprojects is meeting the needs of the rural sector and the small farmer. This part of the evaluation will take a "macro" view of the subproject effort, to determine in particular whether the selection criteria and approval process are adequate and appropriate for causing the most necessary subprojects to get selected. It will also look at how well the RTTS is serving as a subproject coordination and management mechanism.
- 3) Whether the TA and training are effective. This part of the evaluation will look critically at the role and performance of the lead university, the Project's training components, and other aspects of TA.

This aspect of the evaluations will be conducted using a series of techniques. These will range from subjective appraisals to surveys of farmers in areas where several subprojects are taking place. It is expected that a number of key conclusions will be reached by studying the experiences of several subprojects together. That is, trends on socio-economic impact, level of technologies used, and environmental impacts will be looked for.

As to the evaluation of specific subprojects, not all will be evaluated each year. A sample of three of four subprojects will be selected, the selection based on (1) subprojects which are expected to show a significant problem or success, (2) subprojects which together are expected to demonstrate a trend, and (3) subprojects which contain a factor which is

of particular importance for the GOE or USAID to examine.

Each subproject selected will be studied as to whether it is on schedule and whether it is on a course which would likely cause it to achieve its stated objectives. The inputs to each subproject (particularly TA and training) will be studied, with recommendations made for improvement. For each subproject, the following elements will also be carefully evaluated:

1) The economic impact of the subproject. This will look at each aspect of the subproject (e.g., research, extension, small farmer training, training of professionals) to determine if it is cost-effective and has a sufficiently high rate of return.

2) The sociological effects of the subproject. This will look at family roles, attitudinal changes, and how changes in technologies affect other sociological aspects of small farmer life. Particular emphasis will be given to women, youth, Indians, blacks, and other disadvantaged groups, to determine how the subproject impacts on them.

3) The environmental impact of the subproject. This will examine actual or potential adverse effects of the subproject (e.g., stream pollution due to careless use of fertilizer, danger to flora of fauna due to use of pesticides). It will also try to measure the beneficial effects of interventions so that the best can be replicated elsewhere.

For all aspects of the evaluation, emphasis will be on (1) improvement of existing activities, (2) learning lessons which can influence future GOE activities, and (3) improvement in institutional capabilities and coordination. Each evaluation will thus be a combination of description, analysis, and recommendations. AID's Project Evaluation Summary (PES) will serve as a format guide, and the Project's Logical Framework Matrix (see Annex A) will serve as the guideline for indicators.

The RTTS Executive Staff and the lead university long-term TA advisors will work together in designing the evaluation techniques and procedures. USAID representatives will also be involved in the design and will be required to approve the design and procedures. Some Project funds will be available to conduct studies to support the evaluations and to bring short-term TA advisors to assist with them, particularly with the final evaluation.

E. Conditions and Covenants

As discussed earlier, there are several conditions essential to the proper initiation of the Project. There are also several conditions precedent to various intermediate steps during the life of the Project which are essential for proper Project implementation. These various conditions are:

1) As a condition precedent to first disbursement of Project funds, that the RDS be formally established and that the RTTS be established as part of it with an Executive Director named and on board.

2) As a condition precedent to disbursements of Project fund other than for the chief-of-party long-term advisor, that the RTTS be staffed with an adequate number of project specialists in addition to the Executive Director, and that it have office space, equipment, and necessary support personnel.

3) As a condition precedent to the first disbursement of Project funds to the RTTS Fund (i.e., for subprojects), that the RTTS have approved subproject selection procedures, including selection criteria.

4) As condition precedent for disbursing Project funds in any given calendar year, that the RDS present to USAID an implementation plan for that year, listing anticipated subprojects to be initiated during such calendar year and a statement of anticipated financial needs for all aspects of the Project, both on-going and new.

5) As a condition precedent to using Project funds for any given subproject there be prepared adequate technical, economic, social, and environmental analyses, that a detailed administrative plan be drawn up, and that there be a financial commitment in writing from each participating institution.

In addition, the GOE will be expected to covenant the following in the Project Agreement:

1) That it will contribute to the RTTS Fund, beginning no later than the third Project year, annual funds of amounts jointly agreed to by AID.

2) That it will continue the RTTS Fund, with adequate funding, after the termination of AID assistance.

3) That it concedes that USAID will have the right to approve any subproject, training activity, TA personnel, or other Project component to be financed with funds, originating from AID.

4) That it will implement annual Project evaluations.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

NOTE: THIS IS AN OPTIONAL FORM WHICH CAN BE USED AS AN AID TO ORGANIZING DATA FOR THE PARAGRAPH. IT NEED NOT BE RETURNED OR SUBMITTED.

Life of Project:
From FY 1980 to FY 1985
Total U.S. Funding: \$ 5,300,000
Date Prepared: June 4, 1980

APPENDIX 11.1
11.1.1

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

PAGE 1

NARRATIVE SUMMARY	OBJECTIVELY MEASURABLE 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 Attainment: (A-2)</p> <p>Increased employment, productivity, and incomes, and improvements in the quality life for the beneficiaries of the various subprojects, according to the objectives 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"> Continuation of the GOE commitment to eliminate rural poverty and to increase agricultural production. A political environment conducive to conducting rural development projects of this nature.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 1980 to FY 1985
Total U.S. Funding \$ 5,300,000
Date Prepared: June 4, 1980

AID 1020-10 11-731
SUPPLEMENT 1

Project Title & Number Rural Technology Transfer System, 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"> The RTTS fully established and capable of continuously evaluating the rural sector's need for foreign technical expertise, and helping it obtain such expertise. The carrying out of approximately eight sub-projects, each designed to (a) address one or more identified institutional or technological constraints, (b) necessitate two or more rural development institutions working together, and (c) provide linkages among the research, extension and education functions. The formation of strong linkages between U.S. Land Grant universities and Ecuadorean institutions for provision of a majority 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>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 1980 to FY 1985
Total U.S. Funding: \$5,300,000
Date Prepared: _____

ADD 1020 10 11-78
SUPPLEMENT 1

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

June 4, 1980 PAGE 3

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Project Outputs: (C-1)</p> <ol style="list-style-type: none"> 1. RTTS: <ol style="list-style-type: none"> a. Staff on board and trained b. Studies undertaken c. Subprojects designed d. Disbursed from RTTS Fund 2. Subprojects <ol style="list-style-type: none"> a. Undertaken b. Professionals 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, simposia held k. Data generating capacity established l. Studies undertaken on constraint areas. 	<p>Magnitude of Outputs: (C-2)</p> <p>Four professionals and supporting clerical. One on contracting, and evaluation of Project. Twelve \$ 4.3 million.</p> <p>Eight These figures must be aggregated from the objectives of the individual subprojects.</p>	<p>(C-3)</p> <p>The annual evaluations will look at the progress of the RTTS and at a sample of on-going subprojects. Each individual subproject will be expected to have firm objectives, baseline data, and a budget for collecting comparative data.</p>	<p>Assumptions for achieving outputs: (C-4)</p> <ol style="list-style-type: none"> 1. Achievement of coordination among the various rural sector institutions. 2. A willingness by the various rural sector institutions to participate in the Project and to make the necessary personnel and resources available.

APP 1047-00 (11-79)
SUPPLEMENT 1

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 1980 to FY 1985
Total U.S. Funding \$ 5,300,000
Date Prepared: June 4, 1980

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

PAGE 4

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Inputs: (D-1)	Implementation Target (Type and Quantity) (D-2)	(D-3)	Assumptions for providing inputs: (D-4)
1. AID funds:		AID and Project financial records, and RTTS quarterly reports.	No undue bureaucratic or technical delays in the provision of the Project inputs.
a. For RTTS:			
Long-term TA	\$ 655,000		
Short-term TA	84,000		
Training	25,000		
Studies & evaluation	50,000		
Equipment & vehicles	36,000		
Local Travel	8,000		
Inflation and conting.	142,000		
Total	\$1'000,000		
b. For subprojects (RTTS Fund):			
(Figures are estimates, designs and approval)			
Long-term TA	\$ 307,500		
Short-term TA	993,000		
Training (at all levels)	1'598,300		
Studies & evaluation	147,100		
Equipment & vehicles	690,800		
Local Travel	46,000		
Other	50,000		
Inflation and conting.	467,300		
Total	\$4'300,000		
2. GOE:			
a. For RTTS	\$ 750,000		

AID 1627-0-01-732
SUPPLEMENT 1PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORKLife of Project:
From FY 1980 to FY 1985
Total U.S. Funding \$5,300,000
Date Prepared June 4, 1980 PAGE 4Project Title & Number Rural Technology Transfer System, 518-0032

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Inputs: (D-1)	Implementation Target (Type and Quantity) (I-2)	(D-3)	Assumptions for providing inputs: (D-4)
b. For subprojects (principally personnel and facilities)	\$ 7,450,000		
c. For RTTS Fund (cash)	800,000		
Total	<u>\$ 9,000,000</u>		

UNCLASSIFIED
Department of State

OUTGOING
TELEGRAM

ANNEX B

PAGE 01 STATE 061127
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TAGS:

SUBJECT: DAEC REVIEW OF RURAL TECHNOLOGY TRANSFER SYSTEM
PIO

1. THE SUBJECT PIO WAS REVIEWED AND APPROVED BY THE DAEC
ON FEBRUARY 9. THE FOLLOWING ISSUES SHOULD BE ADDRESSED
DURING PP PREPARATION:

2. FEASIBILITY OF THE COORDINATING MECHANISM. THE PP
SHOULD FULLY DESCRIBE THE IDEAL COORDINATING MECHANISM FOR
RURAL DEVELOPMENT PROGRAMS, THE RURAL DEVELOPMENT
SECRETARIAT (INDIA), AND ITS PLACE IN THE U.S. BUREAUCRATIC
STRUCTURE (ON-SITE OR OFF-CENTRE-BASED AGENCY). FURTHER, THE
PP SHOULD ADDRESS THE ISSUE OF HOW A HIGHLY CENTRALIZED
STRUCTURE LIKE THE RDT WILL WORK WITH THE DECENTRALIZED
AGENCIES OF THE MINISTRY OF AGRICULTURE, RURAL DEVELOPMENT
AND THE REGIONAL DEVELOPMENT AGENCIES AND PIPOs. IN
ADDITION, THE FEASIBILITY OF PLACING THE COORDINATING
FUNCTION AT THE SECTOR LEVEL (IEED), WITHIN THE MOA, SHOULD
BE DISCUSSED.

3. PROJECT DESIGN.

A. THE PIO PROPOSED AN ICI APPROACH FOR FINDING SPECIFIC
RESEARCH ACTIVITIES. IN ORDER TO INSURE THAT FUNDING
REQUIREMENTS ARE FULFILLED, THE PP SHOULD INCLUDE A LIST
OF FIRM SUBPROJECT ACTIVITIES WHICH WILL BE FINANCED DURING
THE FIRST PROJECT YEAR ALONG WITH A LIST OF ILLUSTRATIVE
SUBPROJECTS FOR THE REMAINING FIVE YEARS ADDING UP TO THE
LEVEL OF THE RURAL TECHNOLOGY TRANSFER FUND (RTTF).
FURTHER, A PROCESS FOR ANNUALLY SUBMITTING SUBSEQUENT
YEAR'S LIST OF SUBPROJECT ACTIVITIES PRIOR TO
APPROVAL OF THAT YEAR'S BUDGET FUNDS, SHOULD BE CLEARLY
LAID OUT IN THE PP. DURING INTENSIVE REVIEW AND NO
ANALYSIS FOR SUBPROJECT ACTIVITIES SHOULD BE CONDUCTED
AND SUMMARIZED IN THE PP.

B. THE RURAL TECHNOLOGY TRANSFER FUND. THE PP SHOULD ALSO
DISCUSS THE DEGREE OF U.S. COMMITMENT FOR CONTINUING CONTRI-
BUTIONS TO THE RTTF AND ESTABLISH A RECOMMENDED ANNUAL
LEVEL FOR U.S. BUDGETARY CONTRIBUTIONS AFTER THE PROJECT

TERMINATES.

C. SELECTION CRITERIA FOR SUBPROJECT ACTIVITIES SHOULD BE
FIRMLY DEVELOPED IN THE PP AND BE TAILORED TO INSURE THAT
SUBPROJECT ACTIVITIES WITH A GOOD CHANCE FOR SUCCESSFUL
IMPLEMENTATION AND A POTENTIAL FOR MEANINGFUL IMPACT
WILL BE CHOSEN.

4. DESIGNATION OF A LEAD UNIVERSITY AND PROPOSED CONTRAC-
TING MODE. THE PP SHOULD FULLY EXPLORE THE ADVANTAGES OF
DESIGNATING A LEAD TITLE XII UNIVERSITY AND INSURE THAT
PARTICIPATION OF OTHER TITLE XII INSTITUTIONS IN RESEARCH
--- WILL NOT BE PRECLUDED PARTICULARLY FOR TITLE
XII IN SELECTED SECTOR SPECIALTIES. THE PROPOSED CONTRACTING
MODE (A.I.D. DIRECT OR HOST COUNTRY CONTRACT) SHOULD BE
JUSTIFIED AND A PLAN FOR GRADUALLY TURNING OVER TO THE
RDT THE OPERATIONAL RESPONSIBILITIES CARRIED OUT IN THE
EARLY PROJECT YEARS BY THE U.S. UNIVERSITY SHOULD BE
DISCUSSED IN THE PP.

5. EVALUATION PLAN. THE PP'S EVALUATION PLAN SHOULD
STATE WHAT INDICATORS WILL BE MEASURED IN DETERMINING
THE SUCCESS OF SUBPROJECTS. IN ADDITION TO U.S. FINANCIAL
CONTRIBUTIONS, OTHER INDICATORS OF THE DEGREE OF
INSTITUTIONALIZATION OF THE RURAL TECHNOLOGY TRANSFER
SYSTEM SHOULD BE DEVELOPED AND DESCRIBED IN THE PLAN. VANCE

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Annex C - Table 2

SWCM Subproject

Implementation Plan for GOE Funded Elements

Activity	Quarters																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
SWCM Subproject initiated and Director appointed	x	-----																
Technicians appointed	2x	3x-- (5 total)		-- 4x --		continue with				9	-----							
Agronomos appointed	2x	3x-- (5 total)		-- 4x --		continue with				9	-----							
Field workers appointed	4x	6x-- (10 total)		-- 8x --		continue with				18	-----							
Per diem and tickets for travel	x	-----																
Aerial Photos	x																x	
Per diem and travel for technicians outside program (months)	2x	2x			2x	2x			1x	1x				1x				
Secretary appointed	x	-----																
Location of offices of Technicians	x	-----																
Purchase of Office Material	x	x				x					x				x			
Purchase of Vehicles	2x					1x												

Annex C - Table 3

SFARD Subproject

Implementation Plan for RTTS Funded Elements

Activity	Quarter																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
SFARD Subproject initiated	x	-----															
Long Term (3 mo.) US Training						1	-----			1	-----						
Assistantships initiated 5/yr		5	-----			5	-----			5	-----			5	-----		
Short-Term US ta (months)		3x				2x			2x	1x			2x	1x			2x
7 Masters; 2 yrs. ea.						4	people			7	people			3	people		
Short Term (3 mo.) US Training			4x				6x	6x			6x	6x			3x	3x	
Field days, 12,500 people per yr.			4x	4x			4x	4x	4x		6x	4x	4x		5x	5x	5x
Short Term Training in Ecuador (weeks)	2x	1x		1x	1x	2x		1x	2x	1x		2x	2x	1x		2x	2x
Vehicles Purchased	5x		5x														
Field Equipment and Ag. Machinery Purchased	x	x				x				x				x			
Field Materials Purchased	x				x				x				x				x
Office Materials Purchased	x	x				x				x				x			
Publication Materials Purchased	x	x				x				x				x			

Annex C - Table 4

SFARD Subproject

Implementation Plan for GOE Funded Elements

Activity	Quarter																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
SFARD Subproject initiated and Director appointed	x	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Area Technicians appointed	8x	-----	-----	-----	-----	4x	--	continue		2x	-----	continue		1x	-----	continue	
								with 12				with 14			with 15		
Program Technicians appointed	16x	-----	-----	-----	-----	8x	---	continue		4x	-----	continue		2x	-----	continue	
								with 24				with 28			with 30		
Secretary appointed	1x	-----	-----	-----	-----	-----	-----	-----	-----	1x	-----	continue	with 2	-----	-----	-----	-----
Local TA 4 mo./yr.	2x	1x			1x	2x	1x		1x	1x	1x		2x	1x	1x		2x
Local Statistics TA 6 mo./yr.		1x	2x	3x				3x	3x			3x	3x			3x	
Per diem for local Technicians	x	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Vehicle maintenance	x	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Farm Equipment maintenance	x	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Location of offices for Technicians	x	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Office materials purchased	x						x				x				x		

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

A. GENERAL CRITERIA FOR COUNTRY ELIGIBILITY

1. FAA Sec. 116. Can it be demonstrated that contemplated assistance will directly benefit the needy? If not, has the Department of State determined that this government has engaged in a consistent pattern of gross violations of internationally recognized human rights?

The Department of State has not so determined. In addition, it can be demonstrated that a major share of the proposed assistance will directly benefit the needy.

2. FAA Sec. 421. Has it been determined that the government of recipient country has failed to take adequate steps to prevent narcotics drugs and other controlled substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in such country, or transported through such country, from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents, or from entering the United States unlawfully?

It has not been so determined. The GOE has an active narcotics control program with USG support.

3. FAA Sec. 500(b). If assistance is to a government, has the Secretary of State determined that it is not controlled by the international Communist movement?

The Secretary of State has so determined.

4. FAA Sec. 501(d). If assistance is to government, is the government liable as debtor or guarantor, or guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) debt is not denied or contested by such government?

No such case is known.

5. FAA Sec. 502(a)(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?

No.

6. FAA Sec. 620(a), 620(f); FY 70 App. Act, Sec. 101, 114 and 630. Is recipient country a Communist country? Will assistance be provided to the Socialist Republic of Vietnam, Cambodia, Laos, Cuba, Uganda, Mozambique, or Angola?

No.

7. FAA Sec. 620(i). Is recipient country in any way involved in (a) subversion of, or military aggression against, the United States or any country receiving U.S. assistance, or (b) the planning of such subversion or aggression?

No.

8. FAA Sec. 620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction, by mob action, of U.S. property?

The GOE is taking measures considered adequate by the USG.

9. FAA Sec. 620(l). If the country has failed to insure 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?

The AID Administrator has not so considered.

10. FAA Sec. 620(m); Fishermen's Protective Act of 1954, as amended, 16 U.S.C. 1801. If country has subjected, or imposed any penalty or sanction against, any U.S. fishing activities in international waters:

In recent years no such incidents have taken place.

a. has any deduction required by the Fishermen's Protective Act been made?

b. has complete denial of assistance been considered by AID Administrator?

11. FAA Sec. 620; FY 70 App. Act, Sec. 622.

(a) Is recipient country in default for more than 6 months on interest or principal of any AID loan to the country?

(b) Is country in default exceeding one year on interest or principal on U.S. loan under program for which App. Act appropriates funds?

No.

12. 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

Yes, as per the annual report on implementation of Section 620 (s). Ecuador's CY 1960 budget does not increase the percentage spent for military purposes.

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, as reported in annual report on implementation of Sec. 620(s)." This report is prepared at time of approval by the Administrator of the Operational Year Budget and can be the basis for an affirmative answer during the fiscal year unless significant changes in circumstances occur.)

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13. FAA Sec. 600(f). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption? No.

14. FAA Sec. 606(a). What is the payment status of the country's AID 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? Payment status is current.

15. FAA Sec. 602, FY 79 App. Not. Sec. 607. Has the country granted secondary arms prosecution to any individual or group which has committed an act of international terrorism? No.

16. FAA Sec. 655. Does the country object, on basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. there to carry out economic development program under FAA? No.

17. FAA Sec. 607, 610. Has the country, after August 3, 1977, transferred or received nuclear enrichment or reprocessing equipment, materials, or technology, or other specified items, or software? Has it manufactured a nuclear device after August 3, 1977, although not a "nuclear-weapon State" under the nonproliferation treaty? No.

B. FUNDING CRITERIA FOR AID/WHY ELIGIBILITY

1. Development Goals and Country Criteria

a. FAA Sec. 107(a)(1). Have criteria been established and taken into account to assess consistent progress of country in effectively involving the poor in development, or such indices as: (1) increase in agricultural productivity through small-scale intensive agriculture, (2) reduced infant mortality, (3) control of population growth, (4) equality of income distribution, (5) reduction of unemployment, and (6) increased literacy?

AID/WH has established such criteria, and they have been taken into account in reinitiating an AID program in Ecuador.

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, and assistance to urban poor?

Only indirectly, as trainees study development theories and apply them to development projects.

2. Economic Support Fund Country Criteria

a. FAA Sec. 502B. Has the country engaged in a consistent pattern of gross violations of internationally recognized human rights?

No.

b. FAA Sec. 503(b). Will assistance under the Southern Africa program be provided to Mozambique, Angola, Tanzania, or Zambia? If so, has President determined (and reported to the Congress) that such assistance will further U.S. foreign policy interests?

No.

c. FAA Sec. 509. If commodities are to be granted so that bare proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made?

Not applicable.

d. FY 79 App. Act. Sec. 113. Will assistance be provided for the purpose of aiding directly 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?

No.

e. FAA Sec. 502B. Will security supporting assistance be furnished to Argentina after September 30, 1978?

No.

PROJECT CHECKLIST

Listed below are statutory criteria applicable generally to projects with FAA funds and project criteria applicable to individual fund 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 79 App. Act Unnumbered; FAA Sec. 553 (b); Sec. 530A. (a) Describe how Committees on Appropriations 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 figure)?

Project was originally a component of Technological Access Networks for Small Farmers Project, listed in FY 1980 Congressional Presentation. A revised notification to Congress will be made due to separation out of Project and changes in funding levels and certain components.

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

Reasonably firm estimates of costs have been made and are summarized in this Project Paper.

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?

No such action required.

4. FAA Sec. 611(b); FY 79 App. Act Sec. 201. If for water or wastewater and related construction, has project met the standards and criteria as per the Principles and Standards for Planning Water and Related Land Resources dated October 25, 1973?

Not applicable. At most some on-farm water use research and demonstrations will be conducted.

5. FAA Sec. 611(a). 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?

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.

No, Project is Ecuador - specific in its institution building and applied research aspects.

A.

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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; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.

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

9. FAA Sec. 612(b); Sec. 601(b). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local commodities to meet the cost of contractual and other services, and foreign currencies needed by the U.S. are utilized to meet the cost of contractual and other services.

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?

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

12. FX 29 (Am. Act. Sec. 207). If assistance is for the production of a commodity for export, is the commodity likely to be in surplus to world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar, or competing commodity?

The Project is geared specifically to improve the technical efficiency of agriculture within Ecuador's small farm subsector. It will also serve to foster a relationship between Ecuadorean and US institutions which may lead to increased trade, and it will encourage use of cooperatives as a vehicle to improve small farmer production and income.

Most goods and services under the Project will be supplied by public institutions in the U.S. Land Grant universities.

The GOE is supplying over 60% of the Project's costs. The AID funds are primarily to provide the foreign exchange costs which would be difficult for Ecuador to provide.

No.

Yes.

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

B. FINDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

a. FAA Sec. 108(b); 111; 113; 201a. Extent to which activities will effectively involve the poor in development, by extending access to agency at local level, increasing labor-intensive production and the use of appropriate technology, strengthening and cutting free outlets to small urban and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained

The basic objective of the Project is to assist the small farm sector through the development and dissemination of appropriate technologies. The poor will be involved in the applied research and the demonstration activities, with the technical assistance of U.S. Land Grant universities.

8.1.a.

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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, 104, 105, 106, 107.

Is assistance being made available under 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, extend activity specifically designed to increase productivity and income of rural poor; [103] if for agricultural research, is full account taken of needs of small farmers;

(2) [104] for population planning under sec. 104(b) or health under sec. 104(c); if so, extend 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 children and young children, using paraprofessional and auxiliary medical personnel, clinics and health posts, community distribution systems and other modes of community research.

(3) [105] for education, public administration, or other resources development; if so, extend to which activity, including nonformal education, makes formal education more relevant, especially for rural farmers and urban poor, or strengthens management capability of handicrafts enabling the poor to participate in development;

(4) [106] for technical assistance, energy, research, reconstruction, and selected development problems; if so, extend activity to:

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

(b) to help alleviate energy problems;

(c) research into, and application of, economic development processes and techniques;

(d) reconstruction after natural or manmade disaster;

Cooperatives will be encouraged whenever appropriate, and subprojects will receive priority status whenever small farmer organizations are utilized. Likewise, subprojects benefitting women will receive priority status.

The assistance is being made available for agriculture, rural development, and nutrition, under Section 103 of the FAA. The Project will stress the building of institutions which serve agriculture and rural development. Agricultural research will be a major component all such research will be directed toward the needs of small farmers and will involve trials and demonstrations on small farms.

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(v) for special development problem, and to enable prompt 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.

c. [107] Is appropriate effort placed on use of appropriate technology?

d. FAA Sec. 102(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 major cost-sharing requirement been waived for a "relatively least-developed country"?

e. FAA Sec. 102(b). Will grant capital assistance be provided for project over more than 3 years? If so, has justification satisfactory to the Congress been made, and efforts for other financing, or is the recipient country "relatively least developed"?

f. FAA Sec. 201(b). Describe extent to which program meets basic 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 and political processes essential to self-government.

g. FAA Sec. 102(c). Does the activity give reasonable promise of contributing to the development of economic resources, or to a increase in productive capacities and self-sustaining economic growth?

2. Development Department Project Criteria
1-3

a. FAA Sec. 102(d). Information and conclusion on capability of the country to repay the loan, including reassessment of repayment prospects.

b. FAA Sec. 501(d). If assistance is for any productive enterprise, the which will operate in the U.S. with U.S. partners, is there an agreement by the recipient country to export to the U.S. not less than 10% of the enterprise's annual production during the life of the loan?

The Project is specifically designed to develop, demonstrate, and disseminate technologies appropriate to the needs of small farmers.

Yes, the GOE will provide over 60% of the costs of the Project.

The Project does not involve grant capital assistance.

The Project fulfills an expressed GOE need. Ecuadoreans were involved closely in its design. The Project will be carried out through a variety of Ecuadorean institutions, including higher level educational institutions.

Yes, the Project should cause an increase in the incomes of a large group of Ecuador's poor, and an increase in Ecuadorean food production. Thus it should directly contribute to the country's self-sustaining economic growth.

Not applicable.

Not applicable.

3. Project Criteria Solely for Economic Support Fund

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

Not applicable.

b. FAA Sec. 533. Will assistance under this chapter be used for military, or paramilitary activities?

Not applicable.

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STANDARD ITEM CHECKLIST

Listed below are 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

1. FAA Sec. 602. Are there arrangements to permit U.S. small business to participate equitably in the furnishing of goods and services financed?
2. FAA Sec. 604(a). Will all commodity procurement be financed by the U.S. except as otherwise determined by the President or under delegation from him?
3. FAA Sec. 604(f). If the cooperating country discriminates against U.S. marine insurance companies, will agreement require that marine insurance be placed in the United States on commodities financed?
4. FAA Sec. 604(g). 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?
5. FAA Sec. 602(a). Will U.S. Government excess production property be utilized wherever practicable in lieu of the procurement of new items?
6. FAA Sec. 603. (a) Compliance with requirement in section 901(b) of the Merchant Marine Act of 1920, as amended, that at least 50 percent of the gross tonnage of commodities (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.
7. FAA Sec. 601. If technical assistance is financed, will such assistance be furnished to the full extent practicable as goods and professional and other services from private enterprise on a contract basis? If the

- Most furnishing of services will be carried out by Land Grant universities under Title XII of the FAA. AID procedures encouraging small business participation will be utilized for procurement of goods, but this is expected to be a minor component of the Project.
- (2) Yes, Procurement is planned from U.S. and host country. Waivers for Code 941 procurement will be requested as required.
- (3) Not applicable.
- Not applicable.
- Yes.
- Such provision will be written in Project Agreement.
- All or almost all TA will be furnished by or through U.S. Land Grant universities under Title XII of the FAA.

A.7.

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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?

8. International Air Transport. Fair Competitive Practices Act, 1934. If air transportation of persons or property is financed on grant basis, will provision be made that U.S.-flag carriers will be utilized to the extent such service is available?

Yes, the Project Agreement will so state.

9. FY 72 App. Act Sec. 108. Does the contract for program and contain a provision authorizing the termination of such contract for the convenience of the United States?

Yes, it will.

B. Construction

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

Not applicable.

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?

Yes.

3. FAA Sec. 603 (1). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the United States not exceed \$100 million?

Not applicable.

Other Restrictions

1. FAA Sec. 602 (e). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter?

Not applicable.

2. FAA Sec. 601 (c). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights?

Not applicable.

3. FAA Sec. 602 (a). Do arrangements preclude promotion of any other trade and projects or activities of Communist or satellite countries, contrary to the best interests of the United States?

Yes, arrangements preclude activities as stated.

4. FAA Sec. 601 (1). Is financing not permitted to be used, with or without, for purchase, long-term lease, or exchange of motor vehicle manufactured outside the United States, or guaranty of such transaction?

All motor vehicles financed are expected to be procured from the U.S.

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5. Will arrangements preclude use of financing:
- a. FAA Sec. 104(f). To pay for performance of abortions or to motivate or coerce persons to practice abortions, to pay for performance of involuntary sterilization, or to coerce or provide financial incentive to any person to undergo sterilization?
 - b. FAA Sec. 620(a). To compensate owners for expropriated nationalized property?
 - c. FAA Sec. 660. To finance police training or other law enforcement assistance, except for narcotics programs?
 - d. FAA Sec. 662. For CIA activities?
 - e. FY 79 App. Act Sec. 104. To pay pensions, etc., for military personnel?
 - f. FY 79 App. Act Sec. 106. To pay U.N. assessments?
 - g. FY 79 App. Act Sec. 107. To carry out provisions of FAA sections 251(d) and 251(h)? (Transfer of FAA funds to multilateral organizations for lending.)
 - h. FY 79 App. Act Sec. 112. To finance the export of nuclear equipment, fuel, or technology or to train foreign nations in nuclear fields?
 - i. FY 79 App. Act Sec. 601. To be used for publicity or propaganda purposes within United States not authorized by the Congress?

Arrangements preclude the financing of all items listed.

Consejo Nacional de Desarrollo

*Departamento del
Vicepresidente
de la República*

Oficio No.

Quito, a 17 JUL 1989

Señor
John Sambrailo,
Representante de la AID,
Presente.

Señor Representante:

Con oficio No. 1532-VPR, del 20 de mayo del presente año, presenté a usted el estudio y solicitud de financiamiento no reembolsable para el Proyecto "Apoyo al Sistema Nacional de Capacitación Rural". Gracias por su oficio O/DF-80-41, en el que me expresa su aceptación y el inmediato trámite dado al proyecto.

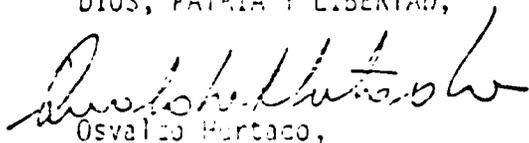
En esta oportunidad, me permito presentar a usted, a nombre del Gobierno Nacional, el Proyecto "Sistema de Transferencia de Tecnología Rural" cuyos objetivos fundamentales se expresan en el fortalecimiento de las instituciones de desarrollo rural, en el desarrollo de tecnologías apropiadas para las necesidades de los pequeños agricultores, y en la creación de un sistema administrativo institucional para la transferencia de tecnología.

Esta solicitud, de financiamiento no reembolsable, asciende a un monto total de 5'232.000 dólares para ser utilizados en los próximos cuatro años. Para los subproyectos, que en la debida oportunidad presentarán las instituciones nacionales al sistema, se pondrá como condición básica que la institución ejecutora presente el proyecto con la contraparte nacional y el compromiso de asignación de personal necesario.

El CONADE, como organismo encargado de la planificación nacional, asume la responsabilidad de la presentación, trámite y firma del convenio de ejecución de este proyecto.

Le saluda atentamente,

DIOS, PATRIA Y LIBERTAD,



Osvaldo Hurtado,
VICEPRESIDENTE DE LA REPUBLICA,
PRESIDENTE DEL CONSEJO NACIONAL
DE DESARROLLO.

Anexo.



RECTORADO

R-0569-80

Guayaquil, 6 de Junio de 1.980

Señor Economista
 LUIS KING V.,
 Presidente de CONADE
 Quito

Señor Presidente:

Varios estudios realizados en el campo de la educación agropecuaria en el Ecuador demuestran que ésta no satisface plenamente las necesidades del país y además no guarda continuidad ni relación con otras instituciones de investigación y extensión agropecuaria. Un problema adicional y grave es la escasez de capacitación a un nivel menor que el profesional universitario.

La Universidad Católica de Guayaquil, consciente de estos problemas estableció hace algunos años la Facultad de Educación Técnica para el Desarrollo que comprende una escuela de Mecánica y una de Electricidad. Sin embargo, pese a sus intenciones y aunque existe la necesidad de aumentar su alcance, sus limitados recursos le han impedido emprender una expansión a sus programas de estudios.

Considerando la necesidad de tal desarrollo a la vez que conociendo la elaboración que hace CIMMIE actualmente de un documento que presentará a USAID en el campo de la tecnología rural, la Universidad Católica de Guayaquil solicita la inclusión de un subproyecto dentro del Sistema de Transferencia de Tecnología Rural que entenderos será presentado a la Agencia para el Desarrollo Internacional para su financiamiento con fondos del Gobierno Norteamericano.

Los objetivos que se persiguen con este subproyecto son: 1) eliminar las deficiencias actuales en el programa de Mecánica; y 2) establecer las bases de la expansión a otras áreas de la educación agrícola.

El Subproyecto incluye reforzar la calidad del personal docente de la escuela de Mecánica, mediante capacitación en el Ecuador y Estados Unidos; revisión del programa de estudios y contactos con INIAP y empresarios, etc. con el fin de que los estudiantes puedan lograr emprendimientos. El subproyecto incluye el financiamiento de las necesidades futuras de materiales y útiles en el campo agropecuario.

La Universidad Católica de Santiago de Guayaquil, como la que usted

ENCUENTRO 1981
 GUAYAQUIL ECUADOR



RECTORADO

R-0569-80

Pag. Nº 2

interesada proporcionará la colaboración necesaria y contribuirá dentro de sus limitaciones presupuestarias al tiempo que espera la aprobación de CONADE con respecto a la inclusión de este sub-proyecto en el Proyecto del Sistema de Transferencia de Tecnología Rural.

Confiamos en la recepción favorable a esta exposición y se aprobará la inclusión solicitada y aprovecho la oportunidad para presentarle el testimonio de mi consideración más distinguida.

Muy atentamente,
CIENCIA Y FE

Dr. GUSTAVO CORNEJO MONTALVO
Vice-Rector Encargado del Rectorado

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ANNEX E

Banco Nacional de Fomento

TELÉGRAFOS Y TELEFONOS

APARTADO 686

QUITO

Quito, a

12 MAR 1930

004135

Señor Dr.
Oswaldo Hurtado
VICEPRESIDENTE DE LA REPUBLICA
Presente.

Señor Vicepresidente:

Con relación al documento "Sistema de Transferencia de Tecnología Rural" (STTR), que se ha servido entregar a nuestro representante Econ. General Guzmán, quien ha participado en la elaboración de dicho documento, tengo a bien manifestar a Ud. lo siguiente:

El proyecto se origina en un diagnóstico correcto de la situación de los sectores de pequeños agricultores del área rural del Ecuador.

Las deficiencias relacionadas con los sistemas de asistencia técnica que el proyecto trata de cubrir con acciones, así como los objetivos y metas que se propone alcanzar en beneficio de los sectores marginales y de la economía general del país.

El proyecto tiene el mérito de haber sido preparado con la participación activa de profesionales voluntarios de diferentes entidades dedicadas a buscar el desarrollo socio-económico del sector agrícola, lo cual le asigna un alto margen de capacidad de ejecución.

Por lo que antecede, a nombre del Banco Nacional de Fomento, me permito consignar nuestra conformidad con el propósito sometido a nuestra consideración, a la vez que expresamente nuestra colaboración en cuanto correspondiere a la institución que representa.

De usted muy atentamente,

p. BANCO NACIONAL DE FOMENTO

Ing. Marcelo Quevedo T.
GERENTE GENERAL

3137

RECIBIDO 12 MAR 1930

COPIA

Comité
S.T.R.
Comisión de Asesoría
1953

INIAP
APARTADO 200
QUITO - ECUADOR
CABLE: INIAP

OFICIO N° XIX-1195

Mayo 20 de 1953

Señor Doctor
Gualdo Hurtado Larrea
VICEPRESIDENTE DE LA REPUBLICA
Presidente del Consejo Nacional de
Desarrollo -CONADE-
En su despacho

De las consideraciones:

En la elaboración de la Propuesta del Proyecto sobre "Sistema de Transferencia de Tecnología Rural" (SITR), participaron funcionarios del Instituto Nacional de Investigaciones Agropecuarias (INIAP) junto con funcionarios de otras entidades nacionales, bajo la dirección del Consejo Nacional de Desarrollo (CONADE), y con la asesoría de la Agencia Internacional para el Desarrollo (AID).

Por el presente, se desea manifestar a usted que la Dirección General del INIAP está de acuerdo con esta Propuesta y que, de ser aprobado y aceptado el Proyecto, no será invitado a participar en el desarrollo y ejecución de los subproyectos que le correspondan, contribuyendo con el personal y recursos de contrapartida establecidos dentro del mismo.

Aprovecho la oportunidad para reiterarle al Señor Vicepresidente los sentimientos de mi más distinguida consideración.

Ing. Gualdo Hurtado Larrea
DIRECTOR GENERAL, INIAP

c.c. Ing. Carlos Vallejo
Archivo
At: Vallejo



MINISTERIO DE AGRICULTURA
Y GANADERIA

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STAN

ANNEX E 6

23E- 502361

Eckling

Quito, a 28 MAYO 1966

Señor Doctor
Osvaldo Hurtado Larrea,
Vicepresidente de la República del Ecuador
En su Despacho.

RECIBIDO JUNIO 1966

Señor Vicepresidente :

Para su conocimiento, me permito informarle que se ha revisado la propuesta de Proyecto " Sistema de Transferencia de Tecnología Rural " financiado con la participación de : OMADE, MAG, SNE, INIAP, INERHI, TERAC y AID; para la obtención de fondos no reembolsables proveídos por el Gobierno de los Estados Unidos a través de la AID, Ecuador S.A. se ha realizado el análisis del Subproyecto " Manejo y Conservación de Suelos y Aguas " que tiene relación directa con las funciones del Instituto Ecuatoriano de Recursos Hidráulicos INERHI.

Al respecto cúmpleme manifestar a usted, que los objetivos del Proyecto están de acuerdo con los propósitos del Gobierno del Presidente Rodas, de mejorar y modernizar los niveles de vida del pueblo rural y optimizar la producción de alimentos.

En lo concerniente al Subproyecto " Manejo y Conservación de Suelos y Aguas " considero que el INERHI debe asumir la dirección de este Subproyecto, designando en evidencia la interacción de otras Instituciones y las actividades que por las mismas Instituciones realice.

Para fortalecer el sistema y contribuir al que se crea desde el INERHI de Transferencia de Tecnología Rural, deberá de la participación de las Instituciones, que tienen a su cargo el desarrollo rural, realizar, asistido el apoyo del INERHI al referido Proyecto, que contribuya a la situación, efectuando programas en las áreas prioritarias a incrementar la producción con riesgo.

Aprovecho la oportunidad para expresarle el sustituyente de mi consideración más distinguida.

Atentamente,
EL DIRECTOR EJECUTIVO DEL INERHI.

[Handwritten signature]
Ing. Jaime Cevallos O.



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ANNEX E

INSTITUTO ECUATORIANO DE REFORMA AGRARIA Y COLONIZACION

Ofc. Nº 5421

Quito,

Señor Doctor
Oswaldo Hurtado Larrea
VICEPRESIDENTE DE LA REPUBLICA
En su Despacho.-

De mis consideraciones:

En conocimiento de la propuesta de Proyecto "Sistema de Transferencia Tecnológica Rural (STTR)", formulado por funcionarios de varias Instituciones del Estado y del AID, entre los cuales el IERAC participó con la presencia del Licenciado Ernesto Oviedo, se permite indicar lo siguiente:

1. El Instituto Ecuatoriano de Reforma Agraria y Colonización (IERAC), en un principio está de acuerdo con la propuesta denominada "STTR", en lo referente a la existencia tanto técnica como financiera que - los programas de nuestra institución, mediante la presentación de sub-proyectos y la asignación de la contraparte respectivos. Y,
2. Nuestra Institución se permite informar a usted, señor Vicepresidente, que las observaciones y recomendaciones del documento en mención, le hané llegado en el mejor tiempo posible.

Muy atentamente,
DIOS, PATRIA Y LIBERTAD

Señor Ricardo Muñoz Carriazo
DIRECTOR GENERAL DEL IERAC.

DEPARTMENT OF STATE

Memorandum of Conversation

DATE: June 26, 1980

SUBJECT: AID Integrated Rural Development Projects

PARTICIPANTS: Jaime ROLDOS Aguilera, President of Ecuador
The Ambassador

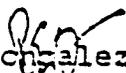
DATE: June 24, 1980

PLACE: National Palace

DIST: AMB DCM AID ECON ARA/AND AID/LAC

At my request I called on President Roldos on June 24 to review the status of USAID programs, with particular emphasis on our three rural development projects: Integrated Rural Development (IRD) Loan/Grant, Rural Technology Transfer (Title XII) Grant, and the DSB/ED funded Rural Non-Formal Education Project.

Roldos was well briefed on all three projects and said he endorsed them fully. He stated that he considers integrated rural development to be one of the highest priorities of his government. With regard to the GOE's institutional framework for implementing IRD programs, Roldos stated that he will soon (probably next week) issue a decree establishing an IRD Secretariat within the Presidency. Roldos said that by placing this new executive agency in his office the IRD Secretariat will be in a better position to direct and coordinate the participation of the various ministries and other government agencies having implementing responsibilities in the rural sector. While some thought had been given to placing the IRD Secretariat in CONADE, Roldos observed that under the Constitution CONADE is assigned a planning function more than an implementing one. The IRD Secretariat will have a small staff and draw on the ministries and agencies as needed for technical

AMB: REG  Gonzalez

(Drafting Office and Officer)

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support. The President placed considerable importance on the AID proposal which envisages support for the new integrated rural development mechanism, observing that our influence will thereby extend well beyond the two regional projects in Chimborazo and Cotopaxi Provinces. At the same time, Roldos concurred in the choice of these locations for the specific IRD model projects in our proposal.

The President also expressed satisfaction with the Title XII and Rural Training System projects commenting that they are interrelated and complementary to the IRD project.

Roldos saw no difficulty in generating the necessary counterpart contributions of at least one half of the total project costs from the GOE's own budget in the 1980-84 period.

I explained that the projects were still subject to AID/W approval but expressed confidence that we would obtain at least initial funding for all of them. Based on this assumption, I explored with the President the desirability of an appropriate signing ceremony in August with the possible participation of Congressman Paul Findley and Assistant Administrator Vaughn. Roldos responded enthusiastically and said he would be pleased to invite these officials to such a ceremony in the latter part of August.

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UNITED STATES GOVERNMENT

Memorandum

ANNEX E

TO : The Files

DATE: June 11, 1980

FROM : John A. Sanbrailo, AID Representative

SUBJECT: Meeting with Vice President Osvaldo Hurtado

I met with Vice President Hurtado on June 10, 1980, to discuss the three AID rural development projects: the Integrated Rural Development Loan/Grant, the Rural Technology Transfer (Title XII) Grant and the DSB/ED funded Rural Training Project. I outlined for the Vice President how AID understood the scope of each project, the counterpart requirements expected of the GOE and the implementing arrangements, particularly the use of the RDS that the GOE had requested. I thanked the GOE for the cooperation that we had received from the staffs of CONADE, MAG and other agencies. I indicated that each project was still subject to AID/W approval and that we could not specify exact funding levels until after the AID/W reviews.

The Vice President indicated that he had been briefed by the CONADE staff on each project, agreed with the scope and was aware of the funding levels at which each project was developed. He indicated that I would be given the GOE's formal letter of application for the Title XII Project after our meeting and that we would have the formal GOE letter of application for the IRD loan/grant by June 30 once he and the CONADE staff finished the review of the details of the project.

The Vice President indicated that all three AID projects would support high priority GOE efforts and he thanked us for the responsive manner in which USAID assisted CONADE and other agencies with project development. He further said that he was very disappointed that more progress had not been made in implementing rural development programs. He expressed his confidence that given changed conditions during the past month, that more progress could be made in the coming years.

We then turned our attention to the main purpose of the meeting which was to discuss the status of the Rural Development Secretariat (RDS). The Vice President recalled how he had requested USAID assistance for IRD and the RDS concept when the Ambassador and I first met with him back in October 1979, and again in January 1980, when we discussed the AID program in Ecuador. (Note: In January 1980, we reviewed with the Vice President the outlines of the AID/Ecuador strategy as presented in the FY 1982 CDSS). He was pleased that we had moved forward quickly and again expressed the importance of an improved coordinating mechanism for rural development programs.



5010-110

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

- 2 -

I indicated our concern about the slow progress in creating the RDS. I said that this would be an issue at the AID/W review of the project. The Vice President again expressed his personal frustration at the slow progress on rural development programs. He indicated that the RDS decision was pending with the President. Current problems that we were familiar with had prevented a decision. He again reaffirmed GOE policy to create the RDS and have the RDS administer all IRD projects, even those not funded by AID. The Vice President said the only pending question was the location of the RDS--either in the Presidency, Vice Presidency or CONADE. He indicated that the President would make the final decision shortly.

I indicated to the Vice President that the U.S. Ambassador had planned to visit the President to discuss various matters including the AID rural development projects. The Vice President indicated that this would be positive and again indicated that we could advise AID/W that it is GOE policy to create the RDS mechanism to administer IRD and related projects.

We then turned to the status of other AID projects including the integrated urban development project/low cost housing and training for development. We reviewed the status of each.

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Department of State

INCOMING
TELEGRAM

ANNEX E
10.

PAGE 01 QUITO 04471 061953Z
ACTION AID-35

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ACTION OFFICE LACE-03
INFO LADP-03 LADR-03 AADS-01 CH8-01 RELO-01 MAST-01 OSED-01
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TO SECSTATE WASHDC IMMEDIATE 6827

UNCLAS QUITO 4471

AIDAC

LAC PASS TO AID REP SANBRAILO FROM AMBASSADOR

EO 12065: NA
TAGS: EAID, EC
SUBJECT: RURAL DEVELOPMENT SECRETARIAT

1. PRESIDENT ROLDOS TOLD ME THAT AS A RESULT OF HIS RECENT VISIT TO ALL THE MINISTRIES AND OTHER GOVERNMENT AGENCIES, HE WAS MAKING SOME SLIGHT MODIFICATIONS IN THE DECREE ESTABLISHING THE RDS. THE CHANGES, HE SAID, WOULD IMPROVE THE COORDINATING FUNCTION OF THE SECRETARIAT. ROLDOS SAID THE DECREE WOULD BE PUBLISHED NEXT WEEK AND HE RECONFIRMED THE RDS WOULD BE LOCATED IN THE PRESIDENCY.
2. I REITERATED OUR INTEREST IN THIS MATTER AND NOTED ITS RELEVANCE TO THE APPROVAL OF THE PROJECTS NOW BEING CONSIDERED IN AID/W.
GONZALEZ

UNCLASSIFIED

ASSISTANT
ADMINISTRATOR

PROJECT AUTHORIZATION

Name of Country: Ecuador
Name of Project: Rural Technology Transfer System
Number of Project: 518-0032

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 \$5,300,000 in grant funds over a five-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 foreign exchange and local currency costs for the project.

2. The project consists of (a) financing a series of subprojects designed to address the constraints to institutional improvement and technology generation and dissemination, and (b) assisting the Government of Ecuador (the "GOE") in establishing a Rural Technology Transfer System (RTTS) which will deal further with these as well as other constraints (the "Project").

3. The Project Agreement, 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. Source and Origin of Goods and Services

Goods and services, except for ocean shipping, financed by A.I.D. under the Project 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 Project shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States.

b. Conditions Precedent to Initial Disbursement

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

(i) formally establish the Rural Development Secretariat (RDS) and establish the RTTS as part of the RDS, with a chief operating officer of the RTTS named and on board; and

(ii) cause the RTTS 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.

c. Condition Precedent to Disbursements for the RTTS Fund

Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, for the RTTS Fund, the RTTS 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.

d. Conditions Precedent to Disbursements for each Calendar Year

Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, for each calendar year, the RDS shall, except as A.I.D. may otherwise agree in writing, furnish in form and substance satisfactory to A.I.D. an implementation plan for each such year, listing subprojects anticipated to be initiated during such calendar year and a statement of anticipated financial needs for the Project during such year, both on-going and new.

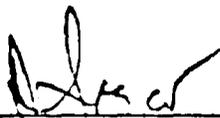
e. Conditions Precedent to Disbursements for each Subproject

Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, to finance each subproject, the RTTS shall, except as A.I.D. may otherwise agree in writing, furnish in form and substance satisfactory to A.I.D., for each such subproject, technical, economic, social and environmental analyses, a detailed administrative plan, and written evidence of a financial commitment from each participating institution.

f. Covenants

Except as A.I.D. may otherwise agree in writing, the GOE shall covenant and agree that:

- (i) it will contribute to the RTTS Fund, beginning no later than the third Project year, annual funds of amounts jointly agreed to by A.I.D.;
- (ii) it will continue the RTTS Fund, with adequate funding, after the termination of the Project; and
- (iii) 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.



 Acting Assistant Administrator
 Bureau for Latin America
 and the Caribbean

7/31/80

 Date

Clearances:

GC/LAC:JLKessler JKL date 7/16
 LAC/SA:RWeber _____ date _____
 LAC/DR:NParker _____ date _____
 LAC/DR:ILevy IL date _____
 LAC/DR:MBrown MB date 7/25
 GC/LAC:GMWinter GM date 7/7/80



BOARD FOR INTERNATIONAL FOOD AND AGRICULTURAL DEVELOPMENT
INTERNATIONAL DEVELOPMENT COOPERATION AGENCY

Agency for International Development
Washington, D.C. 20523

July 11, 1980

Mr. John Sanbrailo
AID Representative
USAID/Ecuador

Dear Mr. Sanbrailo:

Thank you for your letter of July 9 requesting a list of Title XII institutions to implement the project - Rural Technology Transfer Systems. We recommend the following universities as most capable of successfully implementing the subject project whether by themselves or by joint efforts. I'm providing names and addresses of Title XII Representatives for your convenience.

Dr. Joseph F. Metz
Title XII Representative
Cornell University
261 Roberts Hall
Ithaca, New York 14853

Dr. Hugh Popenoe
Title XII Representative
University of Florida
Gainesville, Florida 32611

Dr. Richard D. Gibb
Title XII Representative
University of Idaho
Moscow, Idaho 83843

Dr. William N. Thompson
Title XII Representative
University of Illinois
Urbana, Illinois 61801

Dr. H. F. Massey
Title XII Representative
University of Kentucky
Lexington, Kentucky 40506

Dr. Edward M. Wilson
Title XII Representative
Lincoln University
Jefferson City, Missouri 65101

Dr. Ralph H. Smuckler
Dean, International Studies & Programs
Title XII Representative
Michigan State University
East Lansing, Michigan 48824

Dr. Louis N. Wise
Title XII Representative
Mississippi State University
Mississippi State, Mississippi 39762

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Dr. William Reed
Title XII Representative
North Carolina State A & T
University
Greensboro, North Carolina 27411

Dr. Arthur E. Adams
Title XII Representative
Ohio State University
Columbus, Ohio 43210

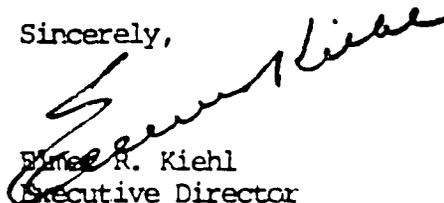
Dr. Hugh Rouk
Title XII Representative
Oklahoma State University
Stillwater, Oklahoma 74074

Dr. D. Woods Thomas
Title XII Representative
Purdue University
West Lafayette, Indiana 47906

Dr. T. R. Greathouse
Title XII Representative
Texas A & M University
College Station, Texas 77843

Dr. Boyd Wennergren
Title XII Representative
Utah State University
Logan, Utah 84322

Sincerely,



Elmer R. Kiehl
Executive Director

July 14, 1980

Dr. Elmer R. Kiehl
 Executive Director
 BIFAD
 Agency for International Development
 Washington, D.C. 20523

Dear Dr. Kiehl:

Thank you for your letter of July 11, 1980 in which you provided USAID/Ecuador with a short-list of Title XII Universities that BIFAD considers qualified to serve as lead university for the Ecuador Rural Technology Transfer (Title XII) Project.

We look forward to working closely with BIFAD in the preparation of the RFTP, the selection of the lead university and in the implementation of the Ecuador Project. To assist you in your planning and discussions with potential lead universities, I would like to briefly outline how we see the next steps in the selection process of the lead university:

- First, the LAC Bureau of AID will authorize the Ecuador Title XII Project and provide the USAID with an initial allotment of funding by July 31, 1980.
- Second, USAID/Ecuador during August 1980 will negotiate the Project Agreement between AID and the GOE. We hope to sign this Agreement by the end of August 1980.
- Third, BIFAD should immediately encourage those universities on your short-list to begin familiarizing themselves with the problems and institutions of the Ecuadorean agricultural sector and policies of the new GOE. For background information, we believe that BIFAD should submit to each university on your short-list the following documents: (1) Ecuador Title XII Baseline Study of Agricultural Research, Extension and Education (March 1979), (2) World Bank Country Study (July 1979) Ecuador: Development Problems and Prospects, (3) Ecuador General Working Document: An Annotated AID Bibliography on Rural Ecuador, (4) the Rural Development Section of GOEs National Development Plan (1980-84), and (5) Selected Sections of USAID/Ecuador Country Development Strategy Statement (CDSS). Mr. Leo Garza of LAC/DR/SA is prepared to assist the BIFAD staff in preparing packages of this information for you to send to each university. The universities should be reminded that an important aspect of the criteria in judging their responses to the RFTP will be their demonstrated knowledge of Ecuadorean agricultural problems and institutions. Therefore, universities may wish to use the next several months to begin reviewing the available literature and studies on the Ecuadorean agricultural sector.

-2-

-- Fourth, in September 1980, we expect that USAID/Ecuador, the AID Regional Contract Officer from Panama and an appropriate staff member from BIFAD will prepare the Request for Technical Proposals (RFTP) in Quito with GOE officials. The RFTP will include as an annex a modified version of the Ecuador Title XII Project Paper. The PP should not be submitted to any universities until that time and as you would expect no budget figures will be included in the information sent out to the universities. We would hope to submit the RFTP to the universities by the end of September 1980.

-- Fifth, the Universities will be given 90 days to submit their responses to the RFTP. (Previous to this time, they will also have had several months to review background information on Ecuador). We hope to receive all responses from the universities by December 31, 1980.

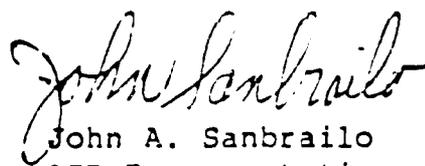
-- Sixth, a committee composed of representatives from the Government of Ecuador, USAID, and BIFAD, will begin a review of the responses in early January 1981. Ranking of university responses will be completed by January 30, 1980. (The draft criteria for selecting the lead university is outlined in an attachment to this letter and these criteria will be revised and finalized in September 1980 with the completion of the RFTP.)

-- Seventh, the RFTP will be ranked by the project selection committee and the contract officer instructed to negotiate with the university on top of the list. We expect that the cost proposal and final selection to be negotiated and completed by March 31, 1981.

-- Eighth, the lead university's Chief-of-Party should be ready for a temporary assignment to Ecuador by mid May 1981 and a long-term assignment by August 1981.

We would appreciate any comments that the BIFAD staff have on the above schedule and procedures. We would also appreciate if a Spanish-speaking BIFAD staff member could be formally assigned to follow the Ecuador Project and assist USAID facilitate the most rapid contracting of the lead university. Because of the high priority of the Ecuador Title XII Project, we appreciate the continued excellent cooperation and support that we have been receiving from BIFAD staff.

Sincerely yours,



John A. Sanbrailo
AID Representative
USAID/Ecuador

cc:
R. Weber, LAC/SA
N. Parker, LAC/DR/SA
C. B. Allen, LAC/DR/RD
L. Garza, LAC/DR/SA

ATTACHMENT

ECUADOR -- RURAL TECHNOLOGY TRANSFER (TITLE XII) PROJECTDraft Illustrative Criteria to be used in Selecting
the Lead University

1. Previous successful experience in formulating and implementing technical assistance projects in rural areas of developing countries, particularly the Andean Region of Latin America.
2. Previous successful experience assisting agricultural research, education and extension efforts directed to small farmers in developing countries.
3. Demonstrated capacity and experience of the lead university to integrate agricultural research, extension and education activities within its own program .
4. Previous successful experience supporting implementation of integrated rural development (IRD) programs and assisting REE systems required for carrying out IRD programs. (Note: The GOE's counterpart agency for the lead university, the Rural Development Secretariat, will be dedicated to planning and coordinating IRD programs directed to the rural poor. The new USAID/E program strategy is designed to strengthen the GOE's institutional capacity to undertake integrated rural development projects).
5. Willingness of the lead university to identify with Ecuador over a long period of time, extending beyond the life of the AID project. (Willingness to identify with Ecuador will be judged by the following factors: number and quality of tenured faculty dedicated to Latin American agricultural development, number of research projects and publications by faculty members on Latin American agricultural problems with special emphasis on the Andean region, special training programs developed for Latin American countries and in particular for Ecuadorean trainees, etc.).
6. Qualifications and previous professional experience of the Chief-of-Party that will represent the lead university in Ecuador. It is expected that the lead university will identify the proposed team leader in its RFTP and that this individual will have at least an S-3/R-3 level in Spanish and demonstrated record of high achievement in effectively managing technical assistance projects in developing countries. It is expected that the Chief-of-Party will come from the Lead University's tenure or tenure track faculty.

7. Ability of the lead university to provide technical personnel with Spanish language competence for both resident and short-term assignments in Ecuador over an extended period of time with specialization required in the following areas: (a) soil conservation techniques in mountain agriculture, b) small farmer research, extension and education systems, c) agricultural planning and statistics, d) planning of vocational technical agricultural training programs (Jr. College level) e) soybean production, research and processing, f) rural youth training programs and g) small farmer irrigation systems in mountain agriculture.

8. Management capacity, demonstrated ability and willingness to identify and mobilize technical and training resources from throughout the U.S. land grant university system, international agricultural research centers and other agencies and direct these resources to a developing countries.

9. Ability and willingness to mobilize resources from "1890" U.S. land grant schools.

10. Experience in AID methodology and procedures for implementing U.S. foreign assistance projects.

11. A detailed understanding of Ecuadorean rural development problems and institutions and the purposes of the AID-financed project to be demonstrated by the quality of the university's response to the RFTP.

12. Other criteria that may be developed at a later date.

Procurement Plan

The lead university will be the primary action agent for all foreign procurement under the project. At this time, only limited purchases of vehicles and equipment are expected (see detailed budgets under each subproject). One of the factors which will be used by USAID to select the lead university will be the university's familiarization with A.I.D. procurement regulations. This will ensure that procurements are accomplished on a timely basis. A summary version of the procurement plan follows:

SUMMARY OF PROCUREMENT
AID FINANCING
RURAL TECHNOLOGY TRANSFER SYSTEM

Description of Goods and Services	Estimated Cost	Origin Source	Contract Mode	Grant Disbursement Procedures
1. <u>Lead University Core Contract</u>				
1.1 Long-run T.A.	655	000/HC	RFP	AID financed Letter of Credit
1.2 Short-run T.A.	84	000/HC	RFP	AID financed Letter of Credit
1.3 Training	25	000/HC	RFP	AID financed Letter of Credit
1.4 Vehicles & Equip.	36	000/HC	RFP	AID financed Letter of Credit
1.5 Studies & Evalua.	50	000/HC	RFP	AID financed Letter of Credit
1.6 Local Expenditures	8	000/HC	RFP	AID financed Letter of Credit
2. <u>Task Orders Under Sub-projects (Illustrative)</u>				
2.1 Short-term T.A.	871	000/HC	N.A.	AID financed Letter of Credit
2.2 Long-term T.A.	206	000/HC	N.A.	AID financed Letter of Credit
2.3 Training	1,412	000/HC	N.A.	AID financed Letter of Credit
2.4 Vehicles & Equip.	530	000/HC	N.A.	AID financed Letter of Credit
2.5 Local Expenditures	129	000/HC	N.A.	AID financed Letter of Credit
2.6 Studies & Evalua.	33	000/HC	N.A.	AID financed Letter of Credit
3. <u>Inflation & Contingencies</u>	605			
4. <u>Other Costs</u>	656			
Totals	5,300			